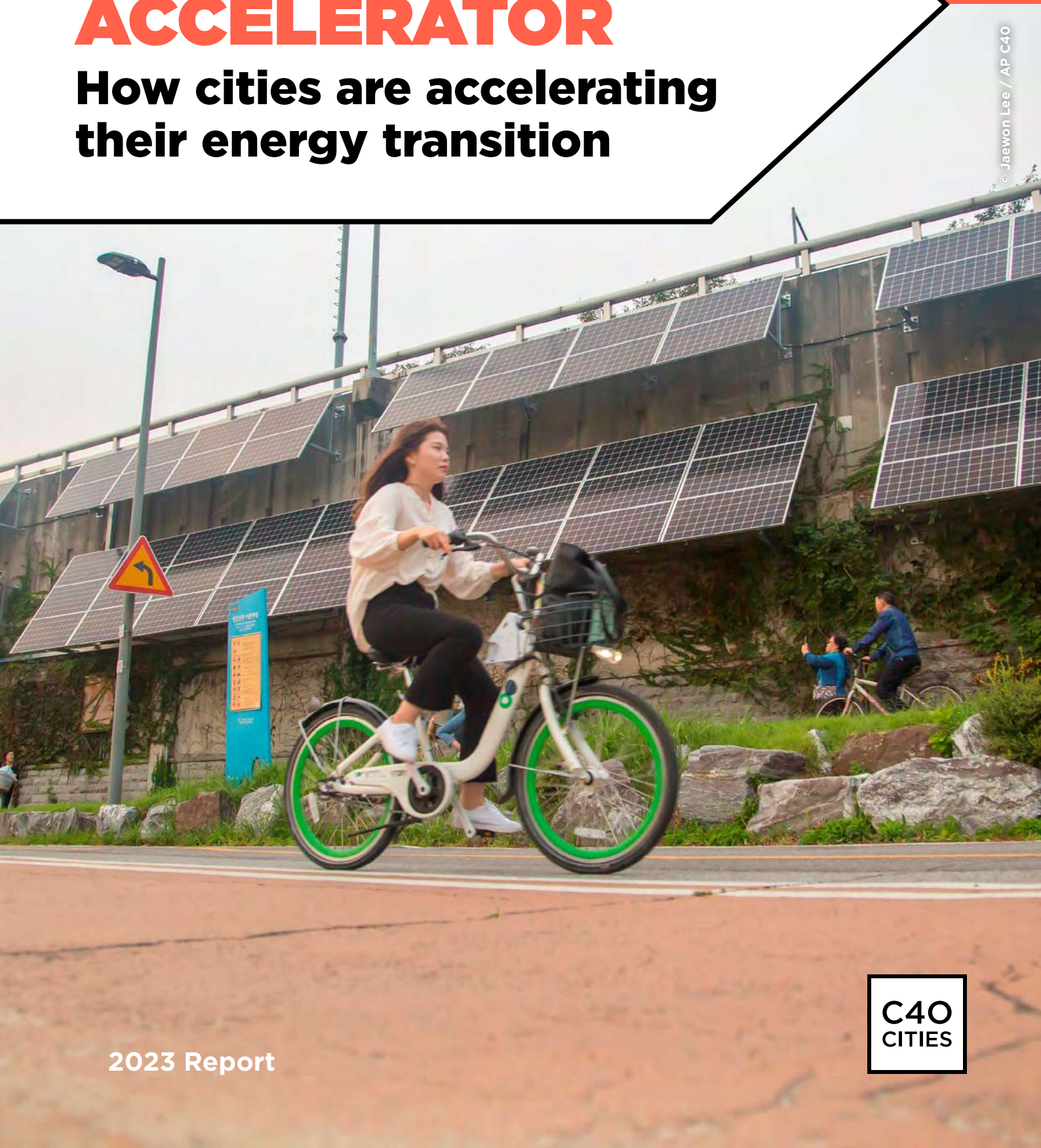
C40 RENEWABLE ENERGY ACCELERATOR

How cities are accelerating their energy transition



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2023 Report

C40 CITIES

ACKNOWLEDGEMENTS

This report was created in collaboration with officials in the C40 Renewable Energy Accelerator signatory cities, C40 funders, and C40 staff. Thank you to everyone who has contributed to the report and the actions that are driving forward immediate and inclusive climate solutions to achieve the commitments of the C40 Renewable Energy Accelerator. For further information on the C40 Renewable Energy Accelerator, please check out the accelerator webpage.

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FOREWORD

The era of fossil fuels is coming to an end. Meeting the objectives of the Paris Agreement requires a transformation of the way energy is produced and used, especially in our cities – where more than two thirds of the world's energy is consumed. Expensive and polluting fossil fuels must be urgently phased out and replaced through a just transition by a system based on cheaper, more decentralised and more democratised renewable energy sources to power our economy and heat and cool our buildings. This will not only enable the world to avoid climate breakdown, but also to clean up the air, create more resilient communities and provide energy access and thermal comfort to all, even the most marginalised.

Home to more than half of the global population, cities are actively curbing fossil fuel dependency and spearheading equitable transitions as mayors seek to halve fossil fuel demand in cities and drive the creation of 50 million good, green jobs by 2030. Specifically, 15 pioneer C40 cities have signed up to the C40 Renewable Energy Accelerator, which commits them to take all possible steps to accelerate the full decarbonisation of electricity, heating, cooling and cooking and the phasing out of fossil fuels.

I am delighted to share in this report on the progress made by these 15 cities, and the leading actions they are taking to accelerate the energy transition. I am particularly inspired to see that actions to accelerate renewables deployment are increasingly often complemented by direct interventions to phase out fossil fuels, including by banning fossil gas use in new buildings. Cities are finding new tools and levers to increase the impact of their actions – and raise their voice to support more ambitious policies and regulatory frameworks where they can't directly act on their own.

Cities hold the key to the transition towards decentralised, decarbonised and digitalised energy systems that leave no one behind. These cities should inspire others – businesses, utilities, and national governments – to join them in moving away from fossil fuels and channel investments into renewables to create a sustainable future benefiting all communities. In the meantime, C40 will continue to support mayors to deliver on their ambition and show the world what the clean energy future holds.

I offer my congratulations to the signatory cities of the C40 Renewable Energy Accelerator for their commitment and the ambitious actions they have taken to drive the renewable energy transition and end our global reliance on fossil fuels.

Mark Watts
Executive Director of C40

INTRODUCTION

The energy used to power the world and heat and cool buildings remains mostly generated from fossil fuels, despite international climate commitments and staggering cost reductions in renewable energy technologies. Energy related greenhouse gas (GHG) emissions reached a record high in 2022 according to the International Energy Agency (IEA), even with the widespread knowledge that keeping temperature increase below 1.5ºC requires a rapid phase out of polluting and expensive fossil fuels. The world's failure to deliver a just energy transition results in a dual climate and air pollution crisis, while keeping approximately 800 million people from accessing electricity and preventing residents facing socioeconomic hardship from heating their homes.

Signatories to the C40 Renewable Energy Accelerator recognise the need to accelerate the move away from fossil fuels and towards renewable energy sources across urban areas. Representing over two thirds of the world's energy consumption, cities hold the key to the transition towards decentralised, decarbonised and digitalised energy systems, to ultimately reduce air pollution, improve energy access and public health, create more resilient communities and create local, good, green jobs.

The C40 Renewable Energy Accelerator: Powering Green and Just Cities was launched in 2021 with 15 signatory cities which have over 70 million residents across six continents, in both the Global South and Global North. Their particular context – regulatory environment, level of control over the grid, climatic conditions and levels of economic activity – mean that they face different challenges and priorities. But all signatory cities have committed to take every possible step to accelerate the full decarbonisation of electricity, heating, cooling and cooking while phasing out fossil fuels.

To meet this commitment, cities will:

- Lead by example, either by switching municipal electricity consumption to 100% renewable energy by 2025 or deploying renewable energy systems on all feasible municipal assets by 2030.
- Adopt one of the following pathways in line with their objectives, priorities and context:

PATHWAYS

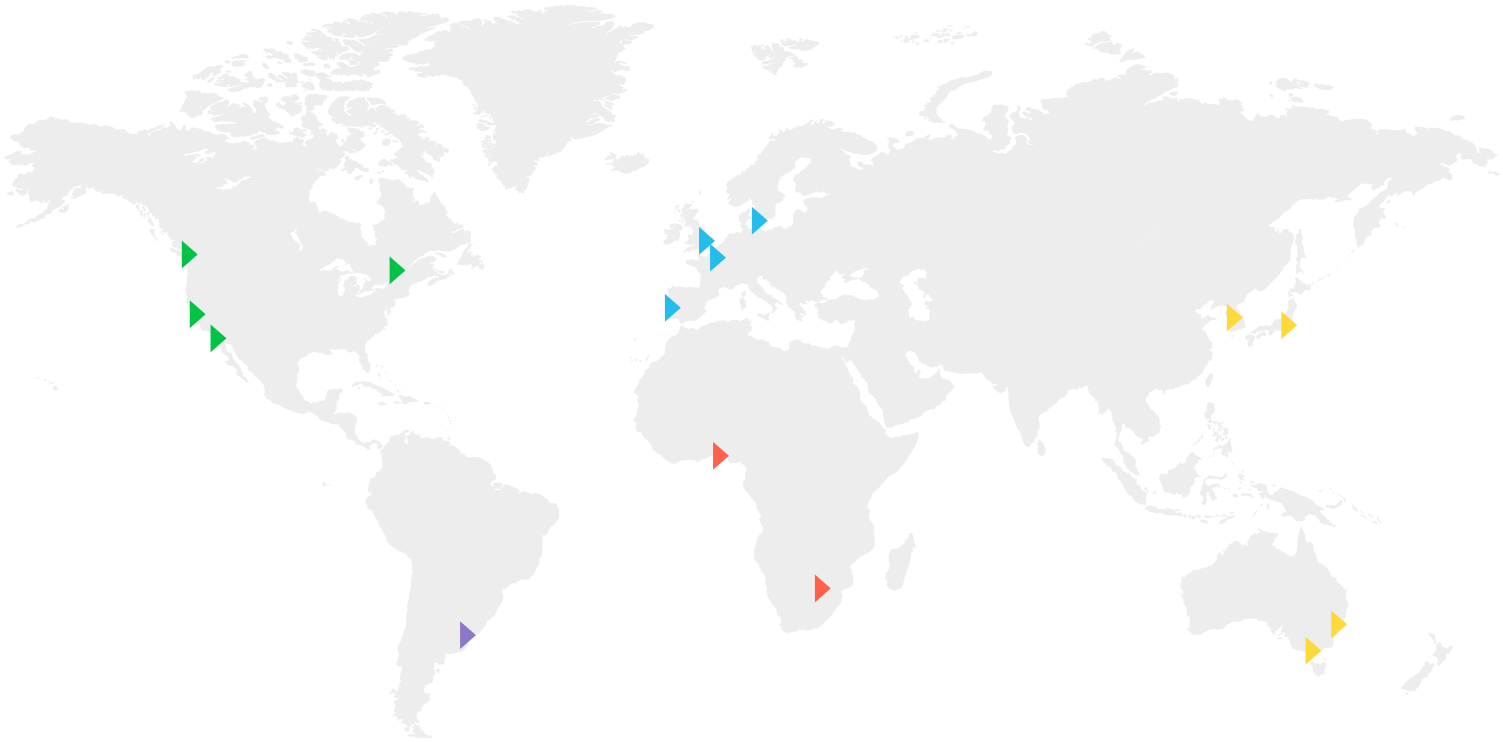
Accelerating renewable energy transition
Use 100% renewable electricity citywide by 2035 and fully decarbonised energy to cook and heat and cool buildings within the city no later than 2050.

Enabling energy access with renewables
Achieve universal access to reliable, sustainable and affordable electricity and clean cooking fuels and technologies by 2030 and use 100% renewable electricity citywide by 2050.

Maximising local renewable energy
Deploy clean energy systems for electricity, heating, cooling and cooking to achieve 50% of the assessed feasible potential within the city by 2030 and 100% by 2050.

This report highlights the progress by signatory cities since signing up to the accelerator in 2021.

SIGNATORIES



- Buenos Aires
- Copenhagen
- Lagos
- Lisbon
- London
- Los Angeles
- Melbourne
- Montréal
- Paris
- San Francisco
- Seoul
- Sydney
- Tokyo
- Tshwane
- Vancouver

PROGRESS OVERVIEW

This report provides an overview of the progress made by the 15 signatory cities to the C40 Renewable Energy Accelerator against the plans and actions they committed to, as detailed in the Renewable Energy Accelerator: Summary Actions report.

Despite the challenges for the energy sector caused by the war in Ukraine and the rebound from the COVID-19 pandemic, cities have once again shown that they are doers, not delayers. This report demonstrates that cities already lead the energy transition, deploying a wide range of actions and tools and using all levers at their disposal to impact the make up of global energy systems.

First, signatory cities have leveraged their own assets and consumption, over which they have full control, using approaches that help to catalyse local renewable energy markets. All signatories are reporting that they progress at a good pace on the deployment of small scale renewable energy systems such as solar photovoltaics (PVs) on their assets. Paris has for instance worked to deploy 6,000 square metres of solar PVs on its public roofs in 2023, after installing 120 kilowatts peak (kWp) of solar PV in 2022. Over half of the cities are relying on market-based mechanisms such as Power Purchase Agreements (PPAs) or green tariffs to shift their electricity consumption to renewable sources such as in London, where Transport for London (TfL) has launched a PPA tender in 2023 to run parts of its operations on renewable power from 2025. These mechanisms support new clean energy projects by providing them with certainty over future revenues. Cities have also led by example by bringing emerging technologies to market maturity through pilots and demonstration projects: Melbourne has launched Power Melbourne Battery Collaboration to support the deployment of battery storage solutions, while Lagos has progressed towards a 5 MW floating solar project.

Beyond their own operations, cities have deployed impactful actions to accelerate the adoption of renewable solutions by residents and businesses. They have used their regulatory powers over buildings, with Tokyo mandating the installation of renewable energy equipment in some large new buildings and Los Angeles requiring new buildings to shift away from fossil fuels and to be fully electric. Many cities, such as Lisbon, to overcome information and data gaps experienced consumers face by publishing solar maps or implementing group buying schemes. A myriad of actions aims to reduce the financial barriers slowing down the deployment of renewable energy system – including subsidies, innovative business models or even direct investment from the cities such as in Seoul, where the city is allocating KRW 166 million (US$ 12.2 million) to solar PV and geothermal power generation in 2023/2024.

Finally, signatory cities have used their influence to champion a clean energy transition beyond their own boundaries. The City of Sydney has resolved to place restrictions on advertising for fossil fuels for any council controlled signage or property, while also advocating for a state-wide ban on gas connections in new buildings.

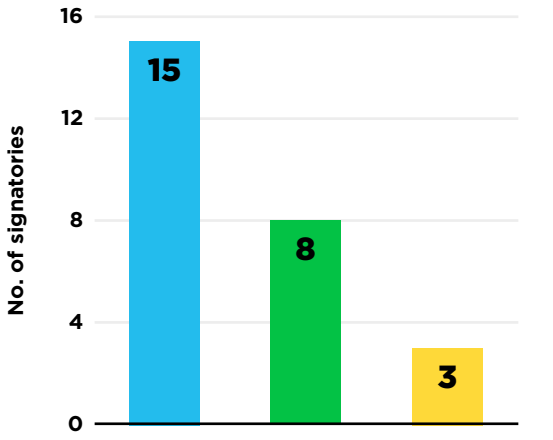
C40 cities have also demonstrated that the clean energy transition can be designed to benefit all, including the most marginalised. In San Francisco, the Climate Equity Hub advances racial equity and decarbonisation by developing a one-stop shop for the electrification of buildings that will empower residents, create jobs and consider low-income workers.

Still, cities face a myriad of challenges in the efforts to increase renewable energy adoption, including lack of sufficient funding sources, regulatory and institutional barriers and a lack of technical expertise. By working together and collaborating with all relevant stakeholders, and with the support of national governments, there is no doubt that cities will keep leading the energy transition to build healthier communities, deliver good, green jobs and to protect their most marginalised residents from the impacts of the climate crisis.

DATA ANALYSIS

As part of the bi-annual reporting process, cities submit detailed information about the actions they are implementing to deliver on the accelerator commitments. This section highlights some of the key insights drawn from this data.

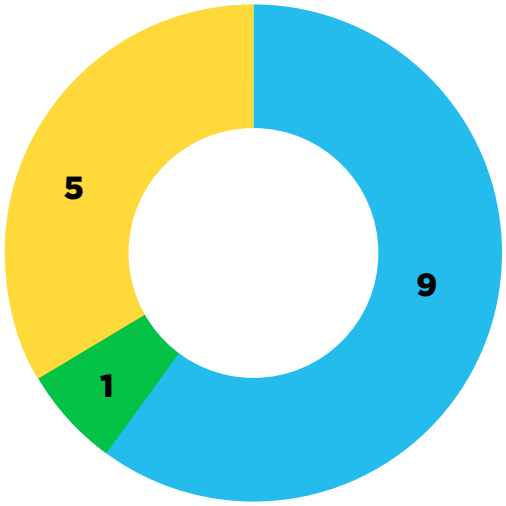
Approaches to municipal renewable energy sourcing



- Cities deploying renewable energy systems on municipal assets
- Cities sourcing renewables through market-based mechanisms (e.g. PPAs, green tariffs)
- Cities implementing other approaches (e.g. municipal utility programmes)

Figure 1 shows the strategies that cities are implementing to shift their own electricity use to renewable sources. All signatories have started to deploy renewable energy systems (mostly solar photovoltaics (PVs)) on an increasing number of their own assets – an action that can be implemented in virtually all regulatory environments. Eight cities are also relying on market-based mechanisms, such as PPAs or green tariffs, to procure electricity from renewable sources to power their own operations. Three cities are also implementing other solutions such as relying on municipal energy utilities to decarbonise their own consumption.

Signatories per pathway



- Pathway 1: Accelerating renewable energy transition
- Pathway 2: Enabling energy access with renewables
- Pathway 3: Maximising local renewable energy

Figure 2 shows the distribution of the signatory cities across the different pathways offered by the accelerator. Nine cities chose the *Accelerating the renewable energy transition pathway*: Lagos, Copenhagen, Melbourne, Sydney, Los Angeles, London, San Francisco, Montréal and Vancouver. Tshwane is the only signatory that committed to the *Enabling energy access with renewables pathway* and Lisbon, Paris, Seoul, Tokyo and Buenos Aires committed to *Maximising local renewable energy pathway*.

Types of actions implemented by signatory cities

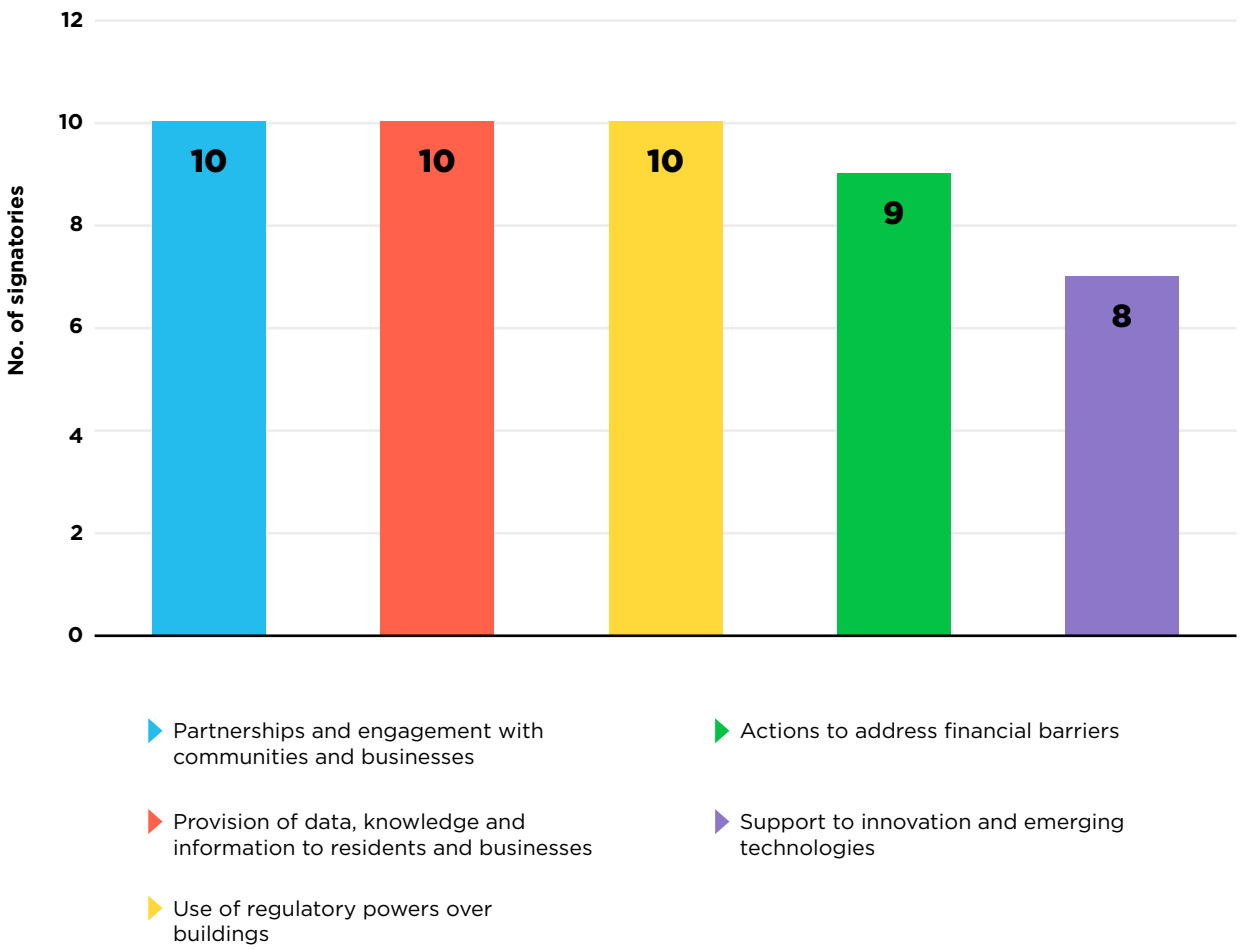


Figure 3 demonstrates the diversity and wealth of actions and policies implemented by signatory cities to meet their citywide commitments. Ten cities are engaging and partnering with residents and businesses to encourage citywide adoption of renewables – including Paris, which is working with energy community EnerCit'IF to deploy solar systems on municipal buildings. Providing data, knowledge and information about local renewable potential, costs and installers is also a key strategy deployed by cities to support residents and businesses. The City of Sydney ran a communications campaign encouraging residents to shift to a 100% renewable energy contract, and Lisbon has published a publicly available solar opportunity map. Cities also strongly rely on their regulatory powers to encourage or mandate the installation of onsite renewable energy systems or the phase out of fossil fuel systems. The majority of cities have also worked to overcome the financial challenges faced by residents and businesses looking to install clean energy systems by offering subsidies or grants, as done in Tokyo, or by partnering with finance providers. Finally, cities also support innovations and emerging technologies through pilots or demonstration projects.

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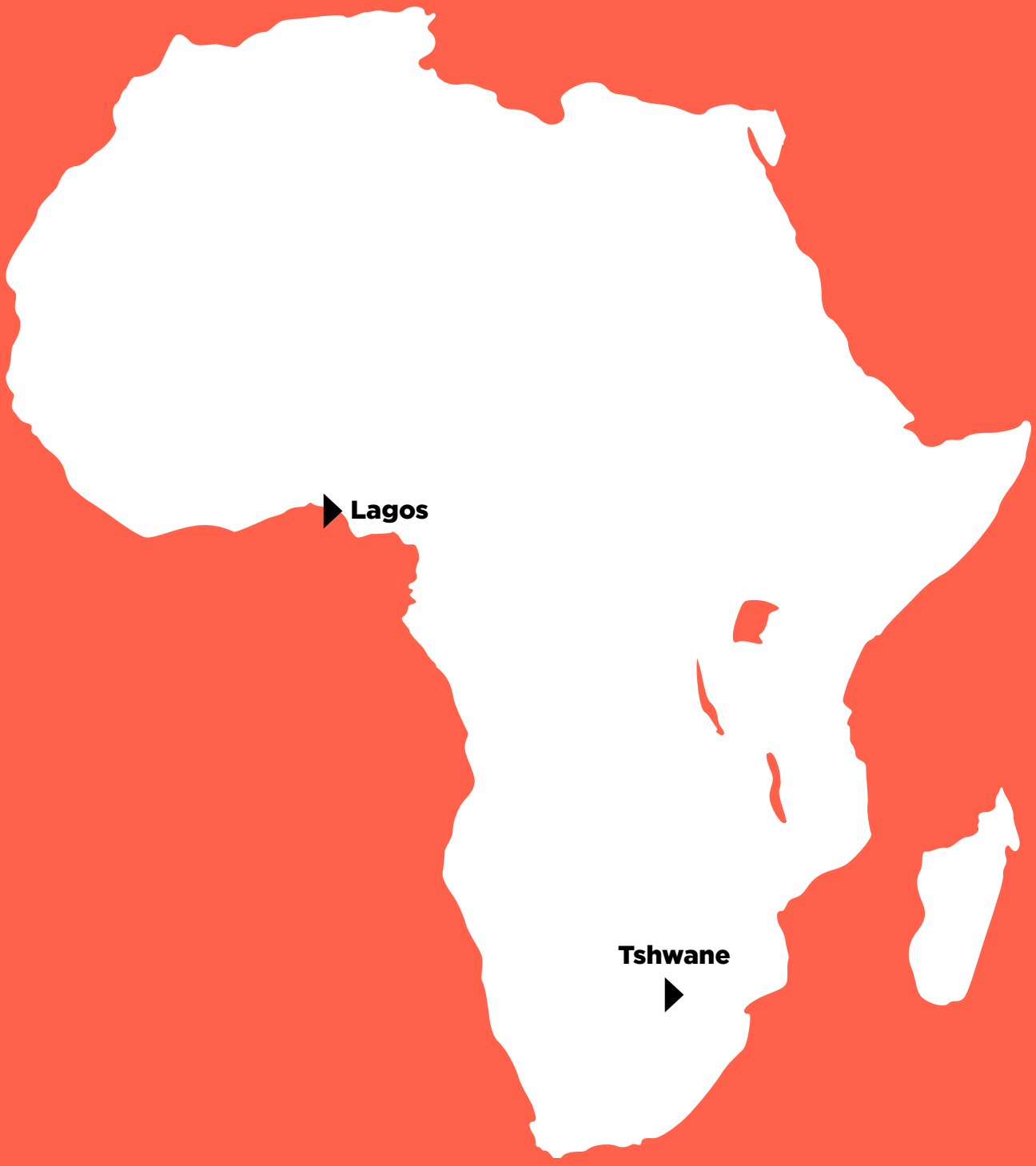
CITY PROGRESS SUMMARIES

The following section of this report contains progress and action summaries that were self-reported by each of the C40 Renewable Energy Accelerator signatory cities. The city summaries showcase past, present, and future actions the city is undertaking to achieve the implementation milestones of the Accelerator.



SIGNATORY CITIES IN

AFRICA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LAGOS

NIGERIA

Upon joining the accelerator, Lagos selected the *Accelerating the energy transition pathway*. Meeting the relevant targets requires the city to first focus on decarbonising its electricity use, which represents the majority of energy consumed in buildings. This is mostly generated from fossil fuels today, as the renewable energy industry is only emerging in Nigeria. This must be done while meeting growing electricity demand and addressing the existing shortfalls in available generation capacity which hinder economic development.

To achieve this, Lagos can rely on its significant powers over the electricity sector that have been strengthened in 2023 by constitutional changes. Lagos is mainstreaming renewable energy objectives in key policies and strategies, such as the Lagos State Electricity Policy (2021) and the 20-year Integrated Resources Plan (2022) which include a programme to move away from distillate fuels through avenues like renewable sources deployment and an objective of adopting the cleanest, commercially viable modern technologies.

A key strategy for the city to meet its objectives has been to accelerate the deployment of decentralised renewable energy solutions, especially off-grid solar systems. Lagos adopted in 2022 the Off-Grid Implementation Strategy and Action Plan, which highlights the state's short, medium, and long term goals towards the deployment of 1 GW of decentralised renewable energy capacity across the territory by 2030. Lagos is working on developing the financial mechanisms necessary to achieve this ambitious target.

Deployment of decentralised solar photovoltaic (PV) solutions is already happening at scale. Building on the success of the Lagos Solar Power Project, which added 5 MW of off-grid solar capacity on 172 schools and 11 primary health centres, Lagos is now working to deploy new systems on an additional 100 secondary schools and some government facilities, funded through green bonds. Lagos is also working with the World Bank to install 16 MW of solar capacity on 32 general hospitals.

Lagos has also worked to strengthen the nascent local renewable energy market in Nigeria. To increase awareness about the benefits of clean energy solutions and provide all necessary technical and regulatory information, the city is working with the African Development Bank to launch a one-stop-shop for renewable energy information, and has facilitated the introduction of the Decentralised Renewable Energy desk to

the Renewable Energy Association of Nigeria (REAN). To help bring new technologies to maturity, Lagos has been working on a 5 MW floating solar project, progressing towards realising its Environmental and Social Impact Assessment. The successful implementation of this pilot could unlock large scale deployment of floating solar solutions in the Lagos lagoon. Furthermore, the city is collaborating with entrepreneurs and the private sector to explore innovations in renewable energy development and business models to strengthen its nascent manufacturing and technology capacity.

All these actions contribute to kick-starting a renewable energy revolution in Lagos, helping the city to meet its growing energy demand with renewable sources and displacing fossil fuel use, including through off-grid solutions.

Key successes since joining the accelerator include:

- The launch of the Lagos Off-Grid Implementation Strategy and Action Plan which provides a framework for the acceleration of decentralised solar PV systems deployment, including on schools and government buildings.
- The emergence of a stronger renewable market through piloting floating solar PV solutions and collaborating with the private sector.


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Important upcoming activities:

- Implementing the federal 2023 Electricity Act that gives Lagos more powers over generation, transmission and distribution of electricity.
- Scaling up the deployment of off-grid solutions across the territory.
- Launch of a one-stop shop for all renewable energy information.
- Progressing further on the proposed 5 MW floating solar project.

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TSHWANE

SOUTH AFRICA

The city of Tshwane has signed up to the *Enabling energy access with renewables* pathway, aiming to provide clean energy alternatives to all residents who currently have to rely on the national, heavily coal-reliant grid and face regular disruptions to their energy supply.

To achieve their objectives, the city has been working on two fronts. First, it has supported the deployment of decentralised generation systems, called Small-Scale Embedded Generators (SSEGs), in South Africa. Their size was limited to 1 MW by national regulations, a cap that has been raised to 100 MW by amendments to Schedule 2 of the national Electricity Regulation Act. The city thus focused on reviewing its embedded generation policy to accommodate these changes and improve the application process. Over 6 MW of embedded generation was added in the city since it signed up to the accelerator, bringing the total to over 25 MW. These systems help to reduce pressure on the failing grid and strengthen energy supply for all residents.

In parallel, Tshwane has also supported large-scale clean energy capacity. The city has been working on a request for information (RFI) that aims to identify 1,000 MW of renewable and cleaner energy projects from independent power producers (IPPs), which the city can then contract to power the local grid. This will strengthen and clean up energy supply and displace the need to rely on coal-fired power plants. The outcomes are expected in 2024. The aim of this process is to enable alternative use of energy resources and facilitate the just energy transition into the future.

Tshwane is also leading by example to support clean energy alternatives. The city has been planning a new 350 kWe combined heat and power facility at the 350 kWe Zeekoegat Wastewater Treatment Plant, using biofuels generated from the treatment process. This will account for 34% of the site's electricity demand. The city has continued to shift street lighting to LED technologies, retrofitting the 250W high pressure sodium streetlight luminaires to 100 W LED luminaires. The total energy savings of the LED programme amount to 6,665 MWh per annum.

The city of Tshwane is scaling up both small scale embedded generation and large scale off site renewable energy projects to meet the C40 Renewable Energy Accelerator targets, ensuring that all residents can enjoy the benefits of renewable energy technologies.

Key successes since joining the accelerator include:

- Deploying 6.4 MW of additional local renewable energy systems across the city.
- Initial preparatory work for the direct procurement of clean energy from IPPs.

Important upcoming activities:

- Next stages of the procurement process for 1,000 MW of clean energy capacity (including publication of the RFI, analysis of the results and potential progression towards a request for proposals [RFP]).

Kedibone G Modiselle
Acting Director Mitigation Programmes, City of Tshwane

"The globe is warming at a rapid rate and the time is now for state governments and cities to act in accelerating renewable energy implementation to curb carbon emissions. City of Tshwane's recent greenhouse gas emissions inventory indicates that the electricity sector emits 63% of greenhouse gases. Through our ambitious Climate Action Plan, the city is committed to ensuring that we meet our climate action targets to reduce emission from electricity consumption. This is why the City has established the Energy Task Team mandated to address the city's energy security and availability, while making it possible for the city to deliver on its mandate of service delivery without heavy reliance on fossil fuel electricity. In addition, the city has issued a Request for Information (RFI) calling on the market to submit information relevant to the needs of the city on clean and renewable energy. Our Green Building Development and Net Zero Carbon Policy and Bylaw, which will be approved by MAYCO and Council will also ensure that the transition to a cleaner built environment is enforced as the city develops and grows."

SIGNATORY CITIES IN

EAST, SOUTHEAST ASIA AND OCEANIA

MELBOURNE

AUSTRALIA

The City of Melbourne has signed up to the *Accelerating the energy transition pathway*. They have a goal of being a 100% renewable city by 2030 in their Climate Change Mitigation Strategy.

The city of Melbourne has implemented various actions to increase municipal renewable energy use. The city's own assets have been supplied by 100% renewable electricity under the 10-year Melbourne Renewable Electricity Project (MREP 1) power purchase agreement (PPA) since 2017. Building on the benefits of the existing renewables PPA, the city has undertaken a Gas Free Operations programme to transition city assets off fossil gas and on to 100% renewable electricity, anticipating to save 1,100 tonnes of carbon dioxide (CO_2) per year by 2025. The city has also vastly expanded on-site solar photovoltaic (PV) generation, with recent installations at the Queen Victoria Market site: 250 kW have been installed since 2021 with a further 650 kW scheduled in the next year, avoiding approximately 1,300 tonnes of CO_2 per year.

Beyond municipal operations, the city has also worked to catalyse broader adoption of renewable solutions by residents and businesses. The MREP 1 programme was replicated with a group of seven large users. Together, MREP 1 and MREP 2 have approximately reduced 5% of the city's emissions and resulted in the displacement of 396 GWh of non-renewable energy since September 2021.

The city has also commenced a project to install a network of community batteries. The project – Power Melbourne – will partner with technology providers and an electricity retailer to build a battery network and develop a storage-linked renewable energy offering suitable for apartment residents, renters, and small businesses – often locked out from onsite solar solutions.

To progress where they lack relevant powers and controls, the city has made several submissions to the state and federal governments advocating for policy and legislation to accelerate the transition to 100% renewables and to transform the built environment to benefit from increased renewables in the electricity network. The city has also continued to push for stronger sustainability standards in planning.

Their advocacy has been shaped by **five imperatives**:

1. Accelerate investment in infrastructure that enables 100% renewable energy and build clean energy for Victoria.
2. Update regulations to ensure they facilitate greater uptake of renewable energy and support community batteries such as the Power Melbourne initiative.
3. Accelerate investment in energy efficiency and electrification pathways.
4. Support vulnerable communities in the transition.
5. Accelerate divestment from fossil fuel energy supply.

The combination of innovative energy partnerships, direct action to shift municipal energy to renewables and ambitious advocacy efforts means that the city's electricity has increased by 5% in two years to achieve 42.6% in September 2023.

Key successes since joining the accelerator include:

- A 5% increase in city renewable electricity generation between 2021 and 2023.
- Start of a Gas Free Operations programme for municipal assets.
- Displacement of 396 GWh of non-renewable energy since September 2021 by MREP 1 and MREP 2.

Important upcoming activities:

- 650 kW of solar installations scheduled in 2024 on the Queen Victoria Market.
- Further progress on Power Melbourne


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SEOUL

SOUTH KOREA

Seoul has signed up to the *Maximising local renewable energy pathway*. The fifth Local Energy Plan and the Climate Action Plan highlight the city's commitment to maximise local renewable energy by deploying systems on all feasible municipal assets by 2030. Seoul is aiming for 50% renewable energy generation to be from geothermal energy by 2030, while continuing to identify and expand other renewable energy sources to reach their 2050 net zero emissions target.

Seoul is leading by example by progressing at scale towards the deployment of renewable energy systems on all feasible municipal assets. Their first focus is solar photovoltaic (PV) deployment, with 7.3 MW of solar capacity already deployed in over 130 generation systems across municipal buildings.

But, relatively uniquely amongst signatories, Seoul is also leading in the deployment of geothermal energy capacity: almost 20 MW of geothermal power capacity exist across 40 systems in municipal buildings. The city is also working to add 600 kW of geothermal cooling and heating systems in various municipal buildings that will be completed in 2024. They are expected to secure 30% of energy savings compared to their existing heating and cooling systems.

The existing solar and geothermal electricity systems generate a significant 24% of the municipal power consumption. Seoul allocated KRW 166 million (US$ 12.2 million) for solar PV and geothermal power generation between 2023 and 2024. These increased investments in renewable energy help to build stronger local markets.

Beyond municipal operations, the city is leading on onsite renewable energy deployment with 340 MW of local renewable energy already deployed thanks to a wide range of support actions. The city has recently launched a subsidy programme to support Building Integrated PhotoVoltaics (BIPV) to catalyse technological innovation. Using regulatory powers, the city is also implementing a renewable energy mandate for new buildings. The local government will gradually require new buildings to be zero energy buildings (ZEB), starting with buildings with a minimum floor area of 100,000 square metres from 2023, followed by buildings with a minimum floor area of 1,000 square metres from 2025.

Seoul's comprehensive support to decentralised energy generation and leadership on municipal assets and innovation is putting them on a path to meet their ambitious 2030 targets.

Key successes since joining the accelerator include:

- Solar PV and geothermal now amount to 24% of Seoul's municipal electricity supply.
- 32% of citywide electricity consumption sourced from renewables, way ahead of the national average.
- 340 MW of local renewable energy capacity.

Important upcoming activities:

- Completion of geothermal heating and cooling pilots in municipal assets.
- New zero energy buildings policy coming in effect for smaller new buildings.

SYDNEY

AUSTRALIA

The City of Sydney has signed up to the *Accelerating the energy transition pathway*. The city aims for a 70% reduction in greenhouse gas (GHG) emissions by 2030 (from a 2006 baseline) and net zero emissions by 2035, with an interim target of 50% renewable electricity use in 2030 – as stated in the Environmental Action Strategy.

The city has implemented a multi-faceted approach for their municipal energy sourcing strategy. First, it has been purchasing 100% renewable electricity through a Power Purchase Agreement (PPA). Second, the city has deployed around 2 MW of solar photovoltaics (PV) in 43 council sites. Sydney has also supported innovation, hosting the first major customer-based battery storage facility in Sydney – a 500 kWh lithium-ion battery which allows the site to use more of the 484 kW on-site solar PV installation that would be exported to the grid otherwise. Finally, the city is also focusing on planning for the critical electrification transition of their assets, to stop using fossil gas in coming years. That includes reducing reliance on cogeneration and trigeneration systems and converting all of their gas pool heating systems to electric solutions.

Beyond municipal operations, the city has developed new net zero energy buildings performance standards for new major developments and major refurbishments. Implemented from October 2023, the standards currently require energy efficiency improvements that can be met by onsite renewable generation, and will require developers to purchase renewable power for five years from 2026. The standards also set 'financially viable' energy intensity levels that would be much more easily reached without fossil gas use for developers.

With the majority of residents living in apartment buildings, the city ran an extensive campaign to encourage people to make the switch to green electricity through their energy provider. This included a multi-media campaign as well as online workshops for employees and residents. Sydney has also supported medium to large businesses and continues to promote resources and case studies about large-scale generation certificates and PPAs.

The city advocates for greater uptake and support for renewable energy by the New South Wales State and Federal Governments. The City of Sydney joined a growing number of signatories to endorse the Fossil Fuel Non-Proliferation Treaty, which calls for an end to new coal, oil and gas projects and investing in 100% access to renewable energy globally. In support of this treaty, in August 2022 the council resolved to place restrictions on advertising for fossil fuels for any council controlled signage or property.

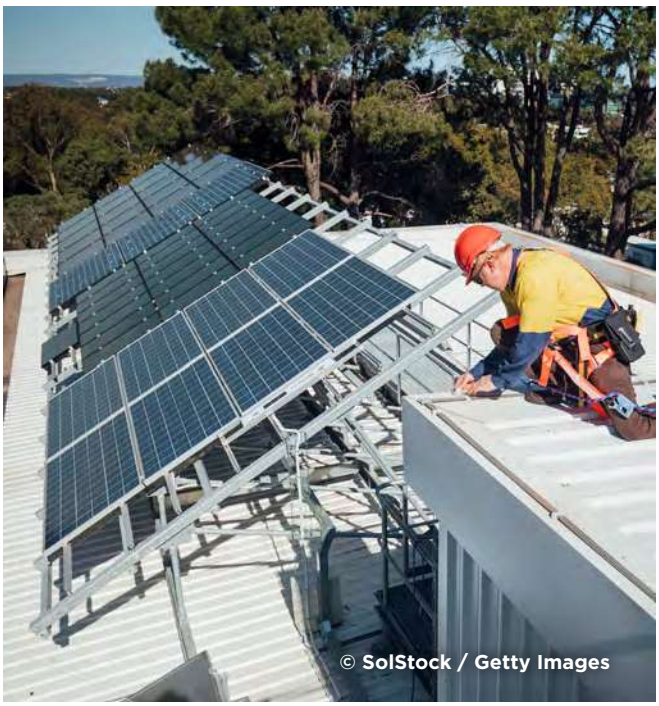
The tools, actions and policies implemented by the City of Sydney are helping to accelerate the energy transition across New South Wales and across Australia.

Key successes since joining the accelerator include:

- Comprehensive municipal energy sourcing strategy, including piloting battery storage solutions.
- Outreach campaign to residents and support to businesses to boost renewable energy adoption.
- Endorsement of the Fossil Fuel Non-Proliferation Treaty.

Important upcoming activities:

- Implementation of the performance standards for net zero energy buildings.
- Further progress on the electrification of municipal buildings.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Kate Deacon
Director Strategic Development and Engagement, City of Sydney

"We're proud to be part of a global movement of C40 cities transitioning to renewable energy. As an organisation we are using 100% renewable electricity. Our priorities now are to improve energy performance, switch our gas appliances to electric, and to advocate so that buildings support the transition by using electricity at times when the grid is most renewable."

TOKYO

JAPAN

Tokyo has signed up to the *Maximising local renewable energy pathway.*

Tokyo is working to achieve key targets for 2030 as laid out in its Tokyo Environmental Master Plan. These include renewable electricity consumption of approximately 50%; the installation of 1,300 MW of solar power generation equipment; and 100% renewable electricity usage for Tokyo Metropolitan Government (TMG) facilities, namely the Governor of Tokyo's bureaus and departments. As of the end of the fiscal year 2021, the cumulative total amount of solar power generation installed in Tokyo-owned facilities is 9,230 kW. To meet its renewable energy goals, Tokyo is installing solar panels on city-owned facilities, establishing the project team to accelerate installation of PV on TMG facilities, and promoting solar energy across all government agencies, which is helping to introduce solar power generation equipment during construction and large-scale renovation projects. Tokyo is procuring 100% renewable energy and establishing a green electricity procurement standard with a high proportion of renewables in order to progress renewable energy adoption across the TMG facilities.

In order to maximise the introduction of renewable energy in Tokyo as a source of locally produced and consumed energy, it is important to make the most effective use of the huge potential of rooftops in Tokyo for power generation. In December 2022, TMG revised an ordinance and reinforced the Green Building Program for New Buildings to mandate large-scale new buildings with a total floor area of 2,000 square metres or more to install renewable energy equipment. This ordinance will come into effect in April 2025. For small and medium-sized new buildings with a total floor area of less than 2,000 square metres, TMG also established the Environmental Building Reporting Program and will require housing suppliers (with a total floor area of at least 20,000 square

metres) and approved businesses that supply a minimum number of new buildings per year to install a defined capacity of renewable energy equipment. This is in line with the national goal of installing solar panels in 60% of newly built single-family homes by 2030.

The cap-and-trade system ordinance was also revised in October 2023 and will be enforced from April 2025. It is a mandatory system for reducing the total amount of carbon dioxide (CO_2) emissions for large-scale existing facilities in Tokyo and sets the requirement, for example, 50% reduction for office buildings, and 48% for factories.


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Tokyo's Carbon Reduction Reporting Program was also revised. This ordinance requires businesses in Tokyo to report on CO_2 emissions if their total energy usage at multiple small and medium-sized facilities exceeds a certain level. It aims to achieve a new level of energy saving by reducing the energy consumption of small and medium-sized facilities in Tokyo by 35% compared to the year 2000, and increasing the percentage of renewable electricity use to 50%. Other ordinance revisions include the Local Energy Planning Program and the Energy Environment Planning Program.

The Tokyo Metropolitan Renewable Energy Implementation Expert Board was also established to progress the government's efforts to make renewable energy the core energy source and expand the use of recycled resources. Additionally, there are city subsidy systems in place for households and businesses aimed at increasing renewable energy uptake.

Key successes include:

- Approximately 15.6 billion kWh of electricity generated using renewable energy in the city (the amount generated in 2021)
- Enactment of the new buildings ordinance.
- Revisions of ordinances on the Cap-and-Trade Program, the Green Building Program, the Local Energy Planning Program and the Energy Environment Planning Program.
- Establishment of Tokyo Metropolitan Renewable Energy Implementation Expert Board.

Important upcoming activities:

- Implementation of the Environmental Building Reporting Program that will mandate house suppliers to meet minimum renewable energy installations requirements.

SIGNATORY CITIES IN

EUROPE

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COPENHAGEN

DENMARK

Copenhagen has signed up to the *Accelerating the energy transition pathway*.

Copenhagen continues to implement the Copenhagen 2025 Climate Plan and work towards achieving its goal of a carbon neutral Copenhagen by 2025. The city is aiming to be supplied by 100% carbon neutral electricity and heat by the same year. The plan is split into four pillars: energy consumption, energy production, mobility and city operations. Every 3–5 years, the actions are reviewed. Plans are underway to deploy 560 MW of onshore and offshore wind power in collaboration with local utility HOFOR, contributing towards the city's target of increasing renewable electricity production both within and outside of city boundaries. To this end, the city strives to lead by example, by switching municipal electricity consumption to 100% renewable energy by 2025.

Copenhagen is also evaluating the use of a power purchase agreement (PPA) for renewable electricity to power municipal buildings and activities. Following the approval of a supplement to the final roadmap in its current climate plan after joining the C40 Renewable Energy Accelerator, the city has increased its renewable energy target by 100 MW of wind and solar power, making the new total target 560 MW. The solar rooftop target was also raised. As for incentives, the city is offering funding to residents to support the process of meeting renewable energy targets.

Key successes include:

- 40 MW of total offshore wind installed within city boundaries.
- 10.65 MW of total onshore wind installed within city boundaries.
- 22.41 MW of total solar installed as of July 2022 within city boundaries.

Important upcoming activities:

- Further progress on switching municipal electricity to renewable energy sources and on wind power deployment.


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LISBON

PORTUGAL

Lisbon has signed up to the *Maximising local renewable energy pathway*. Lisbon continues to implement its Climate Action Plan (CAP) 2030 and work towards its goal of 100% renewable electricity at the municipal level by 2030.

The city is developing a detailed database of solar photovoltaic (PV) and technology on municipal assets. The city is also in the process of identifying municipal buildings with the capacity to install self-consumption PV systems under the Municipal PV Roadmap. The Municipal PV Roadmap has identified 476 potential installations in municipal assets that can correspond to a total of 10 MW solar capacity. The city will implement these installations over the next three years. The roadmap represents 10% of the solar strategy target in 2030. The city has deployed 2.77 MW of clean energy since March 2022, representing 1.4% of the city's total feasible potential.

The city also aims to achieve its own renewable energy goal by 2025 through green procurement – including mandatory renewable electricity in public tenders – or through the acquisition of guarantees of origin.

In 2023, the city published the Decree Law 11/2023 that eliminates the obligation of gas network projects for new or retrofitted buildings. This measure will certainly phase-out gas consumption in new and retrofitted buildings.

Energy poverty studies and surveys have also been undertaken by Lisbon to help the municipality improve on energy access. As of September 2023, the city has deployed 205 kW of renewable energy on municipal assets. Currently, the municipal assets have an estimated annual renewable energy production of 300 MWh.

Lisbon is aiming to become a solar city by 2030, by installing 103 MW of cumulative PV capacity – 178 watts per capita. To support this ambition, the city is promoting, advocating and implementing its Lisboa Cidade Solar strategy. The Solis App and the Solis Web Portal are helping to promote wider acceptance and mass adoption of solar PV in the city.

Key successes since joining the accelerator include:

- Publication of the Decree Law 11/2023 that eliminates the obligation of gas network projects for new or retrofitted buildings.

Rui Dinis
Climate and Energy Advisor at Lisboa E-Nova (Energy and Environment Agency), City of Lisbon

"We need a climate resilient future, so we need to focus on ensuring that we have clean air. a "Climate action plays a fundamental role in the choices we make as governments, businesses and residents, and ultimately will be decisive towards our future. Cities, as both part of the problem and part of the solution, have higher responsibility in creating solutions for a change. Beyond responsibility, cities have the ability, the means and, of course, the will to create and deploy these solutions. That's what the C40 Renewable Energy Accelerator is all about – willingness and means to anticipate transition. What makes our team most proud is clearly to be part of this change, having delivered the Lisbon Climate Action Plan and taking the climate action off the page to deliver them for the city."

If you look at the context of what climate change means, its impacts and effects – when you put all of that together, you have a crisis.

Addressing those challenges creates employment opportunities."

LONDON

UNITED KINGDOM

London has set a target to supply 15% of its energy from renewable and local sources by 2030. The city's Solar Action plan aims to achieve 1 GW of installed solar capacity by 2030 and 2 GW by 2050. To meet these and other renewable energy goals, the city has undertaken several steps to lead by example. In 2022, the Greater London Authority (GLA) moved into a new City Hall with an 'Outstanding' BREEAM rating and a 'LEED Platinum' certification. The all-electric building runs on 100% renewable energy and features 1,550 square metres of solar PV and 17.5 square metres of solar thermal panels which generate electricity and provide hot water. Additionally, Transport for London (TfL) launched a Power Purchase Agreement (PPA) tender in 2023 to source renewable energy to run its operations from 2025. This will supply 80–200 GWh per year for the London Underground network over a 15–year term. Further installations of solar panels across the GLA estate continue to be explored and advanced. For example, the London Stadium at the London Legacy Development Corporation is the latest site earmarked for £4 million (US$ 5.1 million) in funding for a solar membrane which would pay for itself within five years, with the potential to generate 3,000 MWh per year. In 2022, the Co-Chair of C40 and Mayor of London Sadiq Khan chaired a joint C40 and International Energy Agency (IEA) roundtable on energy poverty, which led to the launch of a 10-point emergency plan based on key city actions and Climate Action Plans.

London has multiple ongoing programmes, projects, funds and incentives that accelerate renewable energy adoption. The city established the London Community Energy Fund, which provided much-needed support to establish and deploy community energy projects to help reboot the economy and benefit hard-hit communities. The mayor's Green Finance Fund was launched at London Climate Action Week 2023 and will lend up to £500 million (US$ 635 million) to projects that help London meet its net zero ambitions. The mayor's Fuel Poverty Partnership agreed on a new work programme focusing on the cost-of-living crisis, cold homes and health, the private rented sector and fair decarbonisation of heat. The Local Energy Accelerator (LEA), Warmer Homes programme, 24/7 Carbon-Free Energy for Cities programme and Solar Together London programme are examples of other running programmes that decarbonise the city energy supply. The city's energy utility, London Power, continues to offer fair and competitive pricing and electricity generated from 100% renewable sources to its customers.

Key successes since joining the accelerator include:

- An additional 5.2% (27.72 MW) local renewable energy generated between 2021 and 2022
- Additional renewable energy financing through funds like the Green Finance Fund
- London joining the 24/7 Carbon-Free Energy for Cities programme


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PARIS

FRANCE

Paris has signed up to the *Maximising local renewable energy pathway*. Its Climate Action Plan includes a goal of 45% renewable energy use by 2030, 10% of which will be produced locally. This will increase to 100% renewable energy by 2050, including 20% of locally produced energy.

Since 2015, municipal services have been powered by renewables, guaranteed through approved renewable energy supply certificates. In addition, the Énergiesculteurs programme was launched to promote solar panel installations on public building rooftops. A first phase of the programme has been implemented by Enercitif, an energy cooperative that also runs awareness raising campaigns about the energy transition among residents. Since signing up to the accelerator, the city has started the deployment of 6,000 square metres of panels on 15 roofs across Paris – three completed in 2023 and 12 to follow in 2024 – totalling 730 kW of peak capacity (building on 120 kW deployed in 2022 by the city on its assets). The city's water company Eau de Paris also operates 11 solar projects and a small hydropower plant that generated 3.3 MWh of clean electricity in 2022.

Using local, clean resources for heating and cooling is a key priority for Paris. Between 2021 and 2023, almost 200 new connections have been made to district heating networks, which are already 54% renewable. This represents tens of MW of heating oil and fossil gas capacity avoided. Eau de Paris leads the way by operating a geothermal plant providing clean heat to the Clichy-Batignolles eco-neighbourhood. District cooling networks have also been expanding, with over 60 new connections made in 2021–2022 (reaching a total of 765 customers) and an additional 6 kilometres of pipes. These cooling networks will be expanded by 158 kilometres by 2042, with 20 additional cooling generation plants and ten storage sites – cooling an additional 2,300 buildings. These networks will be powered by 100% renewable electricity, including 70% generated from five solar farms built for that purpose.

Paris has also adopted an ambitious plan to tackle energy poverty at the end of 2021. This includes the Local Intervention Service for Energy Control (SLIME) programme launched in 2022 to better identify and support households experiencing energy poverty, with the help of 450 volunteers and 350 social workers trained by the Paris Climate Agency. Subsidies for energy retrofits are offered through the Ecorénovons Paris+ programme. It has ambitious objectives of renovating 22,500 private properties throughout the mandate with a budget of €58 million (US$ 63.5 million).

Paris is well on its way to achieve a locally-led energy transition while tackling energy poverty across its territory.

Key successes since joining the accelerator include:

- A total of 19,141 MWh of renewable energy production and 185 renewable electricity production sites counted in 2022 and the launch of the Énergiesculteurs programmes.
- Expansion of clean district heating and cooling networks.
- Implementation of a comprehensive plan to tackle energy poverty

Important upcoming activities:

- An additional 12 solar rooftop projects on municipal assets to be deployed in 2024.
- Further expansion of the renewables-based

SIGNATORY CITIES IN

LATIN AMERICA

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BUENOS AIRES

ARGENTINA

Buenos Aires has signed up to the *Maximising local renewable energy pathway*. Buenos Aires has undertaken a number of actions to increase renewable energy uptake and use in its assets. In June 2023, the city enacted law 6.646, on the use of renewable energy in public buildings, which also led to the development of a strategic plan for the use of energy from renewable sources in public buildings of the Government of the City of Buenos Aires. This plan will guarantee progress on implementing clean energy in all city public buildings, with annual reviews. The city is also implementing a Procurement and Installation Protocol for renewable energy systems and their components.

Buenos Aires will also engage consultants to explore the implementation of community solar energy on public buildings, with initial financing obtained from the City Climate Financing Gap Fund. The consultancy aims to define the characteristics and methodology for the best application of a community solar energy model on large rooftops in the city, focusing on public buildings and municipal developments. This model is based on the public and private investments to accelerate the deployment of clean technologies in the city.

Furthermore, the city's progress continues with the development of 1,650 kW of renewable energy already installed in public buildings, whose surplus energy is fed back to the grid. Other actions and projects implemented include the Ciudad Solidaria project, the Renewable Energy Systems Installer course, the development of a rooftop solar resource map, a comprehensive survey of the state of renewable energy installations in public buildings and many more.

Key successes since joining the accelerator include:

- An additional 6.13 MW of local renewable energy deployed
- 324 newly created green jobs
- 340 percent of additional citywide use of renewable electricity
- 79 kW of solar photovoltaic installed into two schools

Carolina Theler
Director General for Environmental Policy and Strategy, City of Buenos Aires

"During 2023, in the Energy Management team, we worked on various projects focusing on energy efficiency and renewable energy deploy-ment, in both the public and private sectors. I am especially proud of the work that has been done on the regulatory front regarding renewable energy. I am also proud of the different projects carried out in relation to the education of res-idents about these technologies, with the objective of providing the best tools for this sector to develop and for more and more residents to implement re-newable solutions in the residential and private sectors. I believe that educa-tional actions are fundamental, since they not only allow those who want to adopt new technologies to have valuable and reliable information at hand, but also make residents more aware of why the energy transition is so important and how energy management is an essential solution to mitigate and adapt to the climate crisis."

SIGNATORY CITIES IN

NORTH AMERICA


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LOS ANGELES

UNITED STATES

Los Angeles has signed up to the *Accelerating the energy transition pathway*. To support the city's climate and energy objectives, the Los Angeles Department of Water and Power (LADWP) completed its Strategic Long Term Resource Plan (SLTRP) in 2022. It incorporates a pathway to achieve 100% renewable power by 2035, based on the LA100 study which showcases different clean electricity pathways for the city.

Since September 2021, Los Angeles has deployed several solar projects on municipal buildings. Notable projects include the installation of 580 kW of solar at the Police Department Motor Transit Division. More adoption of solar energy has been prioritised in the Executive Directive No. 25, which is targeting that all new municipally owned buildings or major renovations will be carbon neutral by 2030. Currently, the Los Angeles Bureau of Engineering is also creating a Municipal Building Decarbonization Workplan to prioritise and decarbonise the city's 1,200 buildings. The City Council authorised an initial US$ 30 million towards decarbonising buildings, installing solar/storage, and electric vehicle (EV) chargers on city owned facilities, with progress already made on nine city-owned buildings.

Los Angeles can rely on LADWP, a municipal utility, to meet its energy commitments – a relatively rare situation among C40 cities. LADWP has recently completed several key projects, including the Red Cloud Wind project in New Mexico (which provides over 6% of the city's total energy needs) and half a dozen major transmission infrastructure upgrades. LADWP has nearly completed the 400 MW Eland Solar and Energy Storage project.

The city continues to seek resources to support innovation, applying for state and federal funding to realise its carbon-free goals. Los Angeles has already applied for over US$ 825 million of state and federal funding to advance its clean energy goals. In partnership with the state of California, LADWP applied and was awarded US$ 1.2 billion for the Department of Energy's Hydrogen Hub grant application.

Various renewable energy milestones have been established by the city's Green New Deal (GND), including powering the 2028 Olympic and Paralympic Games with 100% clean power and phasing out coal at the Intermountain Power Plant by 2025 and replacing it with renewable hydrogen. Additionally, the city continues to take equity and equality considerations as it implements its energy transition. In December 2023, the city released the LA100 Equity Strategies report which outlines LA's path to achieve an equitable clean energy transition and impact, including the creation of green jobs. As an example, the recent Comprehensive Affordable Multifamily Retrofits Program (CAMR) provides incentives for families to decarbonise their homes and install solar on their rooftops.


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Key successes since joining the accelerator include:

- New large-scale renewable energy projects coming online, helping to raise the percentage of renewables in the grid from 36.2% in 2021 to 39.9% in 2022.
- Launch of the LA100 Equity Strategies report to embed equity in renewable energy work.

Important upcoming activities:

- Phase out the last remaining coal plant in 2025.
- Further progress on the decarbonisation of the city's 1,200 buildings.

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MONTRÉAL

CANADA

Montréal has signed up to the *Accelerating the energy transition pathway*. The city's electricity is already largely supplied from renewable sources by the Quebec electricity network, so Montréal is focusing on fully decarbonising other energy use in buildings, with the aim of reaching net zero buildings by 2040 – ten years ahead of the original target included in the city's climate action plan.

Montréal is assessing the potential for renewable assets to generate renewable energy. The city already operates the Saint-Michel environmental complex, where biogas is captured and used for the production of heat and electricity. The city is working towards putting an anaerobic digester into operation for the recycling of organic waste materials, and is exploring how to generate energy from the sludge created by the wastewater treatment plan.

The city has worked on a roadmap towards net zero buildings, with the first milestones starting to be implemented. In particular, a regulation aimed at new constructions to ensure that their heating equipment and cooking are decarbonised will be enforced for smaller buildings from 2024 and in 2025 for all new buildings. The city also plans to carry out an evaluation of the potential for the deployment of renewable energy systems on all buildings and sites of the city.

Montréal continues to implement the Climate Plan 2020–2030 (CAP 2030), which seeks to catalyse opportunities to reduce greenhouse gas (GHG) emissions to at least 55% below 1990 levels by 2030, with the ultimate goal of the city becoming carbon neutral by 2050. The plan is split into actions like financing, banning the use of all fossil fuels in municipal buildings, and ensuring that all municipal buildings are powered by renewable energy. Another target in the plan is having all existing commercial, industrial, institutional and residential buildings with oil burning furnaces converted to using renewable energy sources by 2030.

Key successes include:

- 99% of the city's electricity is from renewable energy sources.
- New regulation mandating decarbonised heating systems in new buildings.

Important upcoming activities:

- Expansion of the heating system decarbonisation mandate to all buildings in 2025.
- Assessment of the citywide potential for onsite renewable energy systems deployment, with a focus on solutions for municipal assets such as the wastewater treatment plant.

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SAN FRANCISCO

UNITED STATES

San Francisco has signed up to the *Accelerating the energy transition pathway*.

The San Francisco Public Utilities Commission (SFPUC) continues to competitively market and promote its 100% renewable electricity products to San Francisco customers, including CleanPowerSF SuperGreen, Hetch Hetchy Power, and Hetch Hetchy Power Premium. SFPUC continues to work with city departments to design and build solar electric generation projects. CleanPowerSF has added 57.45 MW and Hetch Hetchy Power has added 15.66 MW of local renewable energy since September 2021. Currently, there are three solar projects in active construction, which will provide approximately 200 kW in total. The SFPUC also works with city departments to design and build solar and energy storage projects. There are currently two such projects in the design phase that will potentially have a grid independence capability. The CleanPowerSF opened enrollment for the SuperGreen Saver Program. It provides low-income customers in designated disadvantaged communities access to 100% renewable energy at a 20% bill discount. Similarly, the newly revamped Customer Assistance Program for Hetch Hetchy Power customers living in affordable and public housing provides 100% clean electricity at a 30% discount.

The updated Chapter 7 of the Environment Code is an ordinance that requires new construction and major renovations of municipal buildings to exclude fossil gas and include exclusively all-electric energy sources. In addition, critical community institutions including public safety facilities, health clinics, community centres, libraries, and emergency management facilities are required to install photovoltaic (PV) and battery storage to sustain emergency energy loads. Other municipal buildings are required, during new construction or major renovation, to implement energy efficiency and decreased grid dependency by either installing photovoltaics and battery storage, ensuring annual site zero net energy, designing energy use intensity with 50% improvement over the national median, or a 10% improvement over the energy standard ASHRAE 90.1 (2019).

The city's Climate Action Plan includes numerous policies and actions focusing on accelerating the deployment of renewable energy and decarbonising buildings, including through mandating all-electric new buildings. The city targets 100% renewable electricity supply to residents by 2025 and requires large commercial buildings to use 100% renewable electricity from 2022.

Key successes since joining the accelerator include:

- The ordinance for new construction and major renovations of municipal buildings to exclude fossil gas.
- CleanPowerSF has added 57.45 MW and Hetch Hetchy Power has added 15.66 MW of local renewable energy.
- 8.73 MW of non-renewable energy phased out.

Important upcoming activities:

- Further renewable energy deployment facilitated by the SFPUC's products.

VANCOUVER

CANADA

Vancouver has signed up to the *Accelerating the energy transition pathway*. Vancouver already sources almost all its electricity from renewables and aims to reduce its dependence on fossil fuels and satisfy its overall energy needs through 100% renewable energy by 2050, as per the city's Greenest City 2020 Action Plan.

The city fast-tracks its transition through various plans, strategies and policies. A leading initiative is the efforts to provide clean heat through the city-owned Neighbourhood Energy Utility (NEU) district energy system. The NEU is developing a roadmap to transition from its current target of 70% renewable energy supply to 100% renewable energy by 2030, as highlighted in the city's Climate Emergency Action Plan. The NEU provides low carbon thermal energy to buildings in the False Creek area of the city. The primary energy source for the NEU is sewage waste heat recovery, in which sewage waste heat is captured and used to heat water at the False Creek Energy Centre. The NEU now supplies low carbon energy for heating and hot water to 46 buildings (640,000 square metres of floor area) and continues to expand each year. The NEU currently operates 3.2 MW of sewage heat recovery capacity with work underway to install an additional 6.6 MW of capacity, enabling the NEU to continue to achieve its renewable energy performance targets and expand low carbon thermal energy to new buildings in the False Creek area.

The city has committed to zero-emissions retrofits under its Renewable Energy Strategy for city owned buildings (2016–2040). It also requires all existing facilities and construction of all new facilities to adhere to zero emissions standards and be powered by renewable energy. The city is also implementing the Zero Emissions Buildings Plan that focuses on reducing the demand for fossil gas used primarily for space heating and hot water and transitioning these functions to renewable sources such as electricity including heat pumps, bio-gas and Neighbourhood Renewable Energy Systems (NRES).

Inclusivity and equity play a central role in the city's transition initiatives, which drives significant changes in the local labour market. These changes are underpinned by a commitment to a just and inclusive transition, ensuring that the shift to a net-zero economy generates good green jobs for all. This approach also supports small businesses and emphasises that every worker should have access to not just any job, but a decent and inclusive one in the emerging green economy.

Key successes include:

- 99% of the city's electricity is from renewable energy sources.
- Development of a transition plan the Neighbourhood Energy Utility (NEU).

Important upcoming activities:

- Expansion of waste heat recovery capacity for NEU.

BARRIERS TO ACHIEVE THE COMMITMENTS

Cities face multiple challenges in their energy decarbonisation journey. The most common challenges include financial barriers, regulatory and institutional barriers, technological barriers, knowledge and staff capacity, and stakeholder engagement.

With competing priorities, cities are finding it harder to access funds for renewable energy deployment. This has been made worse by the increasing material costs driven by inflation and the rising costs of borrowing. Despite generating electricity at lower costs than coal or gas in countries where 95 out of 96 C40 cities are located, renewable energy sources have been particularly impacted by these trends due to their capital costs being higher. Applications to different and emerging funds such as climate funds and the use of innovative financing models are examples of ways cities have been able to get around this challenge.

Some cities have limited direct powers over the energy supplied across their territories. These powers may fall under other entities like the state or country, and lead to jurisdictional issues when implementing renewable energy projects, programmes and policies. However, cities have found ways to maximise the impact of the actions they can deliver within existing regulatory frameworks and institutional setups. These include prioritising renewable deployment on their own assets, or using regulatory powers over buildings to incentivise solar installations. Additionally, city teams are increasingly finding ways to work across departmental silos and leverage synergies, resources and data to overcome such institutional barriers. Cities and mayors also use their public, trusted voice to advocate for more ambitious energy policies and influence where they can't control.

Another challenge faced by accelerator signatories is the lack of sufficient technical capacity in city teams. This includes a lack of legal expertise relating to Power Purchase Agreements (PPAs) and Energy Performance Contracts, and a lack of staff with experience in transaction advisory services.

Other challenges include lack of data and low public awareness about renewable solutions. Cities have also experienced challenges particularly in communicating and engaging with residents, especially the most marginalised, on information about new policies, energy cost reduction incentives and benefits available.

CONCLUSION

Signatories to the C40 Renewable Energy Accelerator have been implementing action at scale to turn their ambition for decarbonised energy systems into a reality. Remarkable progress has been witnessed in fast-tracking the energy transition since the launch of the accelerator. This has helped to create healthier communities, reduce emissions of greenhouse gases, deliver jobs and protect the most marginalised residents from the impacts of climate change.

But challenges remain – and C40 is committed to supporting signatory cities to find solutions to overcome them. Peer-to-peer learning through webinars, workshops and other interactions is important for city officials to identify best practices and inclusive and effective approaches to decarbonisation. C40 is also providing technical assistance to a number of cities around the world to explore new approaches to power system decarbonisation, such as the 24/7 Carbon Free Energy approach, or the sourcing of renewable energy from independent power producers (IPPs) in South Africa.

As the first deadline of the accelerator commitments approaches, C40 will continue to support cities to leverage their municipal assets and energy consumption to accelerate the shift away from fossil fuels, as required by science to meet the goals of the Paris Agreement.

Cities are gearing up for the second half of this critical decade of climate action by working together to enable change and overcome barriers. We remain confident that signatories to the C40 Renewable Energy Accelerator will continue to set the pace for ambitious climate action, building a future in which we can all thrive.

C40
CITIES