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Clean Construction Accelerator

Planned Actions to Deliver Commitments

C4O
CITIES

Budapest

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ACCELERATOR COMMITMENTS

Prioritise the better use, repurposing, and retrofit of existing building stock and infrastructure across the city to ensure their optimal use before new construction projects are considered.

Lead by example with municipal procurement by:

- **Requiring life cycle assessments (LCAs) and the diversion of construction and demolition waste from disposal for all municipal projects.**
- **Use municipal purchasing power to procure or demand zero emission construction machinery in municipal projects from 2025, where available.**
- **Reward resource efficient and circular design, use of low carbon materials, and low to zero waste construction sites for all new projects and major retrofit.**

Demand transparency and accountability, starting with requiring LCAs in planning permissions and embedding them into planning policies, processes and building codes within a year of endorsing this accelerator. Require the public disclosure of this data to facilitate greater transparency and foster accountability to develop robust baselines, standards, certifications and policies.

INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

- Budapest has already developed its guideline on energetic refurbishment of historical buildings which will serve as a basis for needs assessment.
- Budapest intends to strengthen its social housing services by adding new functions to the existing, but underutilized building stock.

- Budapest has already started to assess potential pilot projects and will provide a list of potential intervention fields.
- Budapest will implement small-scale pilot projects in 2021-2022 to prepare for large-scale implementation.
- Budapest aims to engage the market players from the beginning; therefore, the city will hold market consultation and undertake research during 2021-2022.

- Budapest will publish the process and results on a dedicated website and facilitate cooperation with national stakeholders and propose legislation to co-develop baselines and standards with key stakeholders for clean construction.

Work with businesses, industry, public institutions, residents, workers, social partners and other organizations to establish a joint roadmap and set interim targets towards the collective 2030 goals adhering to circular economy principles within two years of endorsing this accelerator, and incorporate it into our Climate Action Plan. The roadmap will provide an implementation pathway to the Clean Construction Accelerator actions and to reaching its goals inclusively and equitably.

Approve at least one net zero emission (operational and embodied) flagship project by 2025.

Assess the impact our choice of materials and construction design will have on our cities' overall resilience to climate impacts (i.e. increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).

Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.

Publicly report every year on the progress our cities are making towards these goals.

- Budapest will engage key stakeholders, with special attention to district municipalities and citizens.

- Budapest will implement gamification and start a scholarship to identify novel technologies and models for clean construction.

- Budapest will spread its findings and best practices within its network, such as EUROCITIES, ICLEI, Climate-KIC, Energy Cities and Big Buyers Initiative of the European Commission.

- Budapest will prepare small-scale pilot projects to identify drivers and barriers by 2022.

- Budapest has already published several guidelines on energetic renewal, brownfield regeneration and handbooks on greener infrastructures (green roofs and facades, permeable road coverings, urban trees and utilities, water-sensitive planning in cities and urban inner-yard rehabilitation).

- Budapest will facilitate cooperation with national stakeholders and propose legislation to co-develop baselines and standards with key stakeholders for clean construction.

- Budapest will publish its annual report on a dedicated website.

- The City will integrate clean construction targets into its Sustainable, Green and Innovation Procurement Strategy by 2021.

ACCELERATOR COLLECTIVE GOALS

Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030

To reduce embodied emission in new buildings and retrofits implemented the Municipality of Budapest, the City will

- carry out research on building construction material flows (LCA), building standards and available methodologies and practices by 2022;
- undergo energy audits for municipal buildings and facilities, including municipal institutions and utilities by 2025, and later use the results of the LCA assessments for newly built municipal buildings to calculate the potential emission savings and identify and prioritize measures;
- utilize its procurement power and held market dialogue sessions with suppliers;
- apply for clean construction pilot projects and implement

- small-scale projects by 2023;
- prepare a guide and roadmap for reducing embodied emission by 2024;
- propose legislative change to support clean construction both on the city level (e.g. harmonising building and procurement regulations across different administrative levels) and on the national level, since the current legislative background is exceedingly complex and inflexible;
- develop a monitoring scheme for clean construction developments;
- extend clean construction methodology to the city level by 2030;
- integrate clean construction objectives to city strategies.

Reduce embodied emissions by at least 50% of all infrastructure projects by 2030

To reduce embodied emissions of infrastructure projects implemented by the Municipality of Budapest, the City will

- carry out research on construction material flows (LCA), infrastructure construction standards and available methodologies and practices by 2022;
- identify potential EU funded infrastructural projects (2021-2027) where clean constructions are feasible;
- utilize its procurement power and hold market dialogue sessions with suppliers;
- apply for clean construction pilot projects and implement small scale projects by 2023, including life cycle thinking and zero-emission constructions;

- prepare a guide and roadmap for reducing embodied emissions by 2024;
- propose legislative change to support clean construction both on city level (e.g. harmonising infrastructure building and procurement regulations across different administrative levels) and on national level since the current legislative background is exceedingly complex and inflexible;
- develop a monitoring scheme for clean construction developments;
- extend clean construction methodology to the city level by 2030;
- integrate clean construction objectives to city strategies.

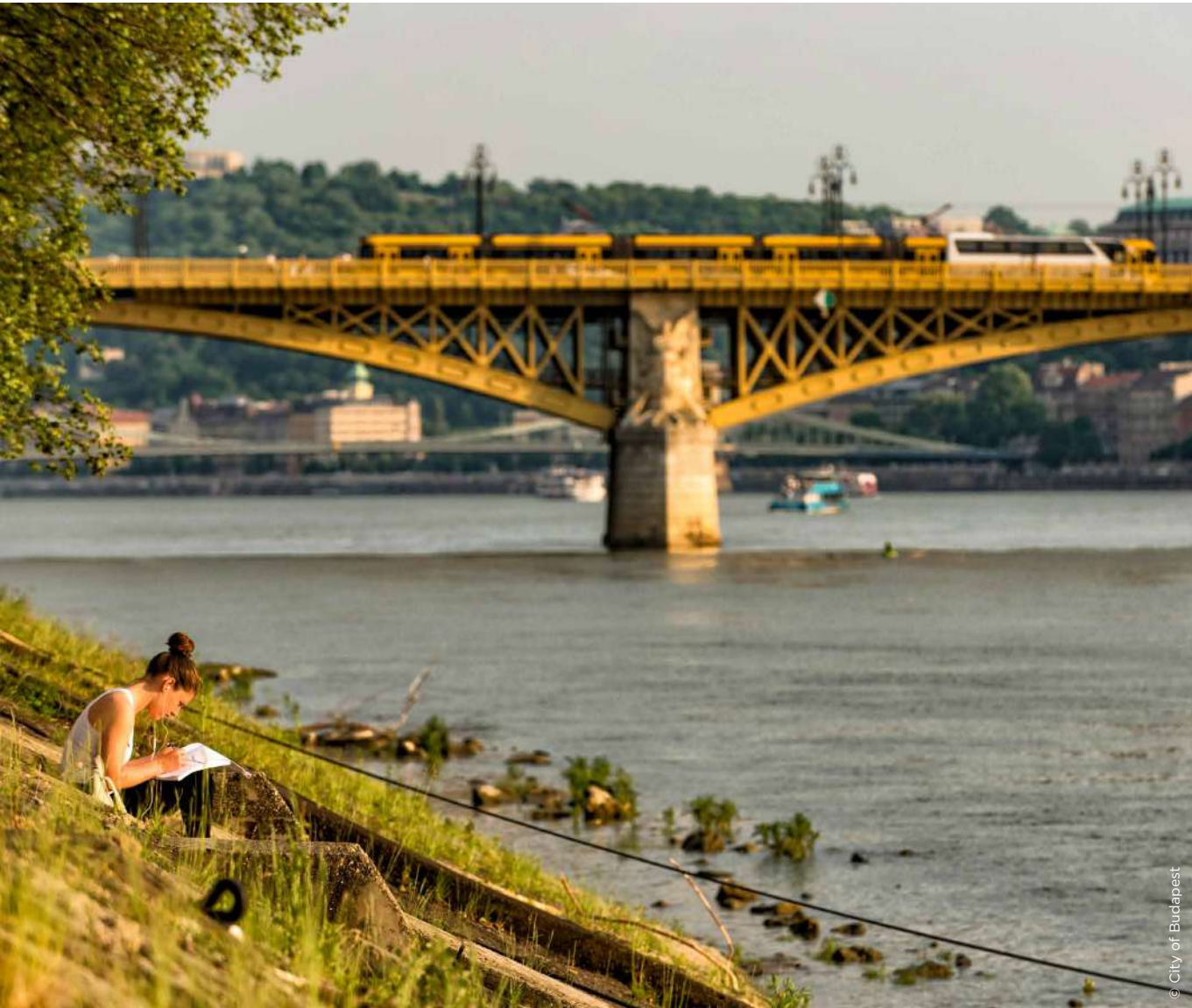
INTENDED ACTION/APPROACH TO SUPPORT THE GOALS

Require zero emission construction sites city-wide by 2030, where technology is available

- hold market consultations to assess suppliers' approach to zero-emission construction machinery and available technologies;
- develop a roadmap to foster the transition from fossil fuel-based machinery to zero-emission by 2025;
- implement indoor pilot projects by 2022 and outdoor pilots by 2025.

Example of financial resources available to deliver the commitments (can be applicable to one, some, or all of the accelerator commitments or supportive actions above).

- Budapest will allocate around 570 000 EUR in its 2021 budget for launching pilot interventions.



London

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ACCELERATOR COMMITMENTS

Prioritise the better use, repurposing, and retrofit of existing building stock and infrastructure across the city to ensure their optimal use before new construction projects are considered.

Lead by example with municipal procurement by:

- **Requiring life cycle assessments (LCAs) and the diversion of construction and demolition waste from disposal for all municipal projects.**
- **Use municipal purchasing power to procure or demand zero emission construction machinery in municipal projects from 2025, where available.**
- **Reward resource efficient and circular design, use of low carbon materials and low to zero waste construction sites for all new projects and major retrofit.**

INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

- **Planning policy:** The [London Plan](#) prioritises the better use, repurposing and retrofit of existing buildings through the following objectives and policies: Good Growth Objective 5 and Good Growth Objective 6 (which promote the benefits of a low carbon circular economy), and policies Sustainable Infrastructure 2 (requires whole life-(WLC) cycle carbon assessments and the supporting guidance places re-use as the first WLC principle), Sustainable Infrastructure 7 (requires developments to aim for net zero-waste, to produce Circular Economy Statements (CES) and follow the waste hierarchy to encourage use of existing materials and structures).
- **Monitoring WLC policy:** first summary report of progress to be published by Dec 2022.
- **Monitoring CES Policy:** A progress report is scheduled for early 2023. In addition, the Horizon 2020 CIRCulT project (developing solutions for CE in the built environment with EU city partners and London) is developing a materials exchange portal and performance monitoring database.
- **Tackling national barriers:** 20% VAT is typically paid on refurbishment projects but not new build developments which sets the wrong incentive. This is an issue we need national government to address, and we will continue to identify opportunities to lobby on this.
- **LCAs and diversion of waste:** WLC assessments (or LCAs) and CE statements are required by planning policy for all developments referred to the Mayor.
- **Construction machinery:** London's Low Emission Zone for Non-Road Mobile Machinery (LEZ NRRM) sets strict standards to control emissions from construction sites. Standards will become more stringent in 2025 and 2030 with an aim for zero emission machinery by 2040. The London Environment Strategy and Transport Strategy commits the Mayor to lead by example and exceed these standards in GLA Group projects where possible.
- **Municipal purchasing power:** An updated Responsible Procurement Action Plan which commits the GLA Group to identifying opportunities to reduce emissions through our procurement activities was published in September 2022. Actions include: all new contracts to ensure zero-emission deliveries to GLA sites from 2025 and new benchmarks for sustainable construction were created in June 2022 and are expected to be adopted by the GLA Group in January 2023. We are also piloting ReLondon's CE SME matchmaker platform to identify suitable construction and IT contracts.

Demand transparency and accountability, starting with requiring LCAs in planning permissions and embedding them into planning policies, processes and building codes within a year of endorsing this accelerator or in the next revision of planning policies and codes. Require the public disclosure of this data to facilitate greater transparency and foster accountability to develop robust baselines, standards, certifications and policies.

Work with businesses, industry, public institutions, residents, workers, social partners and other organizations to establish a joint roadmap and set interim targets towards the collective 2030 goals adhering to circular economy principles within two years of endorsing this accelerator, and incorporate it into our Climate Action Plan. The roadmap will provide an implementation pathway to the Clean Construction Accelerator actions and to reaching its goals inclusively and equitably.

- **Rewards:** As more case studies become available, we will promote best practice examples through the monitoring reports referred to against Commitment 1.

- **Planning policy:** As explained above, the whole life-cycle carbon policy was introduced in the London Plan in March 2021.
- **Public disclosure:** All whole life-cycle carbon assessments are publicly available via each borough's planning portal. To make this information more accessible we will publish an annual report on progress, the first will be published by end 2022. We are also engaging with RICS as part of an industry working group to update the Built Environment Carbon Database to help create consistency in WLC data and share it publicly, and which planning applicants will be required to submit information to. The beta version of the data base is under consultation and users will be able to submit data in October 2022.

- **London's Circular Economy Route Map** has been developed by ReLondon in partnership with London stakeholders to enable London to become a circular, resource-efficient city. The built environment is one of five focus areas with supporting actions to achieve this aim. The Mayor is working with ReLondon and partners to implement these actions. The Mayor will work with ReLondon to understand how the collective 2030 goals can be aligned with a future update of the route map.
- We will also consider how future updates to the Mayor's 1.5C Climate Action Plan can take

- **NRRM monitoring:** All construction sites must register their NRRM on the GLA's database to demonstrate compliance with the NRRM LEZ standards. Between 2019 and 2022 this scheme has reduced PM and NO_x emissions from NRRM by 42% and 36% respectively, alongside an 11.5% reduction in CO₂ from construction NRRM. We routinely enforce compliance with the standards which has significantly improved compliance from 42 per cent without enforcement to 91 per cent with enforcement. Since 2019, 2172 site audits have been undertaken. The Mayor of London has funded this NRRM LEZ scheme alongside match funding from local authorities.

- progress against the Circular Economy Route Map and the 2030 collective goals into account as we develop our work on calculating and reducing scope 3 emissions.
- Through the Horizon 2020-funded, Circular Construction in Regenerative Cities (CIRCulT) project, in collaboration with 31 Partners across the built environment chain in Copenhagen, Hamburg and Helsinki, the Mayor, along with ReLondon, aims to showcase how circular construction approaches can be scaled and replicated enabling cities to build more sustainably and transition to a circular built environment.

Approve at least one net zero emission (operational and embodied) flagship project by 2025.	A number of net zero emission (operational and embodied) flagship projects have already been approved by the GLA in London including: 80 Charlotte Street and 100 Liverpool Street which have offset residual emissions to achieve net zero Timber Square is also aiming to be	net zero emission in line with the UKGBC framework. It is anticipated to be completed in early 2024. We will review the GLA Group project pipeline and identify potential projects that could be encouraged to meet the criteria by the end of 2022.
Assess the impact our choice of materials and construction design will have on our cities’ overall resilience to climate impacts (i.e., increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).	Our planning policy already integrates this thinking into building design. The London Plan (Policy SI 4) requires planning applicants to follow the cooling hierarchy to avoid overheating and undertake dynamic overheating modelling to identify and mitigate against overheating risk. It also requires consideration of Urban Heat Island (UHI) impact through design, choice of materials and incorporating green infrastructure. A UHI checklist for planning applicants is being developed and will be ready for use in 2023.	- Research and guidance into retrofit measures for existing buildings to improve their climate resilience has also recently been completed. - The London Plan also has established policies on flood risk management and sustainable urban drainage to ensure climate impacts are understood and considered in building design. - In light of the extreme weather events in London in 2022, we will undertake further work to assess whether planning policies related to UHI impact, flood risk management, and sustainable drainage are achieving intended outcomes.
Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.	- We are working with national government through an expert advisory working group to share the lessons learned from introducing the WLC policy in London to help inform a national approach. - We also work closely with local authorities outside London and most recently have provided expertise and advice to the South West Local Authorities who are intending to adopt our whole life-cycle carbon policy and guidance. As more local authorities introduce such policies this helps support its adoption at a national level.	The Mayor’s powers to set and enforce the NRRM LEZ standards, and to define the scope of NRMM, are limited. Following our lobbying a commitment to introduce direct legislation is included in the Government’s Clean Air Strategy. We continue to publicly call for better regulation in this area at every opportunity.
Publicly report every year on the progress our cities are making towards these goals.	We commit to reporting publicly.	

ACCELERATOR COLLECTIVE GOALS	INTENDED ACTION/APPROACH TO SUPPORT THE GOALS	
Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030	- Track and report progress against WLC benchmarks annually (first report due by end 2022) to inform future benchmark updates and future targets. - Continue to work with industry leaders (LETI, UKGBC etc.) on development of the benchmarks and identifying projects that could work towards the 50% collective aim.	- Continue to engage with Oslo on the targets that they are due to adopt in policy and subsequent reviews of progress. - Continue to participate in the national government’s Embodied Carbon Expert Advisory Group to inform a national approach.
Reduce embodied emissions by at least 50% of all infrastructure projects by 2030	- All actions above will also apply to infrastructure projects. - A 6 month study is underway to understand the impact of the Mayor’s preferred net zero pathway on London’s utilities and road networks. It will include embodied carbon impacts and will help inform our engagement with the sector on how to improve infrastructure coordination, plan effectively for net-zero and minimise disruption and carbon impacts in London.	To reduce disruption for Londoners during utility network upgrades a “dig once” collaborative street works approach is being promoted. The carbon, air quality and social value impact will be assessed through a monitoring and evaluation tool which is being developed.
Require zero emission construction sites city-wide by 2030, where technology is available	- Develop planning guidance to support the Non-Road Mobile Machinery Low Emission Zone (which has a city wide zero emission standard for construction machinery from 2040) and consider how it could align with the 2030 goal. New guidance will be developed in 2023. - Consider opportunities to require zero emission construction sites by 2030 on GLA/TfL sites.	We will work with industry and power companies and regulators on zero emission NRRM to promote early electrification and alternative power sources.





Los Angeles

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INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

LA adopted the Adaptive Reuse Ordinance (ARO) in 1999 which offers regulatory exemptions and project streamlining for developers reusing an old site for a new purpose. 72% of ARO projects are developed within 1/2 mile from Metro rail stations and so have reduced VMT. ARO buoyed development during the last recession and is expected to do so again during this recession.

Since 2010, the City of LA has a policy requiring all mixed C&D waste to be taken to City-certified C&D waste processing facilities. Non-compliance penalties of \$5,000 per load are levied.

- Launch Zero by Design, a utility program to incentivize design teams to reduce operational and embodied carbon, by Q2 2021.
- By Q4 2021, investigate how to offer preference points for contractors who utilize zero emission construction equipment on City projects.

- In 2021, revisit the ARO to see what enhancements might be helpful.
- Encourage adaptive reuse of existing buildings through developing incentives and fast track permitting for qualified projects by Q4 2021.
- Work with BOE to implement Buy Clean CA requirements for steel, flat glass, and mineral wool board insulation procurement throughout 2021.
- Work with BOE to pilot LCA review for City buildings by utilizing the LEED v4.1 pilot credit by Q4 2022.

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Assess the impact our choice of materials and construction design will have on our cities' overall resilience to climate impacts (i.e. increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).

- Encourage LCA review and disclosure for projects through developing incentives and fast track permitting for qualified projects by Q4 2024.
- During Q4 2020, prepare a stakeholder map and set up a working group meeting schedule for 2021. Working group invitees will include, but may not be limited to: architects, engineers, contractors, developers, tenants, and City Departments.
- The working group will craft implementation targets with a foundation of equity and economic inclusion. The roadmap will be developed by 2022 and will be an addendum to LA's Green New Deal (our CAP).
- LA has several City projects that are net zero energy, as well as one certified as LEED Net Zero Energy (our utility headquarters).
- Review buildings within our portfolio in 2021-2022 that are ready for retrofit and identify one or more that can be fully decarbonized, powered by on-site renewable energy, and use low carbon materials.
- Heat island effect is of paramount concern in LA and several initiatives and code updates are in progress to establish cool streets and cool neighborhoods, make all new roofs cool roofs, and increase cool hardscapes on private property. The SRI number range is the prescriptive standard by which we verify project compliance, it has been calculated by ASTM E 1980 and verified by Lawrence Berkeley National Lab to be appropriate for LA's climate conditions.

Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.

- Mayor Garcetti's leadership with networks of Mayors, Congressional leaders, and all levels of government – as well as planning for COP26 – can draw attention to embodied carbon action on a large scale.

Publicly report every year on the progress our cities are making towards these goals.

- Report ongoing progress to C40 on an annual basis.

ACCELERATOR COLLECTIVE GOALS

Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030

- Select a set of City buildings and calculate the embodied carbon of their design, construction, and operation to pilot as a baseline, by Q4 2021.
- Collaborate with industry groups to deliver training on the EC3 tool so the industry gains familiarity with low-carbon products and

design choices throughout 2021.

- Launch working groups in 2021 for architecture, engineering, contractors, developers, and tenants to develop a roadmap to 2030.

Reduce embodied emissions by at least 50% of all infrastructure projects by 2030

- Select a set of City infrastructure projects and calculate the embodied carbon of their design, construction, and operation to pilot as a baseline by Q4 2021.
- Send market signals for low carbon and/or carbon sequestering concrete throughout 2021.

- Pilot use of above products throughout 2021.
- Work with Contract Administration, Procurement, and relevant departments to standardize terms for all City infrastructure project contracts by 2022.

Require zero emission construction sites city-wide by 2030, where technology is available

- By Q1 2021, investigate potential to add procurement preference to City contracts for contractors who use zero emission equipment. Implement for Public Works contracts by 2022.
- Convene focus groups in 2021 for general contractors to discuss how to advance electric equipment use in the region in accordance with the 2025 and 2030 goals.

Example of financial resources available to deliver the commitments (can be applicable to one, some, or all of the accelerator commitments or supportive actions above).

- We will seek outside funding support to achieve the CCA from Energy Foundation and other foundations. Our City budget has been affected by COVID-19 and resources are limited at this time.



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Mexico City

COMPROMISOS DEL ACELERADOR

Priorizar el mejor uso, reasignación y modernización del stock de edificios y la infraestructura existente en toda la ciudad para garantizar su uso óptimo antes de que se consideren los nuevos proyectos de construcción.

Predicar con el ejemplo en la contratación pública municipal:

- Exigiendo evaluaciones del ciclo de vida (ACV) y la desviación de los residuos de construcción y demolición de la eliminación de todos los proyectos municipales.
- Utilizar el poder de compra municipal para adquirir o exigir maquinaria de construcción con cero emisiones en los proyectos municipales a partir de 2025, cuando esté disponible.
- Premiar el diseño circular y de uso eficiente de los recursos, el uso de materiales con bajas emisiones de carbono y la reducción a cero de los residuos.

ACCIÓN PREVISTA/ENFOQUE PARA EL CUMPLIMIENTO DE LOS COMPROMISOS

- Derivado de las medidas de higiene y salud en la pandemia COVID-19, la mayoría de los empleados esta realizando su trabajo a distancia (teletrabajo).
- Debido a este acuerdo, la CDMX esta considerando permitir a este sector trabajar a distancia disminuyendo el uso de los edificios gubernamentales manteniendo estas áreas abiertas al público y creando nuevas áreas de coworking o trabajo colaborativo.
- El programa de certificación de edificios sustentables está desarrollando criterios en conjunto con el Instituto Nacional de Antropología para edificios históricos.
- Norma de residuos de la construcción, donde se establece el uso de concreto reciclado en la construcción de nuevos edificios públicos y privados.
- Actualización de los lineamientos de compras del gobierno, enfocados a la adquisición sustentable, desde una perspectiva de análisis de ciclo de vida en el caso que existan estudio, o mediante el reconocimiento de certificaciones existentes.

Exija transparencia y rendición de cuentas, empezando por exigir ECV en los permisos de planificación e incrustándolos en políticas de planificación, procesos y códigos de construcción dentro de un año de respaldar esta acelerador. Exigir la divulgación pública de estos datos para facilitar una mayor transparencia y fomentar la rendición de cuentas para desarrollar lineamientos base, estándares, certificaciones y políticas sólidas.

Trabajar con empresas, industria, instituciones públicas, ciudadanos y otras organizaciones para establecer una hoja de ruta conjunta y fijar objetivos intermedios hacia los objetivos colectivos de 2030 que se adhieran a los principios de la economía circular dentro de los dos años siguientes a la aprobación de esta acelerador e incorporarla a nuestro Plan de Acción Por Climático. La hoja de ruta proporcionará un camino de aplicación a los compromisos de acelerador de construcción limpia y a alcanzar sus objetivos de manera inclusiva y equitativa.

Aprobar al menos un proyecto emblemático de cero emisiones netas (operativas e incorporadas) para el 2025.

Evaluar el impacto que la selección de materiales y diseño de construcción tendrá en la resiliencia general de nuestras ciudades a los impactos climáticos (es decir, el aumento de la isla de calor urbano, la superficie impermeable aumentando el riesgo de inundaciones, etc.).

- El Gobierno cuenta con un sistema de transparencia muy riguroso, en el cual se reportan los procesos de licitación desde su concepción hasta el termino del proyecto. Cualquier obra de construcción requiere de una Manifestación de Impacto Ambiental para su autorización, por lo que a través de este instrumento pueden darse a conocer los datos relativos a obras. La Ciudad planea reforzar este tipo de instrumentos para que la información sea más precisa y el seguimiento de los residuos este actualizado y disponible.
- La Ciudad de México esta trabajando con la Unión Europea y la Agencia de Cooperación Alemana (GIZ) para cuantificar el número de toneladas de residuos de construcción generadas, incluyendo aquellas que son depositadas en lugares clandestinos u otras áreas con valor de conservación natural. El proyecto cubrirá trabajos públicos y privados y se espera que este completado para el Q3 2021.

- La CDMX busca desarrollar un mapa de Economía Circular con la UNEP, desde la perspectiva de empleo con resultados esperados para el 2021.
- Existen grupos multidisciplinarios de trabajo formados por diferentes Secretarías de Gobierno que buscan dirigir su trabajo bajo esta visión.
- Actualmente, la CDMX cuenta con un Programa de Cero Residuos, siendo una política pública hacia una Economía Circular, con objetivos a 5 años donde esta establecido el reciclaje y reutilización de los residuos de la construcción y demolición.
- Se está trabajando para formar vínculos con las oficinas locales dedicadas (SEDUVI, INVI) a la edificación de vivienda social para que incluyan una perspectiva de sustentabilidad en sus criterios.

- Se trabaja en el establecimiento de incentivos para aquellos edificios que disminuyan su contribución mediante estrategias como azoteas blancas mediante el programa de acción climática.

Trabajar y abogar para que el gobierno regional, nacional y supranacional tome medidas sobre las fuentes fuera de los límites de nuestro control.

Informar públicamente cada año sobre los progresos que nuestras ciudades están haciendo hacia estos objetivos.

OBJETIVOS DEL ACELERADOR COLECTIVO

Reducir las emisiones incorporadas en al menos un 50% en todos los edificios nuevos y en las principales retrofits para 2030

Reducir las emisiones incorporadas en al menos un 50% de todos los proyectos de infraestructura para el 2030

- La CDMX continuará en coordinación con la Comisión Ambiental Metropolitana para incluir medidas ambientales en el Valle de México.
- En los próximos meses se publicará el programa PROAIRE que contiene medidas a nivel metropolitano.

- Se informa a través del Programa de Acción Climática y el Programa de Gestión Integral de Residuos, ambos de la Ciudad de México.

ACCIÓN/ENFOQUE PREVISTO PARA APOYAR LOS OBJETIVOS

- Revisión de los lineamientos actuales de los residuos de la construcción, donde se establece el uso de concreto reciclado en la construcción de nuevos edificios con la consulta pública planeada en el Q4 2020.
- Actualización de los lineamientos de compras del gobierno, enfocados en la adquisición sustentable (celdas solares, uso de material reciclado, instalaciones de bajo consumo de agua) a realizarse para el Q2 2021.
- La ciudad utiliza el proceso de Manifestación del Impacto Ambiental mediante en el cual se reportan los residuos generados (RCD) y donde han sido depositados los mismos mediante el plan de manejo. Se va a verificar lo descrito en el plan de manejo de la obra y una vez aprobado se pretende que una unidad de verificación vaya al edificio para verificar que efectivamente se está llevando a cabo conforme a la normatividad.
- Con el fin de reducir los residuos de construcción y demolición, la CDMX planea el reciclaje de 6000 toneladas de residuos por día. Para tal efecto, la CDMX ha emitido un llamado en febrero del 2020 para la instalación de diferentes plantas de residuos de construcción y demolición (RCD), siendo del dominio de la CDMX y financiadas por el sector privado.

- Revisión de los lineamientos actuales de los residuos de la construcción, donde se establece el uso de concreto reciclado en la construcción de nuevos edificios con la consulta pública planeada en el Q4 2020.
- Actualización de los lineamientos de compras del gobierno, enfocados en la adquisición sustentable (celdas solares, uso de material reciclado, instalaciones de bajo consumo de agua).
- La ciudad utiliza el proceso de Manifestación del Impacto Ambiental mediante en el cual se reportan los residuos generados (RCD) y donde han sido depositados los mismos. Con el fin de reducir los residuos de construcción y demolición, la CDMX planea el reciclaje de 6000 toneladas de residuos por día. Para tal efecto, la CDMX ha emitido un llamado en Febrero del 2020 para la instalación de diferentes plantas de residuos de construcción y demolición (RCD), siendo del dominio de la CDMX y financiadas por el sector privado.

Exigir la construcción de obras con cero emisiones en toda la ciudad para 2030, cuando la tecnología esté disponible.

- Actualización de los lineamientos de compras del gobierno enfocados a la adquisición sustentable tanto de bienes como de servicios contemplando que esté sea finalizado para el Q3 2021
- Revisión de Anexos técnicos de los servicios de obra pública contratados para el gobierno.
- Actualizar y agregar lineamientos para el Programa de Certificación de Edificaciones Sustentables para el Q4 2021, este programa incluye el uso de materiales de construcción reciclados para uso no estructural y el uso de pinturas con bajo contenido de COV's.

Ejemplo de recursos financieros disponibles para cumplir los compromisos (puede aplicarse a uno, algunos o a todos los compromisos de acelerador o acciones de apoyo anteriores).

- Inversión del sector privado para la instalación de plantas de reciclaje de Residuos de la Construcción y Demolición.





Milan

ACCELERATOR COMMITMENTS

Prioritise the better use, repurposing, and retrofit of existing building stock and infrastructure across the city to ensure their optimal use before new construction projects are considered.

Lead by example with municipal procurement by:

- **Requiring life cycle assessments (LCAs) and the diversion of construction and demolition waste from disposal for all municipal projects.**
- **Use municipal purchasing power to procure or demand zero emission construction machinery in municipal projects from 2025, where available.**
- **Reward resource efficient and circular design, use of low carbon materials, and low to zero waste construction sites for all new projects and major retrofit.**

INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

- The “[PGT Milano 2030](#)” (the City Masterplan) identifies abandoned and degraded buildings, disused for at least one year, which may cause danger to safety or public health or nuisance for urban decorum or affected by the presence of asbestos or other chemical health hazards. The identified buildings are given 18 months to be renovated and put back into use. Every year, a municipal ordinance updates the list of abandoned buildings, which are shown on an interactive web map.
- Milan has participated in three editions of the [C40 Reinventing Cities competition](#), with a few projects focused on making the most of existing buildings and assets in the city, such as the Scuderie De Montel site (first edition, under construction) and the Ex-Macello site with the project “Aria” (second edition, June 2021). This latter is located in the eastern part of the city and will transform a former abattoir into the first carbon-negative district in Milan. The project is aiming for a 52% reduction in embodied carbon compared to business as usual.

- The new version (June 2022) of the Italian [Green Procurement Policy](#) (Italian GPP) includes requirements for buildings, like the submission of an LCA report as a criterion awarding additional points in the tendering process.
- Italian GPP also establishes the phase out of older machinery and its replacement with low emission machinery where fossil fuels will be progressively banned. In Milan, two Zero Emission Areas in the city centre are planned by 2030, as an action of the [Air and Climate Plan](#).
- The Italian GPP for buildings also includes criteria and measures for resource efficiency and circular design in construction sites as the Minimum Environmental Criteria (CAM). As evidence of application from the design stage, a Report on CAM application is mandatory for all public buildings, with a specific focus on construction materials and their recycled content.

Demand transparency and accountability, starting with requiring LCAs in planning permissions and embedding them into planning policies, processes and building codes within a year of endorsing this accelerator. Require the public disclosure of this data to facilitate greater transparency and foster accountability to develop robust baselines, standards, certifications and policies.

Work with businesses, industry, public institutions, residents, workers, social partners and other organizations to establish a joint roadmap and set interim targets towards the collective 2030 goals adhering to circular economy principles within two years of endorsing this accelerator, and incorporate it into our Climate Action Plan. The roadmap will provide an implementation pathway to the Clean Construction Accelerator actions and to reaching its goals inclusively and equitably.

Approve at least one net zero emission (operational and embodied) flagship project by 2025.

- Since LCA is already available for buildings in the C40 Reinventing Cities projects as well as for those certified according to rating schemes (LEED, BREEAM, etc.), the Municipality will build on these existing practices to progressively introduce LCA requests in planning permissions and embed them into planning policies, processes and building codes, starting with a restricted application as a test field.
- The Municipality is working on a City Council Resolution (to be approved in 2024) which identifies the Minimum Environmental Criteria (CAM) – including LCA extending to private buildings, according to the [Air and Climate Plan](#). These criteria will be mandatory for some construction works; for the latter, a reduction of the construction cost contribution is granted.

- The Municipality is working closely with different stakeholders, sharing projects and initiatives. For example, the local Green Building Council (GBC Italia), which sets the national roadmap for whole life cycle decarbonisation of buildings by 2050 in the scope of the European project “Building Life”.
- The Municipality has collaborated with the “C’è Milano da fare” (“There’s Milan to do”) roundtable, including the main building trade associations and professional bodies, for co-designing environmental criteria consistent with the Air and Climate Plan and the revision of the City Masterplan, the new Building Regulations and the CAM resolution on the reduction of construction cost contribution when LCA is applied. Based on an action of the Air and Climate Plan, some specific real estate developers are involved in the implementation of a co-designed methodology for carbon neutral areas.

- In the framework of the Air and Climate Plan, two flagship projects will be realised by 2030, both of which have started the design phase and “agreed-upon” authorization process. They are “L’Innesto”, covering an area of 69,000 sqm and winner of Reinventing Cities I, and “Porta Romana”, a former railway area of 190,000 sqm, where the Olympic Village will be hosted.
- These two projects will test a methodology to reach zero carbon footprint for large scale sites, including a life cycle analysis for energy consumption and embodied carbon and a system of inseting and offsetting based on common KPIs mentioned in Act 3.1.1 of the Air and Climate Plan.
- A few test-projects on deep retrofit with industrialised solutions and (partially) bio-materials based technology ([Energiesprong](#)) have been planned involving Municipal Social Housing buildings, such as in via Giaggioli project.

Assess the impact our choice of materials and construction design will have on our cities’ overall resilience to climate impacts (i.e., increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).	• The assessment of materials and construction design (such as SRI or solar reflection index or permeability of materials) will be included in the monitoring process of the Air and Climate Plan; in fact, resilience to climate impacts is at the core of the ACP actions on climate mitigation and adaptation. • The City Masterplan establishes a climate impact reduction index based on the ratio between green surfaces (e.g. green roofs, green walls, permeable surfaces) and the total surface area of the intervention. The target is higher for areas with stronger climate change impacts. This index may be revised based on the outcomes of monitoring during the next revision of the City Masterplan.	• A few Minimum Environmental Criteria, adopted with a municipal resolution that makes them mandatory for building works, are related to the choice of construction materials and solutions reducing heat island effects, increasing reflectance (es. high SRI), raising permeability, etc.
Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.	• Milan is part of the EU Mission “100 Climate Neutral and Smart Cities by 2030” and the related network of 9 Italian member cities. An MOU was signed between the Italian cities network and Italian ministries to improve the legal framework and facilitate policy implementation towards the decarbonisation of cities.	• The goal is to enable building retrofit and energy efficiency and provide recommendations to the Integrated National Plan on Energy and Climate (delivered in June 2023 and now under review by the EU Commission) on climate mitigation and adaptation.
Publicly report every year on the progress our cities are making towards these goals.	• Every year, Milan reports on its environmental performance and decarbonisation process through many different reporting systems, such as CDP and C40 Accelerators reporting. Monitoring and reporting on the Air and Climate plan is scheduled every two years.	



ACCELERATOR COLLECTIVE GOALS	INTENDED ACTION/APPROACH TO SUPPORT THE GOALS	
Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030	• The municipality is working on a resolution (to be approved in 2024) to make Minimum Environmental Criteria (CAM) mandatory for private buildings. • Every year the municipal ordinance identifies and updates the list of abandoned, degraded and disused buildings to renovate and put them back into use. • The Municipality is working closely with the local Green Building Council (GBC Italia), to set the national roadmap for whole life cycle decarbonisation of buildings by 2050 in the scope of the European project “Building Life”.	• Based on an action of the Air and Climate Plan, the municipality is working with real estate developers to co-design methodology for carbon neutral areas. • Milan is part of the EU Mission “100 Climate Neutral and Smart Cities by 2030” to enable building retrofit and energy efficiency and provide recommendations to the Integrated National Plan on Energy and Climate (delivered in June 2023 and now under review by the EU Commission) on climate mitigation and adaptation.
Reduce embodied emissions by at least 50% of all infrastructure projects by 2030	• Currently not foreseen. It will be re-considered when GPP criteria on roads and infrastructures of the Italian Ministry of Environment will be published.	
Require zero emission construction sites city-wide by 2030, where technology is available	• The Italian GPP establishes the phase out of older machinery and its replacement with low emission machinery. In Milan, two Carbon Neutral Areas are planned by 2030 in the neighbourhoods of Porta Romana and Greco-Breda.	

- Example of financial resources available to deliver the commitments (can be applicable to one, some, or all of the accelerator commitments above).**
- Financial resources are assigned to the Air and Climate Plan. Additional resources will be raised through the EU Cities Mission and public-private partnerships or PPP. Innovative finance mechanisms are under study, such as the MTF2026 (Milano Transition Fund 2026).
 - Some net zero emission projects are financed by private investors, such as Redo and COIMA. These market operators develop decarbonisation plans for the assets under their management, aligning them with the requirements of the environmental objectives of the EU Taxonomy and obtaining certifications according to the main international assessment protocols (e.g. LEED / BREEAM). They also promote adaptation strategies in asset development and management activities, in a constant dialogue with the Municipality (Urban Regeneration dept.) all over the design and construction process. For example, Redo shared with the Municipality its research and testing of the materials passport, also relevant for future application to public buildings.
 - Reinventing Cities projects are also financed by private investors. They have contributed to greater awareness on the issues of emissions related to energy and materials.



New York City

ACCELERATOR COMMITMENTS

Prioritise the better use, repurposing, and retrofit of existing building stock and infrastructure across the city to ensure their optimal use before new construction projects are considered.

Lead by example with municipal procurement by:

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- **Use municipal purchasing power to procure or demand zero emission construction machinery in municipal projects from 2025, where available.**
- **Reward resource efficient and circular design, use of low carbon materials, and low to zero waste construction sites for all new projects and major retrofit.**

INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

- For City capital projects, NYC will consider the renovation of existing buildings as opposed to demolition and new construction. The City will use the data collected from [Executive Order 23](#) (detailed below) to inform a future citywide mitigation policy.
- In early 2023, a NYC-led task force released recommendations for changes to state law that would make an additional 136M sf of office space available for housing retrofits. In August 2023, the next steps in the “City of Yes” [plan](#) proposed to convert vacant offices to housing through city action. A January 2023 [study](#) through the Office of Adaptive Reuse was released as well, focusing on repurposing existing buildings for alternative uses.
- The City is examining emissions from its own construction projects. In September 2022, Mayor Adams signed EO 23, [Clean Construction Executive Order](#), to cut GHG emissions from City construction projects. Through municipal action, NYC will drive the market to increase prevalence of embodied carbon accounting and reduction strategies. This action requires LCAs for certain capital construction projects, Environmental Product Declarations for concrete and steel, low carbon concrete specifications, and the use of the best available construction equipment for municipal projects, with the hierarchy of electric equipment, biodiesel, and high efficiency diesel equipment.
- In addition, [Executive Order 53](#) sets the goal of 100% electric, carbon neutral fleet by 2040. This is intended to promote the use of zero emission construction

machinery where available and drive the market to increase the availability of this equipment. In pursuit of this, NYC DCAS (Department of Citywide Administrative Services) will issue, implement, and update a Clean Fleet Transition Plan, updated at least every 2 years. The plan will outline available electric, alternative fuel, and fuel-efficient equipment market status, its schedule for adoption, and requirements. Additionally, NYC is undertaking a Mass Timber Initiative in 2023, working with industry partners to gain experience with low-carbon construction materials and methods and grow the nascent mass timber market. Finally, as a part of NYC’s commitment to reduce the carbon footprint of the construction industry by 2033 ([PlaNYC’s Buildings goal \(2023\)](#)), the City will implement performance-based standards for low carbon materials and equipment by 2025.

Demand transparency and accountability, starting with requiring LCAs in planning permissions and embedding them into planning policies, processes and building codes within a year of endorsing this accelerator. Require the public disclosure of this data to facilitate greater transparency and foster accountability to develop robust baselines, standards, certifications and policies.

Work with businesses, industry, public institutions, residents, workers, social partners and other organizations to establish a joint roadmap and set interim targets towards the collective 2030 goals adhering to circular economy principles within two years of endorsing this accelerator, and incorporate it into our Climate Action Plan. The roadmap will provide an implementation pathway to the Clean Construction Accelerator actions and to reaching its goals inclusively and equitably.

Approve at least one net zero emission (operational and embodied) flagship project by 2025.

- [The NYC Clean Construction Executive Order 23](#) requires municipal projects to complete an LCA as a part of their mandatory LEED or equivalent certification. This requirement currently includes the emissions from municipal projects in Product (A1-A3), Construction (A4-A5), Use (B), and End of Life (C) stages. The LCA data should be made publicly available,

- Since 2016, the City Council has supported the [Made in NYC](#) initiative to facilitate the growth of local manufacturing and circular economy. NYC has the goal of sending zero waste to landfill by 2030. In order to achieve zero waste to landfill, the City aims to divert more waste to reuse while ensuring that as much as possible is processed within the city to capture more economic activity. When DSNY (New York Department of Sanitation) captures material headed for a landfill and turns it into local manufacturing or use it to generate energy, the city creates resilience, reduces truck traffic, and adds jobs. Finally, [PlaNYC’s Waste & Circular Economy goal \(2023\)](#) is to develop new markets and expand recycling and reuse. As such, the City committed to

- NYC has completed a net zero emissions school, [Kathleen Grimm School on Staten Island](#). The Clean Construction EO requirements will bring embodied carbon to the forefront of municipal design to advance the approval of another net zero emission (operational and embodied) flagship project.

with a standardized reporting mechanism, during the time of the Clean Construction Accelerator. The City will explore LCA requirements for private buildings over a certain size threshold during the implementation of the Clean Construction Accelerator. Ultimately, the City would like to use the transparency in City projects to create a baseline for future projects citywide.

- kickstarting circular systems for hard-to recycle waste streams by expanding the existing asphalt, wood, and construction and excavation soil reuse programs.
- The [ConstructNYC program](#) connects small-to-mid-sized Minority, Women, and otherwise Disadvantaged Business Enterprises with exclusive opportunities to work on NYCEDC projects through contracts of up to \$3 million. In 2023, NYC will re-launch an expanded ConstructNYC program to add new green skills trainings and prepare businesses to meet the moment, including instruction in building retrofits and practices that reduce embodied carbon, like deconstruction (as opposed to demolition), materials selection, and sourcing.

Assess the impact our choice of materials and construction design will have on our cities’ overall resilience to climate impacts (i.e., increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).

Low carbon materials and sustainable construction design are critical for NYC’s overall resilience to climate impacts. The City has already begun to act on the following initiatives:

- NYC Local Laws 92 and 94 of 2019 require a sustainable roofing zone on all available roof area for new construction buildings and roof replacements. This includes either solar PV or a green roof system, with low SRI materials on any remaining area. Green roofs lower the Urban Heat Island effect, increase permeable surface space, and have social co-benefits, and solar PV systems lower carbon emissions and increase energy independence.
- [The New York City Climate Resiliency Design Guidelines](#) include design strategies in a time of increasing climate risks. These design alterations are required for municipal construction, and available for consideration in private development. The Climate Resiliency Design Guidelines provide forward-looking design criteria to incorporate climate change data into the design of City facilities. These guidelines will be mandatory for all City projects by 2027. Currently, the City is exploring Leadership in Energy and Environmental Design (LEED) implementation for the Urban Heat Island (UHI) index and expanding the tree canopy

through Climate Resiliency Design Guidelines pilot sites.

- NYC has undertaken multiple strategies to reduce the Urban Heat Island effect, including installing 1 million square feet of cool roofs annually through the Cool Roofs program and achieving a 30% citywide tree canopy cover (22% in 2023).
- The City will engage with stakeholders and drive research on the use of low carbon materials and methods. For example, ground glass pozzolan, which is made from recycled post-consumer glass, can replace up to 50% of cement in concrete, dramatically reducing embodied carbon emissions. Partnering with NYCEDC and the Battery Park Coastal Resilience projects, the City will study ground glass pozzolan in marine applications to enable industry professionals to gain experience with these materials and potentially incorporate them into large coastal infrastructure projects
- A few Minimum Environmental Criteria, adopted with a municipal resolution that makes them mandatory for building works, are related to the choice of construction materials and solutions reducing heat island effects, increasing reflectance (es. high SRI), raising permeability, etc.

Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.

- As a member of C40 Cities, NYC will continue to collaborate with the organisation and other cities to meet the goals stated above. NYC collaborates with other cities across the county and the world that are embarking on clean construction initiatives to share ideas, lessons learned, etc. MOCEJ (NYC Mayor’s Office of Climate and Environmental Justice) regularly works with the New York State

government to take action to reduce emissions sources outside of the NYC municipal purview.

- The City is in contact with the federal government, which has its own “Buy Clean” program. For example, the City’s partnership with Federal and State agencies allows the City to play a role in driving the uptake of electric construction machinery by signalling demand.

Publicly report every year on the progress our cities are making towards these goals.

- NYC will report progress on the above action items to C40 annually.

ACCELERATOR COLLECTIVE GOALS

Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030

INTENDED ACTION/APPROACH TO SUPPORT THE GOALS

- [Executive Order 23](#) will cut GHG emissions from City construction projects and ensure any Federally funded new construction will use sustainable materials, equipment, and practices.
- MOCEJ is undertaking a Mass Timber Accelerator in 2023, working with industry partners to gain experience with low-carbon construction materials and methods and support the nascent mass timber market.
- In the Buildings section of the PlaNYC released in April 2023, NYC commits to reduce embodied carbon emissions for new buildings, infrastructure, and major retrofits by 50% by 2033. This ambitious target will be realized through the use of a reporting framework, low-embodied carbon materials, green building practices, and incorporation of innovative material and technological solutions as they become readily available.

Reduce embodied emissions by at least 50% of all infrastructure projects by 2030

- Executive Order 23 will cut GHG emissions from City construction projects and ensure any Federally funded new construction will use sustainable materials, equipment, and practices.
- Exploring the applications of ground glass pozzolan in infrastructure projects.

Require zero emission construction sites city-wide by 2030, where technology is available

- Executive Order 53 sets the goal of 100% electric, carbon neutral fleet by 2040. This is intended to promote the use of zero emission construction machinery as well.
- The City is exploring methods to provide power to construction sites for electric powered construction equipment.

Example of financial resources available to deliver the commitments (can be applicable to one, some, or all of the accelerator commitments above).

- Many of the initial strategies detailed are focused on municipal action. NYC capital projects will absorb the costs of these actions into their project budgets. Additionally, research indicates that many clean construction strategies may not be associated with significant incremental costs. There is a possibility to leverage significant federal funding available through the IRA for clean energy upgrades and from the NYS BOND Act for resiliency projects.





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INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

- In June 2020, the Agency for Planning and Building Services launched new guidance and climate criteria to be applied for all new development, building and infrastructure projects done by the City of Oslo.

- The climate guidance from the Agency for Planning and Building Services includes specific criteria to assess materials choice and construction-related emissions.
- On materials choice, it is required to assess the potential to reduce climate and environmental impacts through choosing more sustainable materials, such as wood, biomass-based materials, low carbon concrete, recycled metals etc. The municipal building agencies require at least two EPDs for each of the ten largest categories of building materials as

- Project developers are required to consider using existing building stock in their projects, including combinations of new and existing buildings. Oslo has in 2020 developed and approved guidelines for more climate friendly management of excavated building masses. Suppliers will also be credited for climate friendly/reduced transport of materials, personnel and waste.

well as emissions accounting for different phases of the project.

- There is also a requirement to consider indirect emissions as a result of the production and transport of materials.
- Oslo rewards using low-emission and zero-emission solutions in its public procurement.

Demand transparency and accountability, starting with requiring LCAs in planning permissions and embedding them into planning policies, processes and building codes within a year of endorsing this accelerator or in the next revision of planning policies and codes. Require the public disclosure of this data to facilitate greater transparency and foster accountability to develop robust baselines, standards, certifications and policies.

Work with businesses, industry, public institutions, residents, workers, social partners and other organizations to establish a joint roadmap and set interim targets towards the collective 2030 goals adhering to circular economy principles within two years of endorsing this accelerator, and incorporate it into our Climate Action Plan. The roadmap will provide an implementation pathway to the Clean Construction Accelerator actions and to reaching its goals inclusively and equitably.

Approve at least one net zero emission (operational and embodied) flagship project by 2025.

Assess the impact our choice of materials and construction design will have on our cities' overall resilience to climate impacts (i.e. increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).

- The new climate guidance from the Agency for Planning and Building Services will contribute to drive LCA practices in the construction and building industry.
- All information about public procurement is publicly available.

- Oslo has started to develop a strategy for circular economy, which is expected to be finalised by mid-2021.
- Oslo's cooperation with the business community "Business for climate" promotes climate solutions for the private sector. New members in this organization must commit to reducing their climate footprint. In 2020, the network has had a specific work stream on construction and buildings, with a particular focus

- Oslo opened a zero-emission construction site in 2019, for infrastructure development in the city centre. All construction machinery at this site is [electric](#).
- Oslo is also using [FutureBuilt](#) to pilot new technical solutions for low emission buildings.

- The climate guidance from the Agency for Planning and Building Services includes a requirement to consider if the materials selected for the construction will be resilient to future climate change, for instance in terms of increased precipitation and temperature.
- In 2014, Oslo adopted a strategy for managing surface water runoff, for the period 2013-2030 - [Strategi for overvannshåndtering](#)

on reuse of materials. This work stream is likely carried forward in 2021.

- An updated action plan was established in 2019 - [Handlingsplan for overvannshåndtering](#). The action plan includes expanding the city's green areas, build rain beds and open waterways, as measures to reduce the risk of flooding.

Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.

- Oslo is working with other cities in Norway as well as regionally, to stimulate a larger market for clean construction. The Big Buyers Initiative plays a key role.
- At the national level, Oslo is seeking broader legislative mandates to set stricter requirements in our public procurement.
- Internationally, the city of Oslo has initiated the C40 Clean Construction initiative, launched in 2019. The initiative is very important in driving guidance, sharing experiences and mobilising influence on markets.

Publicly report every year on the progress our cities are making towards these goals.

- Oslo uses a climate budget approach to monitor progress towards our climate targets. The climate budget is presented annually as part of the overall budget, and includes progress assessment as well as new measures to be implemented.

ACCELERATOR COLLECTIVE GOALS

Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030

- Oslo’s overall climate target is to reduce greenhouse gas emissions by 95% by 2030, compared to 2009 levels.
- Oslo has conducted a baseline study on embodied carbon in buildings. Using the baseline study, the city is in the process of establishing a target on embodied carbon (by end 2021 at the latest) consistent with the accelerator commitment.
- In parallel, Oslo is exploring policy measures to meet such a target. Firstly, for municipal projects by setting maximum emission limits on embodied carbon and/or using tender competition criteria to reward the use of low-emission materials. These measures need to be implemented following the establishment of a target – starting in 2022. Secondly, how to use planning permits and processes to set requirements for the rest of the market for both Life Cycle Assessment (LCA) accounting in the 2021/22 timeframe, and also for specific materials emission requirements in the 2022/23 timeframe.
- Oslo is also using FutureBuilt to pilot new technical solutions for low emission buildings.

Reduce embodied emissions by at least 50% of all infrastructure projects by 2030

- The baseline study on embodied carbon also looked at infrastructure, but there are much less LCA data on infrastructure projects and more data collection is required.
- For infrastructure, the municipality itself is in charge of almost all projects. Oslo is setting low emission requirements in its procurement processes. The first step, in the 2021-2022 timeframe, will be requirements to conduct LCA accounting for all projects,

followed by specific material emission requirements and/or tender competition criteria to incentivize low-emission materials.

- Oslo has several large new infrastructure projects towards 2030, including a new metro line and a new water supply pipeline. Both these two projects have a strong focus on reducing embodied carbon (<https://www.klimaoslo.no/2019/07/05/tiltak-for-utslippsfri-anleggsplass/>).

Require zero emission construction sites city-wide by 2030, where technology is available

- Oslo’s Climate Strategy towards 2030 states that municipal construction sites shall be zero emission by 2025 and all construction sites by 2030.
- To follow up the targets in the climate strategy, Oslo in 2019 approved a set of common procurement criteria for all municipal construction sites. These criteria require fossil-free (bio-fuels) construction as a minimum and award zero-emission technologies in all tender competitions. From 1 January 2025, all municipal construction sites must be emission free and transport to and from the sites must be emission free or biogas-fueled.
- Oslo is going to set a requirement for fossil free construction for many private sector projects, through its planning permits. The city is preparing to require zero emission construction in all planning permits in the future. This was approved in 2020 and fossil free construction will be required in all new planning permits.
- In the 2020 financial budget, 40 million NOK is set aside to support the procurement of zero emission machinery in municipal agencies.



San Francisco

ACCELERATOR COMMITMENTS

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INTENDED ACTION/APPROACH TO MEET THE COMMITMENTS

- San Francisco's [Economic Recovery Task Force Report](#), published in October 2020, includes a recommendation for adaptive reuse: 1.5 Promote reactivation and consider adaptive reuse of buildings for a vibrant San Francisco, complementing CAP Supporting Action 2. We have yet to develop specific approaches for implementation.

- The Municipal Green Building Task Force has approved a recommended draft update to Environment Code Chapter 7 that includes embodied carbon calculation and reduction requirements (including LCAs) for municipal construction projects. It also includes a per-square-foot cap on waste generated for Tenant Improvement projects and specific materials that must be source-separated during construction. Goal for adoption is early 2022. (CAP Supporting Action 1)
- San Francisco created a robust citywide policy for C&D waste diversion in 2006, banning the direct disposal of any such material to landfill. In 2018, we updated the regulation to mandate

third party verification that facilities receiving C&D materials are maximizing recovery. This regulation has been recognized as an alternate compliance path for the LEED credit "C&D Waste Management" for Certified Commingled Recycling Facilities – the first program (and municipality) to do so. Another update to this ordinance was passed in September that will tighten regulations by improving the tracking of material haulers. The update will also encourage increased source separation of building materials. Our goal is to reduce generation by 15% and disposal to landfill by 50% by 2030 compared to 2015, per the Advancing Toward Zero Waste Accelerator.

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Approve at least one net zero emission (operational and embodied) flagship project by 2025.

- Once the embodied carbon requirements have been tested on municipal projects and refined as necessary, these will be extended citywide. (CAP Supporting Action 1)
- We have introduced a concept of a Professional Development program through the Office of Economic and Workforce Development for BIPOC to receive training on Revit and LCA tools and placement in architecture and engineering firms throughout the city.

We have a holistic view of the building materials reuse ecosystem and are starting to pursue several collaborations (CAP Supporting Actions 4-7). For example:

- Publishing by the end of 2021 a 'Surplus Construction Products Reduction and Redistribution Study', with the participation of 12 General Contractors and Developers and their subcontractors. Phase One is an opportunity to learn more about typical types and quantities of materials purchased but not installed. We hope to include a Phase Two that includes onsite inventory and donation.
- Partnered with the "All for Reuse Initiative" to create an alliance of large portfolio building owners/developers/renters to commit to rescuing and reusing salvaged/surplus products in their tenant improvement projects.

- San Francisco's participation in the inaugural Reinventing Cities competition led to the commitment by a private development to strive for net zero emissions: The Kelsey Civic Center.

- In 2020, San Francisco shifted away from paper tracking of construction Material Recovery and Reduction Plans to an online platform, "Green Halo", which allows for more precise and on-demand reporting of material types and quantities diverted from landfills as well as their destinations.
- We are working toward a Deconstruction requirement that also mandates source separation of buildings materials that can be better candidates for regional reuse if they are collected independent from mixed debris (e.g., wood, wallboard). (CAP Supporting Action 4).

- Received grant funding from CNCA to build an online exchange infrastructure to support the regional use of salvaged/surplus products. Observing cities outside the Bay Area include Chicago/ Cook County, IL; Atlanta, GA; Boulder, CO; and San Diego, CA. Additional cities involved in Oregon and Washington.
- Pursuing funding and coordinating among several San Francisco agencies to develop a Building Resources Innovation Center to improve material access and exchange for contractors, small businesses, nonprofits, entrepreneurs, and makers, as well as partnerships with manufacturers to facilitate extended producer responsibility/takeback programs.

- We are currently exploring several options in the Recreation and Parks Department's portfolio for a flagship net zero emissions municipal project.

Assess the impact our choice of materials and construction design will have on our cities' overall resilience to climate impacts (i.e. increasing urban heat island, impermeable surface increasing the risk of flooding, etc.).

- This is a topic that we are just starting to explore, particularly as it relates to infrastructure (e.g., streets and sidewalks).

Work with and advocate for regional, national and supranational government to take action on sources outside the boundaries of our control.

Related to deconstruction and material reuse:

- San Francisco has staff that are Steering Committee members of the Bay Area Deconstruction Work Group, working closely to promote shared solutions for deconstruction and material reuse with staff at other regional cities, as well as representatives from the Bay Area Air Quality Management District and US EPA Region 9.

- San Francisco staff has been appointed to the LEED Steering Committee, helping to inform the future requirements of the green building standard that has been integrated into codes throughout the US and internationally.

Publicly report every year on the progress our cities are making towards these goals.

- One implementation proposal for CAP Supporting Action 1 is to require the achievement of two LEED credits as part of a first step for policy for both municipal and private-sector buildings. The credit “Building life-cycle impact reduction” (v4.0) awards points to projects for completing an LCA and reducing embodied carbon 10% compared to a baseline building. (The new version of the credit

under v4.1 has 5, 10, and 20% thresholds.) There is also a credit “Building Product Disclosure and Optimization - Environmental Product Declarations”, which requires EPDs to be submitted for twenty different products. Using these LEED credits to document compliance would offer a standardized process for all construction projects that would ease the potential for public reporting on regular intervals.

ACCELERATOR COLLECTIVE GOALS

Reduce embodied emissions by at least 50% for all new buildings and major retrofits by 2030

INTENDED ACTION/APPROACH TO SUPPORT THE GOALS

San Francisco is in the process of updating our Climate Action Plan (CAP), with a goal for completion in December 2021. The following draft strategy for Responsible Production and Consumption offers a parallel track to address the Accelerator Commitment.

Strategy: Achieve total carbon balance across the buildings and infrastructure sectors.

- **Supporting Action 1:** Between 2022-2025, phase in policies to reduce embodied carbon more than 10% per project by addressing at least three product categories or building assembly types.

- **Supporting Action 2:** By 2023, develop a suite of incentives, policies, and/or guidelines for adaptive reuse of existing buildings, as well as the design and procurement of low carbon structural materials for new construction.

- **Supporting Action 3:** By 2025, establish a maximum allowance for embodied carbon of buildings, to be adjusted at regular intervals.

- **Supporting Action 4:** By 2025, amend existing policies to require deconstruction of buildings and increase the source separation of specific materials.

- **Supporting Action 5:** By 2025, engage with designers, landlords, and lessees to develop guidelines for tenant improvement and space turnover projects that reduce excess material purchases and support reuse distribution channels.

- **Supporting Action 6:** By 2025, create a policy framework to expand and cultivate regional building material reuse markets that support workforce development, small business enterprises, and entrepreneurial innovation.

- **Supporting Action 7:** By 2030, advance best practices for “Design for Disassembly” and “Buildings As Material Banks” by creating implementation resources in partnership with global cities, and pilot at least one municipal project to maximize the value of carbon already invested in buildings.

Reduce embodied emissions by at least 50% of all infrastructure projects by 2030

- There are no currently defined approaches for reducing embodied carbon exclusive to infrastructure projects, which may be influenced by Supporting Actions 1-3 (above), at a minimum.

Require zero emission construction sites city-wide by 2030, where technology is available

The following draft CAP supporting action for Transportation and Land Use advances low- and no-emission construction machinery.

Strategy: Accelerate the adoption of zero-emissions vehicles (ZEV's) and other electric mobility options.

- **Supporting Action:** By 2030, reduce greenhouse gas emissions from construction equipment at least 50% from 2020 levels by incentivizing the use of renewable diesel and emerging zero-emission technologies.

Example of financial resources available to deliver the commitments (can be applicable to one, some, or all of the accelerator commitments above).

- Most of the actions and possible approaches outlined above require an expansion of existing programs or the creation of new programs and infrastructure. As such, they will require additional staff time/FTE and funding.
- While we have been successful in receiving one grant so far, and are pursuing financial support via additional grants and partnerships with like-minded organizations to augment our ‘in-house’ capabilities, we will not be able to implement the scale of change desired in the timeframe allotted without new streams of capital, some of which will be necessary seed funding and others that will be needed mid-and long-term.



