

CITIES ON THE ROUTE TO 2030

Building a zero emissions, resilient planet for all



ABOUT CDP

CDP is a global non-profit that runs the world's environmental disclosure system for subnational governments and companies. Over 10,000 organizations around the world disclosed data through CDP in 2020, including more than 9,600 companies worth over 50% of global market capitalization, and over 940 cities, states and regions — representing a combined population of over 2.6 billion. Visit [cdp.net](https://www.cdp.net) or follow us @CDP to find out more.



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The reference to a "city" in the report applies to any entity that submitted data through the Cities 2020 Questionnaire in the CDP-ICLEI Unified Reporting System. The analysis contains data from cities or, in some instances, groups of cities at different administrative levels that reported in 2020. This includes metropolitan areas, combined authorities, and some regional councils.

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KEY FINDINGS

In 2020, there has been a **17x** increase in city disclosure since 2011 — **812** cities have disclosed, compared to just **48** in 2011.



Cutting emissions in line with 1.5°C

- ▼ **67%** of cities now have city-wide emissions inventories.
- ▼ **58%** of cities do not yet have a city-wide emissions reduction target.
- ▼ **148** cities report that their targets are aligned with 1.5°C, but only 52 of these reported an interim target.
- ▼ **Over half (51%)** of cities do not yet have a climate action plan.
- ▼ Reporting cities are generating around **692 million Megawatt-hours (MWh)** of renewable energy from their emission reduction activities, enough to power almost **65 million homes** for one year¹.
- ▼ Renewable energy makes up **42%**² of reporting cities' energy mix vs. a global average of **26%**³.



Building resilience to protect every person

- ▼ **93%** of cities are facing significant climate risks.
- ▼ **43%** of cities, representing a projected population of over 400 million people by 2030, do not have an adaptation plan to tackle climate risk.
- ▼ **For 74%** of cities, climate change is increasing risks to already vulnerable populations.
- ▼ **59%** of cities have conducted a climate risk and vulnerability assessment.
- ▼ **60%** of cities cite substantive risk to their water security.
- ▼ **Only 46%** of cities include water security in their vulnerability assessment.
- ▼ **Almost 50%** of cities taking adaptation actions see a public health benefit from these measures.
- ▼ **25%** of cities cite budgetary capacity issues as a barrier to adaptation.



Climate planning to sustain action

- ▼ **87%** of cities are incorporating sustainability into master planning or are intending to do so in the next two years.
- ▼ Cities that incorporate sustainability into master planning identify **more than twice (2.4x)** as many opportunities from addressing climate change as cities that do not.
- ▼ Cities with climate action plans identify **twice as many** opportunities from addressing climate change as cities that do not. These opportunities include business innovation and additional funding. These cities are also taking **five times** as many actions to reduce emissions as other cities.
- ▼ Cities identify **over 1,000 climate projects** seeking finance, worth **USD 72 billion**⁴.
- ▼ **76%** of cities are collaborating with businesses on sustainability projects or are intending to do so in the next two years.

¹ The comparison to total homes powered is based on data from the [EPA calculator](#).

² Note that this statistic includes 124 cities in Latin America where hydropower contributes significantly to the energy mix. Without these Latin American cities, 32.3% of reporting cities' energy mix is made up of renewable energy, which is still higher than the global average.

³ [IEA, 2018](#).

⁴ This is the total cost of the projects identified. Cities are seeking for investment for part of this cost — USD 42 billion.

FOREWORD



Kyra Appleby

Global Director of Cities, States and Regions, CDP

2020 marked ten years of cities reporting climate and environmental data through the CDP-ICLEI Unified Reporting System.

We have witnessed a profound change in climate action over the past decade. Local government action and ambition has increased, and national governments have also stepped up. The signing of the Paris Agreement in 2015 was a turning point for city action – the number of cities disclosing to CDP since 2015 has more than doubled, showing that cities are stepping up to the challenge of cutting emissions and building resilience to climate change.

With the publication of the Intergovernmental Panel on Climate Change (IPCC)'s Special Report on 1.5°C in 2018, this momentum continued, and we began to see an upswell in cities across the globe setting long-term ambitious targets. In many countries, cities' targets are more ambitious than their national government's commitments, such as in Santa Fe County in the United States, Greater Manchester in the United Kingdom, and Penampang in Malaysia. In 2020, 148 cities reported having targets aligned with a 1.5°C future. This figure is set to grow in the coming years as cities develop their science-based climate targets.

Since the beginning of the COVID-19 pandemic, cities have been on the frontline of two complex global crises: tackling the pandemic and climate change simultaneously. Despite facing increased pressure and reduced resources during this time, 812 cities reported on their environmental impacts in 2020. It is testament to the truly determined staff in cities across the globe who work tirelessly to take

action on climate change in the face of extremely challenging circumstances. From all of us at CDP, we thank you for your efforts and your continued commitment to strong and meaningful environmental action.

What began as a public health crisis has now developed into a social and economic crisis. COVID-19 has shone a light on inequalities and vulnerabilities, showing us that cities can't go back to business as usual – we need to build back better.

74% of cities report that climate change is increasing risk to already vulnerable populations. City climate action must tackle social inequality too, ensuring fair and equitable protection from climate and public health threats.

We now find ourselves in the second year of the decade of climate action. We are facing a climate emergency, and this is our last chance to make rapid and deep cuts to global emissions, protect biodiversity, and ensure our cities provide safe and resilient places to live and do business.

As we embark on the next ten years of climate action, we acknowledge that city progress has been steady, but there is still much work to do. We must prioritize a green recovery and ensure that cities have the necessary support to decarbonize rapidly and build resilience to tackle climate risks. With the clock ticking down, the time for strong, decisive action is now.

THE ROUTE TO 2030

As we mark ten years of CDP cities' disclosure, we reflect upon the huge growth in reporting of data and action, with a 17-fold increase in the number of cities disclosing through the CDP-ICLEI Unified Reporting System. As we look to the next 10 years, we must continue this upward trajectory towards a resilient future – the health of the planet and its people depend on it.

The latest climate science is clear. We must reduce global emissions by 45% by 2030 and reach net zero by 2050 if we are to build a zero emissions and safe, resilient planet for all. Cities represent up to 70% of global emissions⁵ and have a vital role to play. Yet cities cannot do it alone. Despite the powers they have, the bulk of a city's emissions typically come from sources over which it exercises no direct control⁶.

Cities are stepping up to this challenge by choosing to collaborate with other stakeholders. 76% of cities are already working with the private sector on sustainability projects, or plan to do so in the next two years.

Cities have a dual role to play. To survive and thrive they must be resilient, healthy, and equitable places to live and work. To achieve this all cities should have a plan to adapt to climate change. Although 93% of reporting cities are facing significant climate hazards, putting their people and infrastructure at risk, currently 43% of cities do not yet have an adaptation plan to tackle these hazards.

Robust, accurate, and timely disclosure of environmental data is essential if we are to credibly demonstrate progress toward limiting global warming to 1.5°C.

To stay within safe limits, we must accelerate action today.



We know that cities are on the front lines of the climate emergency. They are densely populated, and they account for 70% of global emissions. But they are also agents of change to build a new model of society. We, the mayors, we know how to act quickly on the ground, as close as possible to the people who are already being impacted by climate change.

ANNE HIDALGO
Mayor of Paris, France



⁵ [Global Report on Human Settlements 2011: Cities and Climate Change, UN-HABITAT, 2011.](#)

⁶ [It Takes a City: The Case for Collaborative Climate Action, CDP, 2016.](#)

Cities' progress over the last ten years



544 cities

have city-wide emissions inventories ↑ from 30 in 2011



339 cities

have city-wide emissions reduction targets ↑ from 16 in 2011



399 cities

have climate action plans ↑ from 210 in 2016



Renewables make up

42% of reporting cities' energy mix vs.

26% global average⁷



459 cities

have an adaptation plan that identifies and manages climate risks ↑ from 30 in 2011



710 cities

incorporate sustainability into their master planning or plan to do so ↑ from 32 in 2011



Kolkata, India

HALVING EMISSIONS BY 2030

Over the past ten years cities have made progress in measuring their emissions, setting targets, and implementing plans and actions to reduce emissions.

Today, 544 cities have city-wide emissions inventories, up from 30 in 2011. 365 cities have city-wide emissions reduction targets, up from 16 in 2011.

Most commonly reported actions cities are implementing to achieve their targets and reduce emissions (% of total and number of cities reporting each action)



34% | 276

implement energy efficiency/ retrofit measures



17% | 142

implement building codes and standards



21% | 173

use low or zero carbon energy supply generation



16% | 126

are planning green space and/or biodiversity preservation and expansion



20% | 162

use on-site renewable energy generation



15% | 118

are building recycling or composting collections and/or facilities



19% | 156

are installing LED/ CFL/ other luminaire technologies



14% | 116

separate recyclables and organics from other waste



18% | 146

are improving fuel economy to reduce CO₂ from motorized vehicles



13% | 107

are developing infrastructure for non-motorized transport



Medellín, Colombia

Cities' actions are having an impact

The actions mentioned above and other actions already being taken by cities are expected to reduce more than 63 million metric tonnes of CO₂ per year, save 69 million MWh of energy every year, and generate 692 million MWh of renewable energy, enough to power almost 65 million homes for one year⁸.

The way forward

While cities are making progress, there is still much work to be done. When it comes to cutting emissions, cities must set and deliver against science-based climate targets⁹ to determine their pathway for reducing emissions to net zero by 2050. In 2020, 148 cities reported a 1.5°C-aligned target. While most of these targets were reported by North American (58) and European cities (49), we are seeing a more diverse group of cities taking accountability for cutting their fair share of emissions, such as eThekweni in South Africa, Quito in Ecuador and Nairobi in Kenya.

By ramping up their action, and closely collaborating with the utilities sector and regulators, cities could achieve a grid mix of 50 to 70% renewables by 2030¹⁰. When it comes to achieving this target, cities reporting through the CDP-ICLEI Unified Reporting System are already outperforming the global average: 41.8% of their energy mix comes from renewable sources¹¹ versus a global average of 26%¹². This positive trend must continue as we approach 2030. With the cost of renewable energy now undercutting fossil fuel sources¹³, this is an area where cities can excel regardless of their financial situation.

Where cities should focus their efforts

In most cities, buildings, transport, energy and waste are the areas that have the greatest potential to reduce emissions¹⁴. However, in 2020 just 50% of reporting cities were taking actions to reduce emissions in buildings, only 42% were tackling transport emissions and only 34% were taking actions to decarbonize the electricity grid. Our data shows there is still a gap between what is needed and what cities are doing.

83% of cities are not implementing actions to reduce emissions in all four areas of highest impact



50% | 406

of cities are optimising energy use in buildings



42% | 339

of cities are enabling next-generation mobility



34% | 278

of cities are decarbonizing the electricity grid



33% | 271

of cities are improving waste management

⁸ The comparison to total homes powered is based on data from the [EPA calculator](#).

⁹ [Science-Based Climate Targets: A Guide for Cities, SBTN, 2020](#).

¹⁰ [Focused Acceleration: A Strategic Approach to Climate Action in Cities to 2030, McKinsey and C40, 2017](#).

¹¹ Note that this statistic includes 124 cities in Latin America where hydropower contributes significantly to the energy mix. Without these Latin American cities, 32.3% of reporting cities' energy mix is made up of renewable energy, which is still higher than the global average.

¹² [Ibid., IEA, 2018](#).

¹³ [Renewable Power Generation Costs in 2019, IRENA, 2019](#).

¹⁴ [Ibid., McKinsey and C40, 2017](#).

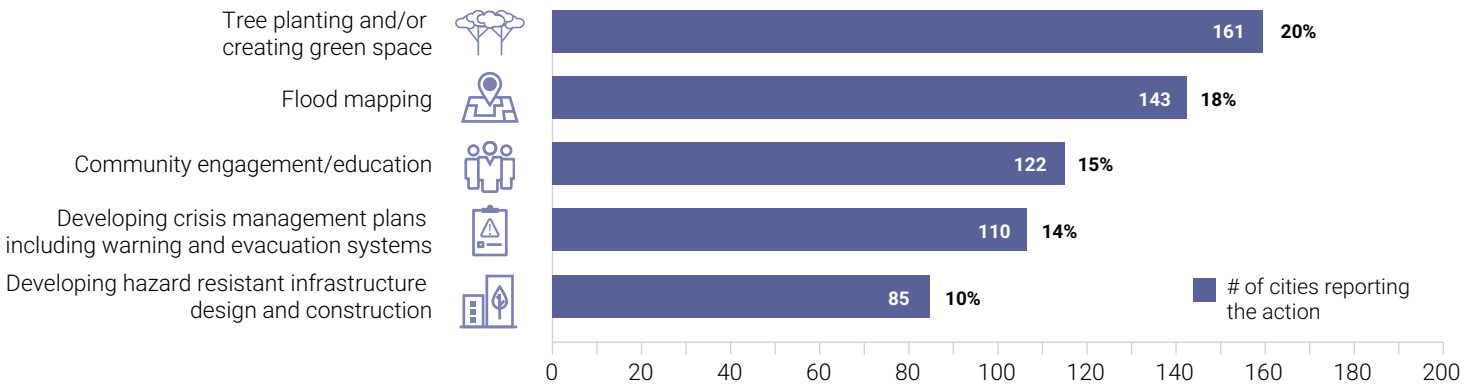
KEEPING POPULATIONS SAFE

93% of cities report that they are facing climate hazards like extreme heat, flooding and rainstorms, putting their people and infrastructure at risk. Almost 70% of the world's population will live in urban areas by 2050¹⁵, meaning that to sustain future economic growth and remain safe and secure places for people to live and work, every city must deliver urgent climate action.

Faced with increasing extreme weather events, the number of cities developing climate risk and vulnerability assessments has increased from 40 in 2011 to 478 in 2020, and the number of cities developing adaptation plans to manage climate risks has risen from 30 in 2011 to 459 in 2020.

More than two-thirds (571) of reporting cities cite climate risks of the highest severity. These include rainstorms (25.5%), heat waves (22%) and droughts (21.6%), all of which are uprooting lives and livelihoods.

Top five actions cities are taking to increase resilience



Addressing barriers to adaptation

Despite the progress cities have made to build resilience through risk assessments and adaptation planning, much more must be done to protect all populations from the worst impacts of climate change. It is city dwellers across the globe who find themselves on the frontlines of climate change, with some of the most vulnerable groups worst affected. For 74% of cities, climate change is increasing risks to already vulnerable populations.

In total, 43% (353) of cities, representing a projected population of over 400 million people by 2030, do not yet have adaptation plans that tackle climate risks.

Joining the dots between climate change and threats to water security, public health and social equality is crucial to effectively address these issues and ensure cities remain resilient, prosperous, and healthy places for generations to come.

If cities are to make progress on building resilience to climate risks, these barriers must be addressed. To succeed, this requires dialogue with funders, companies, national governments and communities.

Top three adaptation barriers faced by cities



25% | 205

report budgetary capacity issues



18% | 150

cite housing issues



17% | 134

report poverty challenges

¹⁵ UN, 2018.

Health and climate change

20% of cities (166) report that they are facing a risk of infectious diseases¹⁶ due to climate change. 26% of these cities (43) say that they were not significantly impacted by this risk before 2020.

Although there is no evidence of a direct connection between climate change and the emergence or transmission of COVID-19, we know that increased pressure on the natural environment may drive the emergence of such diseases in the future¹⁷. In addition, climate change may put added pressure on healthcare systems, impacting our ability to respond to such outbreaks, and to protect vital infrastructure and human lives.

The pandemic has demonstrated the need to build resilience in our cities to endure future shocks and reduce harmful impacts on society. Responding to this need, we are seeing a growing number of cities thinking about the intersection between climate change and infectious diseases.

Snapshot of city risks



93% of cities
are facing significant
climate risks



43% of cities
do not yet have an
adaptation plan



25% of cities
report budgetary capacity
issues as a barrier to adaptation



60% of cities
cite substantive risk to
their water security



The top two services
under threat from
climate change are water
supply and sanitation,
and public health



74% of cities
say climate change is
increasing risks to already
vulnerable populations

¹⁶ Air, vector or water borne.

¹⁷ WHO, 2020.

OPPORTUNITIES ON THE ROUTE TO 2030

Over the past ten years, cities reporting to CDP have shown how ambitious their environmental action can be. Even when faced with complex multinational

crises such as COVID-19, widening social inequality and the impacts of the climate crisis, cities have still made progress to cut emissions and build resilience.

Essential actions cities must take



Set science-based climate targets, which includes an interim target¹⁸



Create and implement a climate action plan to support your target



Focus on the high impact emissions reduction actions for your city, and decarbonize energy grids, building renewable capacity to 50-70% by 2030¹⁹



Undertake a climate risk and vulnerability assessment to identify climate risks and create an adaptation plan to manage them



Build climate change into city master planning



Consider the co-benefits of climate action (e.g. public health and social equality)



Tokyo, Japan

¹⁸ Ibid., SBTN, 2020.

¹⁹ Ibid., McKinsey and C40, 2017.

CDP data shows that taking these actions is helping cities identify opportunities and address climate change more effectively, including:

- ▶ Cities that incorporate sustainability into master planning identify more than twice (2.4x) as many opportunities from addressing climate change as cities that do not.
- ▶ Cities with climate action plans identify twice as many opportunities from addressing climate change as cities that do not. These opportunities include business innovation and additional funding. These cities are also taking five times as many actions to reduce emissions as other cities.
- ▶ As previous CDP research shows, cities with vulnerability assessments are more than twice (2.7x) as likely to report long-term hazards, and are taking almost 6 times (5.7x) the amount of adaption actions compared to those cities that have not conducted vulnerability assessments²¹.
- ▶ As previous CDP research shows, cities citing the co-benefits of their climate action reported 2.5 times more climate actions than cities that did not.

Investment opportunities

In 2020, 422 cities reported 1,142 climate projects which require financing. Collectively these projects cost USD 72 billion.

By working with actors from across the economy, cities can tap into investments that can enable them to realize their climate projects. At present, the top areas where they are seeking finance are transport (16% of projects), renewable energy (12%), energy efficiency/retrofits (12%), water management (12%), and waste management (11%). The costs of water management projects and transport projects were USD 22.6 billion and USD 18.6 billion, respectively.

CDP data shows that cities are already working with the private sector to build capacity. 76% of cities are already working with businesses on sustainability projects or plan to do so in the next two years.

As the world seeks to recover from COVID-19, recovery funds and stimulus packages need to focus on a green and just recovery. There is an opportunity here for cities to access funding and to implement climate projects focused on increasing resilience, protecting the most vulnerable and building an equitable and fair society. If COVID-19 recovery is not sustainable and equitable, we risk locking cities into infrastructure that is not aligned with the UN Sustainable Development Goals and a 1.5°C future.

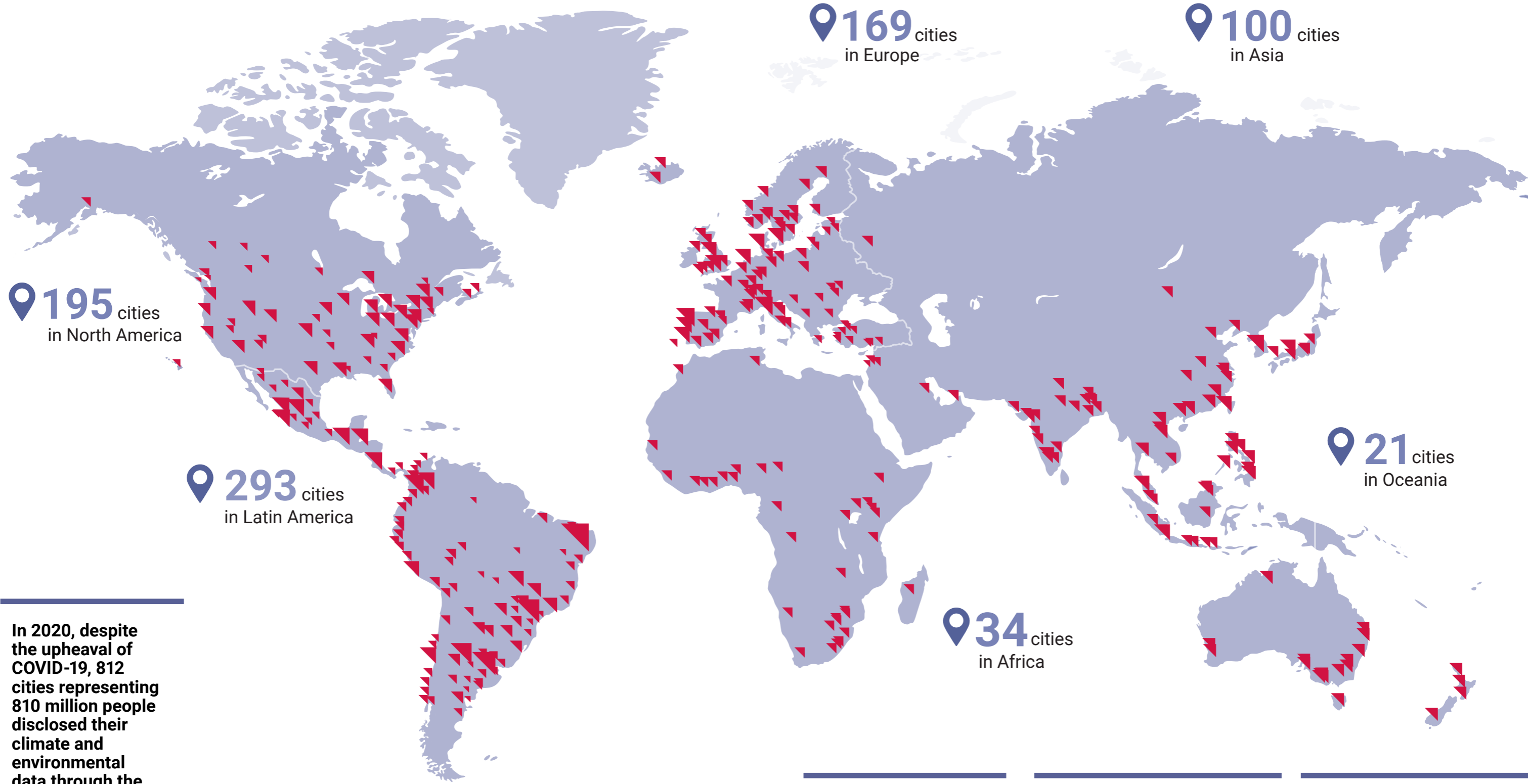


20 Cities at Risk, CDP, 2019.

21 The Co-Benefits of Climate Action: Accelerating City-Level Ambition, CDP, 2020.

CITY CLIMATE ACTION IS GLOBAL AND DIVERSE

Since 2011, cities across the globe have accelerated their action in response to the climate crisis. There has been a 17-fold increase in cities disclosing their climate data – from 48 in 2011 to 812 in 2020.



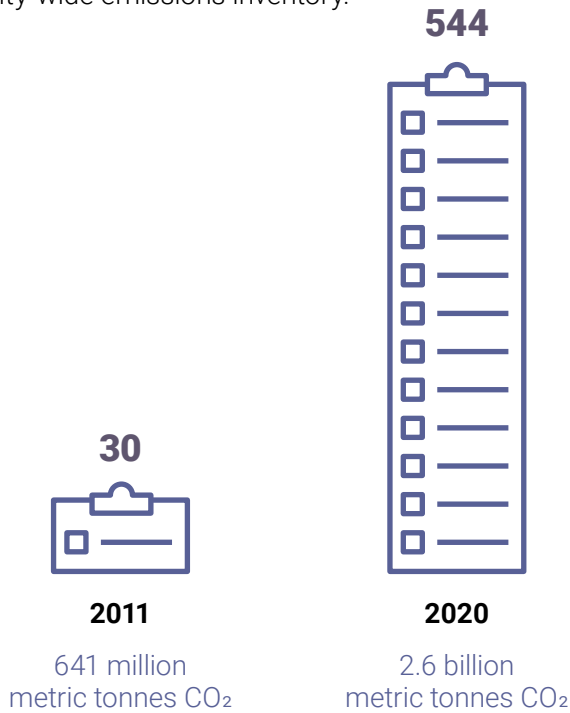
In 2020, despite the upheaval of COVID-19, 812 cities representing 810 million people disclosed their climate and environmental data through the CDP-ICLEI Unified Reporting System.

| | | |
|---|---|---|
|  812 cities |  810 million people |  84 countries |
|---|---|---|

TEN YEARS OF CITY ACTION: THE GLOBAL PICTURE

More cities are measuring their emissions

In the last ten years, we have seen 514 more cities reporting a city-wide emissions inventory.



Cities with city-wide emissions inventories

Cities are also starting to develop consumption-based inventories to track emissions from the production of goods and services made and consumed within their boundaries. With the climate crisis becoming even more urgent, we expect more cities to start measuring and managing these emissions on the road to 2030.



7.5% | 61

of cities reported a consumption-based emissions inventory in 2020

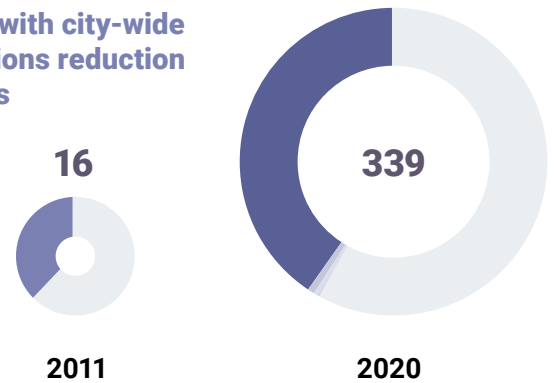
To get to 1.5°C, cities are setting city-wide emission reduction targets

In the last decade the number of city-wide targets being set by cities has increased by 23-fold. However, to effectively monitor progress towards a 1.5°C pathway, cities must set a science-based climate target, which includes an interim target.

Science-based targets²² are measurable and actionable, enabling cities to align their actions with the Paris Agreement and the latest scientific advice from the IPCC²³. By setting a science-based target, cities can be confident that their emissions reduction efforts are aligned with a 1.5°C pathway and that they are making a fair contribution to tackling climate change.

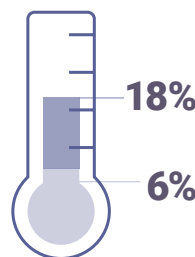
More information on setting a science-based target can be found in the [Science Based Targets Network's](#)

Cities with city-wide emissions reduction targets



45%

of cities reported a city-wide emissions reduction target in 2020



In 2020, **148** cities reported an emissions reduction target that is aligned with a 1.5°C pathway.

Only 52 of these cities have set an interim target for their 1.5°C pathway.

²² Ibid., SBTN, 2020.

²³ Special Report on Global Warming of 1.5°C, IPCC, 2018.

Effective climate action requires a plan

Cities are putting in place the plans and actions required to achieve their climate targets.

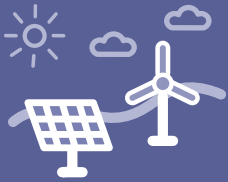


49%

of cities disclosing in 2020 have a climate action plan



Number of cities with a climate action plan



87%

710

of cities have incorporated sustainability into their master plan or are intending to do so in the next two years

Goals and targets cities are incorporating into their master plans



Emissions reduction targets

408 cities



Waste management targets

232 cities



Adaptation targets

276 cities



Energy efficiency targets

225 cities



Renewable energy targets

244 cities



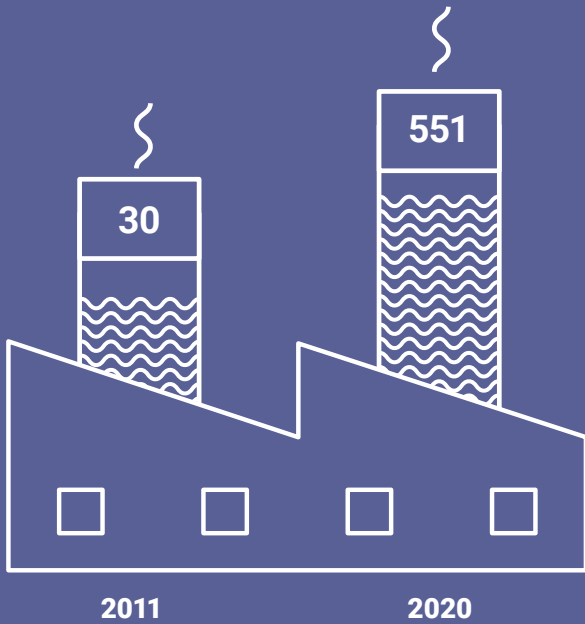
Water security targets

170 cities



Chengdu, China

Urgent action needed to cut emissions



of cities taking emissions reduction actions

Top actions reported



**Energy efficiency/
retrofit measures**

**276 cities
526 actions**



**Low/zero carbon energy
supply generation**

**173 cities
252 actions**



**On-site renewable
energy generation**

**162 cities
245 actions**



**LED/ CFL/ other
luminaire technologies**

**156 cities
172 actions**



**Improve fuel economy
& reduce CO₂ from
motorized vehicles**

**146 cities
200 actions**

Current actions

63.4 million

Estimated annual emissions reductions (metric tonnes CO₂e)

69 million

Annual energy savings (MWh)

26.7 million

Estimated annual emissions reductions (metric tonnes CO₂)²⁴

9 million

Annual energy savings (MWh)

Future actions

Cities identified co-benefits they expected to result from the mitigation actions they reported. Climate action co-benefits are beneficial outcomes that are not directly related to climate change mitigation or adaptation as a result from climate actions.

Top five co-benefits of emissions reduction actions identified by cities



**Improved
resource efficiency**

244 cities



**Shift to more
sustainable behaviors**

215 cities



Improved public health

174 cities



Enhanced resilience

169 cities



**Improved resource
quality**

164 cities

²⁴ The estimated annual emissions reductions and energy savings for future actions are based on all actions cities reported that are in their planning stages and are not currently being implemented. The total figures for future actions are considerably lower than the total figures for current actions because most cities report actions that are currently under implementation.

Transition to renewable energy

Cities are setting and delivering renewable energy targets, signalling to individuals and businesses that they are ready to seize the opportunities offered by the low-carbon transition.



23% | 188

of cities have a renewable energy target



9%

of cities report a target to have at least **70%** of their energy come from renewable sources.



10% | 79

of cities have an electricity mix that is already powered by at least **70%** renewable energy



9% | 70

of cities have an energy efficiency target

Based on actions cities are reporting, below is what we expect their renewable energy potential to be

Current projects



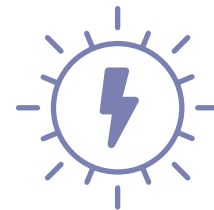
692 million

Annual Renewable Energy (RE) production (MWh)

Future projects

16 million

Annual RE production (MWh)²⁵



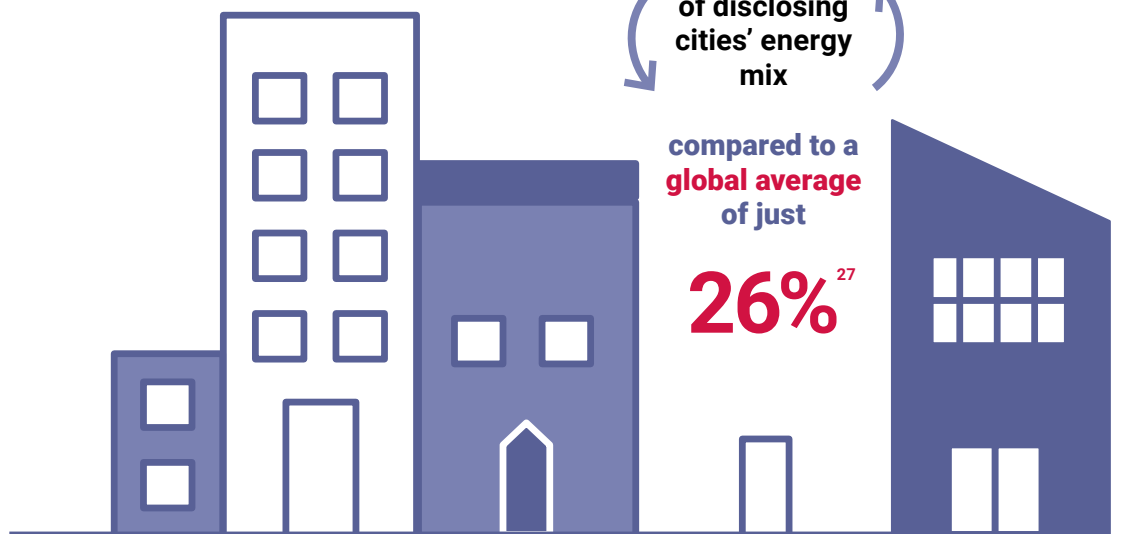
Renewable energy makes up

42%²⁶

of disclosing cities' energy mix

compared to a global average of just

26%²⁷



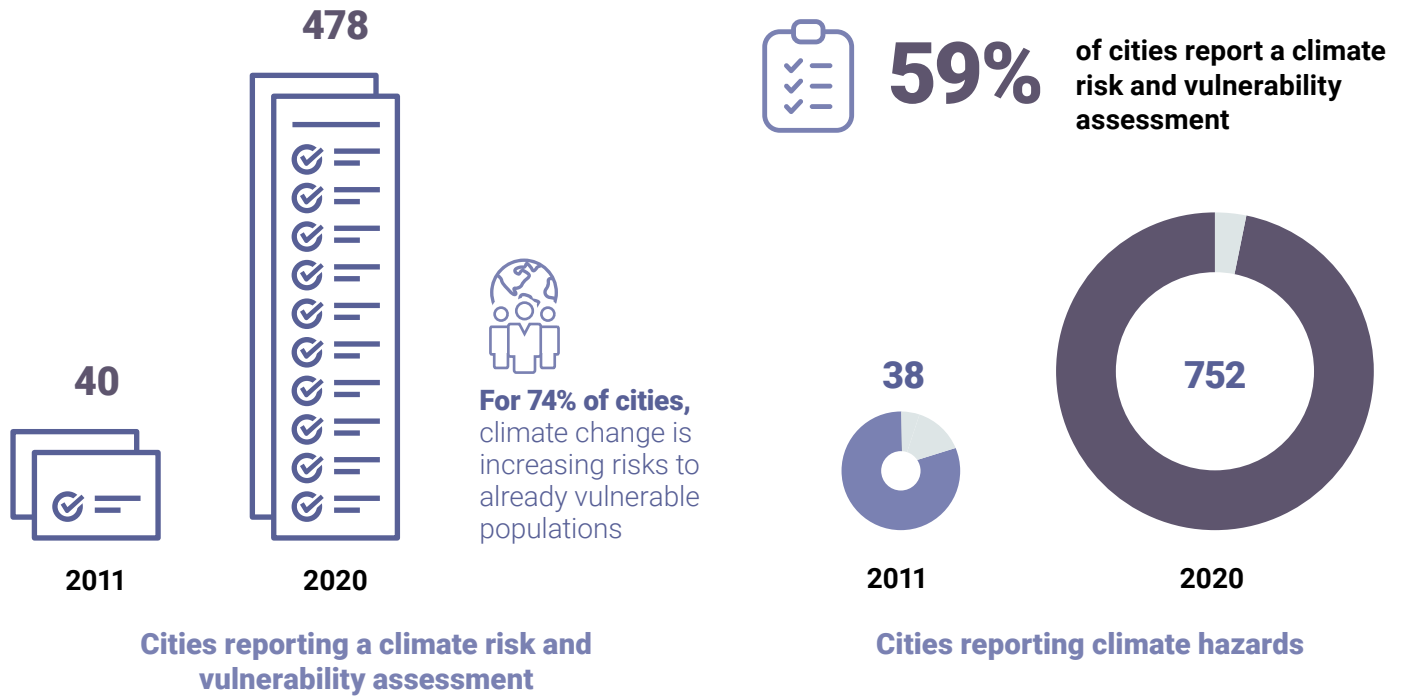
²⁵ The annual renewable energy production for future actions is based on all actions cities reported that are in their planning stages and are not currently being implemented. The total figure for future actions is considerably lower than the total figure for current actions because most cities report actions that are currently under implementation.

²⁶ Note that this statistic includes 124 cities in Latin America where hydropower contributes significantly to the energy mix. Without these Latin American cities, 32.3% of reporting cities' energy mix is made up of renewable energy, which is still higher than the global average.

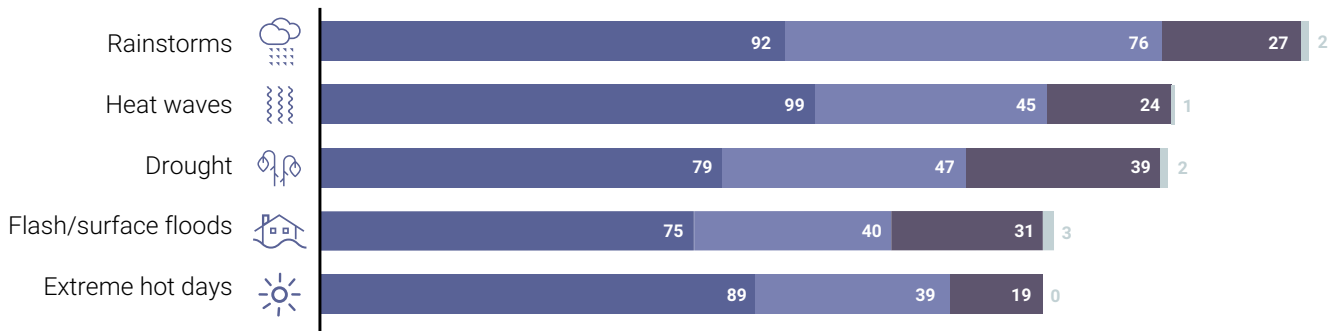
²⁷ Ibid., IEA, 2018.

Understanding the scale of climate risks

From rain storms to extreme hot days, cities and their populations are facing climate-related hazards that are becoming ever more frequent and severe.



Most severe climate hazards cities are reporting



of cities reporting climate-related hazards, broken down by the timescale in which the city expects to experience a change in frequency and intensity of the hazard

■ Immediate
 ■ Short-term (2022-2025)
 ■ Medium-term (2026-2050)
 ■ Long-term (after 2050)

60% | **488**
of cities are facing substantive risks to their water security

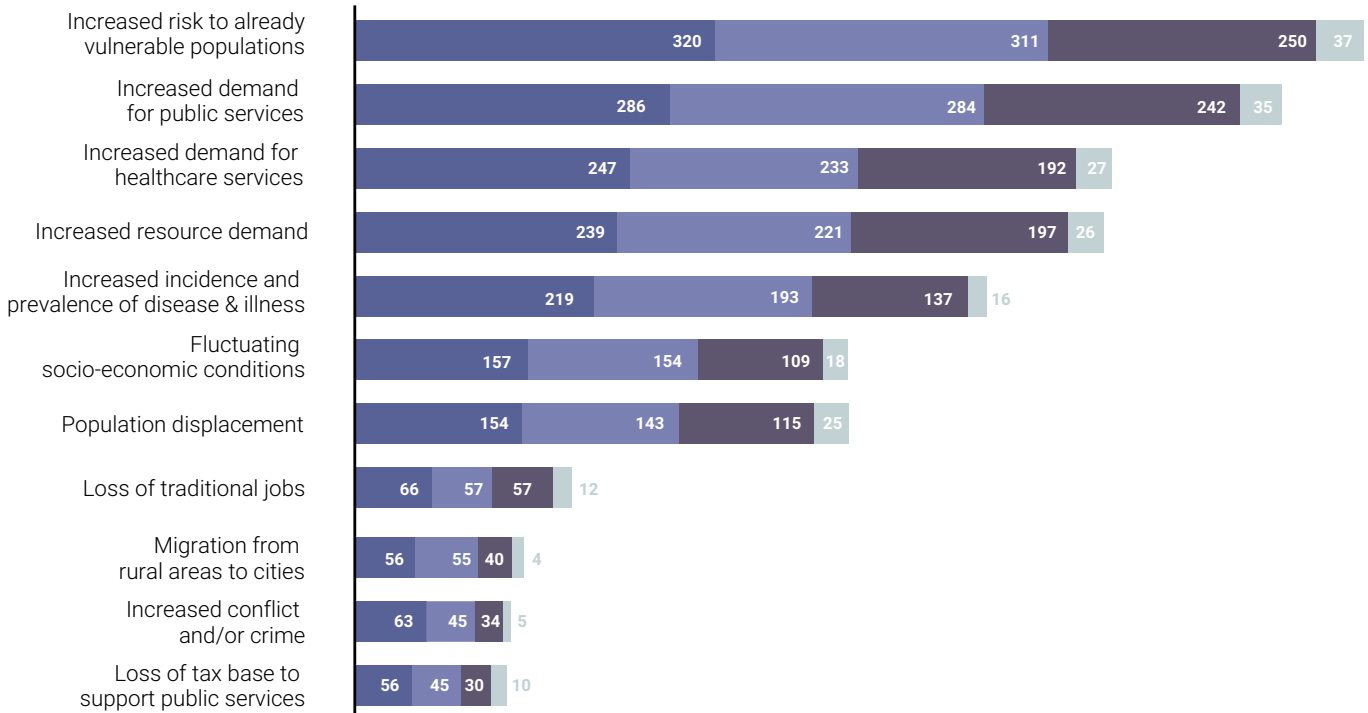
46% | **376**
of cities incorporate water in their climate risk and vulnerability assessments

The impact on people living in cities

Climate change will not only have an impact on the planet but also people. We're already seeing how the climate crisis is upheaving lives and livelihoods, from Hurricane Sandy in 2012 to Cyclone Amphan in 2020.

Our data shows that cities are aware of the impacts of the climate crisis on people and the infrastructure they depend on.

The risks people living in cities are facing



of cities reporting social impacts of climate hazards, broken down by the timescale in which the city expects to experience a change in frequency and intensity of the hazard

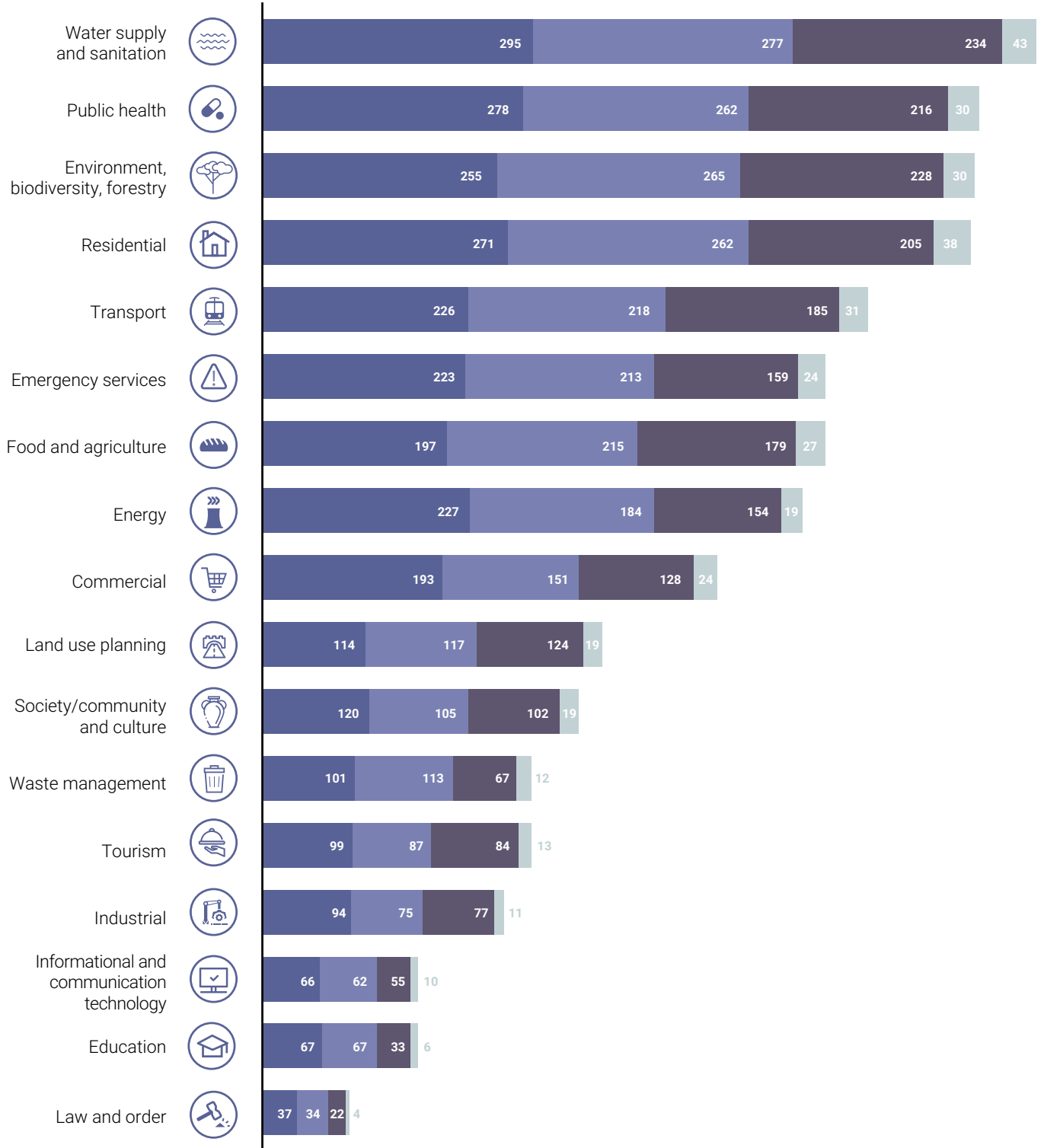


*Please note that cities may be counted multiple times based on timescale of climate hazard



Nairobi, Kenya

Cities' services and assets most affected by climate change

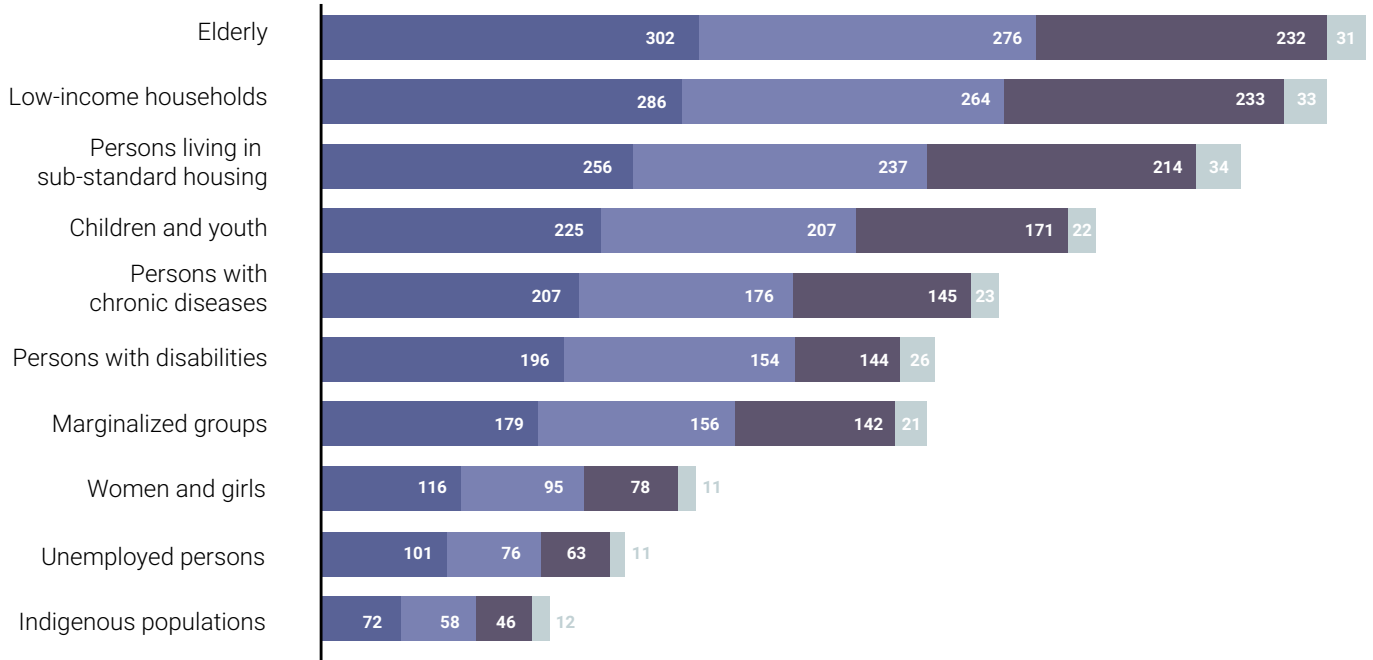


of cities reporting services affected by climate hazards, broken down by the timescale in which the city expects to experience a change in frequency and intensity of the hazard



*Please note that cities may be counted multiple times based on timescale of climate hazard

Populations vulnerable to climate change identified by cities



of cities reporting vulnerable populations affected by climate hazards, broken down by the timescale in which the city expects to experience a change in frequency and intensity of the hazard



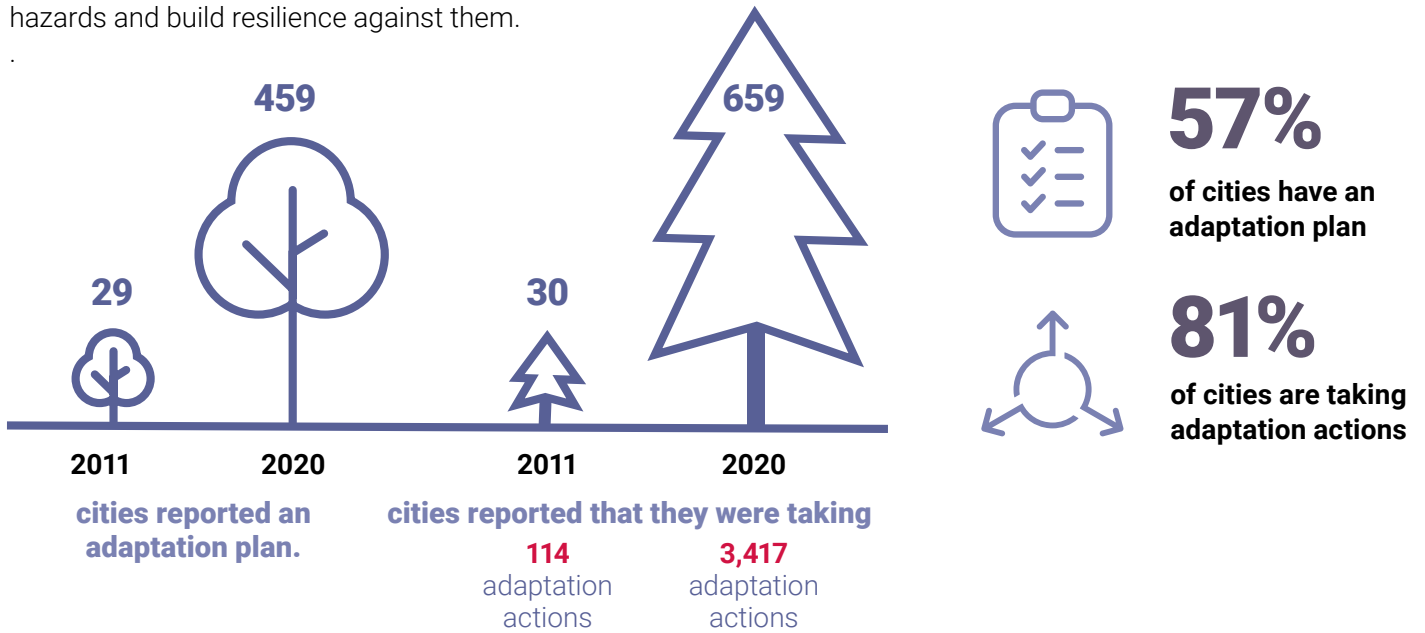
*Please note that cities may be counted multiple times based on timescale of climate hazard



Manchester, UK

To keep populations safe, cities are building climate resilience

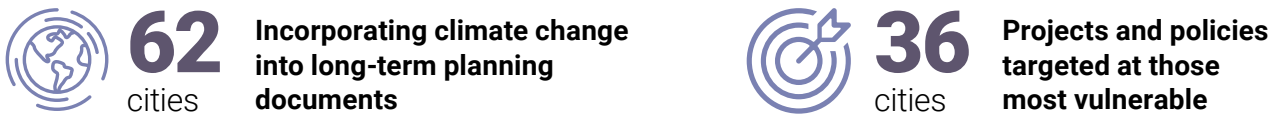
Cities are developing plans to adapt to climate hazards and build resilience against them.



Top five adaptation actions cities implementing



Adaptation actions cities are planning to implement



Top five co-benefits for adaptation actions identified by cities



AFRICA



34 cities

across
19 countries

representing
109 million people



59%

of African cities reported a total of 54 mitigation actions

Top mitigation actions reported by cities

- ▼ Energy efficiency/retrofit measures
- ▼ Improve bus infrastructure, services and operations
- ▼ Building codes and standards
- ▼ Landfill management
- ▼ Carbon emissions reduction from industry
- ▼ Green space and/or biodiversity preservation and expansion



28

African cities are taking 85 adaptation actions

Top adaptation actions reported by cities

- ▼ Flood mapping
- ▼ Tree planting or the creation of green space
- ▼ Incorporating climate change into long-term planning documents
- ▼ Projects and policies targeted at those most vulnerable
- ▼ Crisis management including warning and evacuation systems
- ▼ Flood defences



44% of African cities reported a city-wide emissions inventory



18% of African cities reported a city-wide emissions reduction target



35% of African cities reported a climate action plan



65% of African cities reported an adaptation plan

Dakar, Senegal

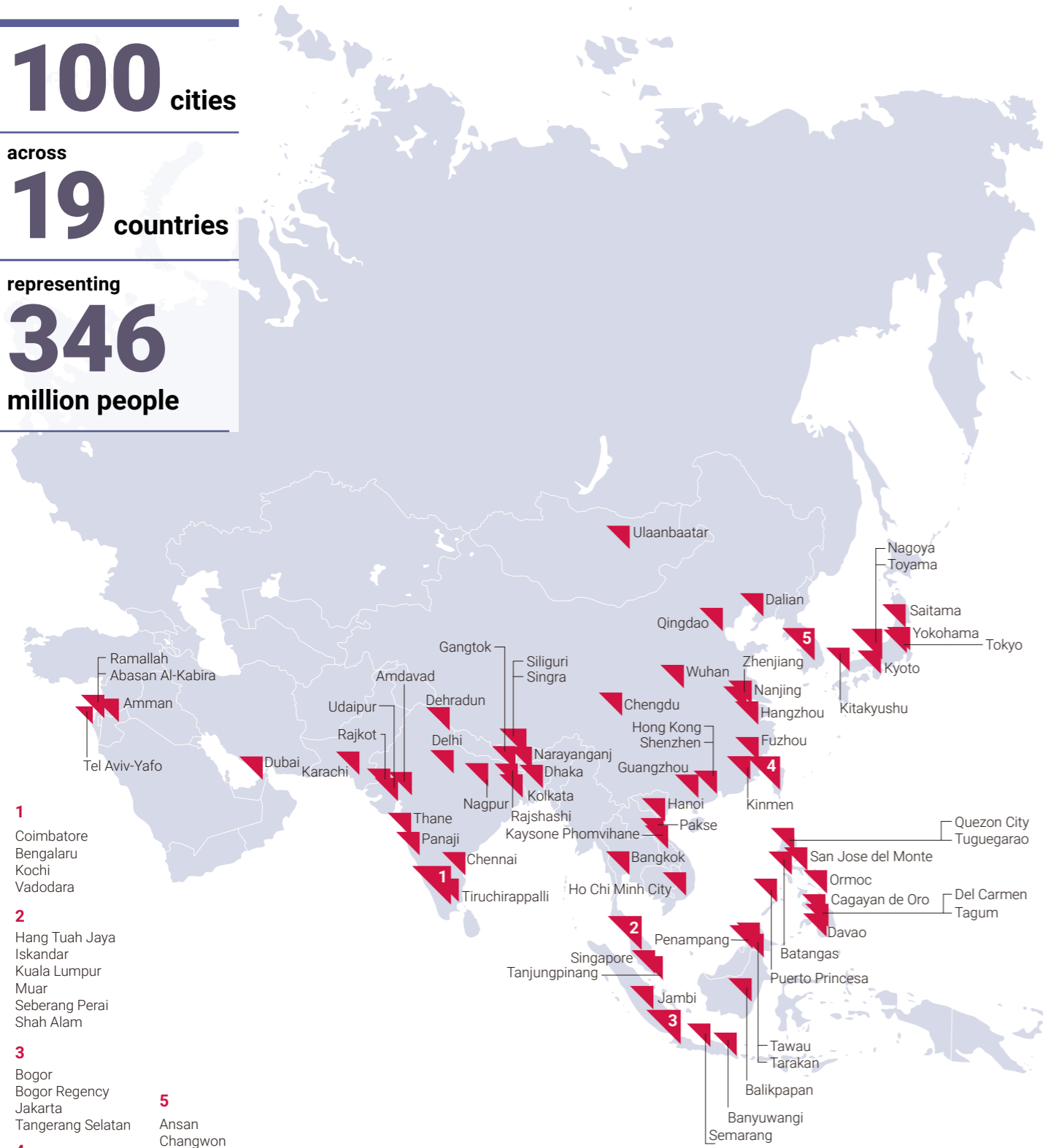
Turning an invasive plant species into a nature-based solution

To cut emissions, Dakar, capital city of Senegal, is focusing its attention on its buildings, and is using the invasive plant *typha domingensis*, in a new innovation. To improve its heritage buildings' energy efficiency and provide better thermal comfort to its people, Dakar is harnessing this plant as a natural form of insulation. In line with [Senegal Energy Efficiency Program](#), which aims to improve energy efficiency and reduce Greenhouse gas emissions (GHG) emissions in the building sector, Dakar has embarked on a pilot to showcase and trial this bio-climatic technology at the Hospital of Geriatrics and Gerontology of Ouakam to make it a place of ideal and safe thermal comfort for the elderly patients. This climate action is part of the city's nature-based solution for reducing the energy consumption of its buildings and related costs whilst also cutting emissions. Cities across the globe are working with nature to build safe, secure and zero emissions space for their populations, and Dakar demonstrates just how closely the two can work in sync.

100 cities

across
19 countries

representing
346
million people



64%

of Asian cities reported a total of 458 mitigation actions

Top mitigation actions reported by cities

- Energy efficiency/retrofit measures
- On-site renewable energy generation
- Improve fuel economy and reduce CO₂ from motorized vehicles
- LED/ CFL/ other luminaire technologies
- Low or zero carbon energy supply generation
- Recycling or composting collections and/or facilities



75

Asian cities are taking 346 adaptation actions

Top adaptation actions reported by cities

- Crisis management including warning and evacuation systems
- Tree planting or the creation of green space
- Flood defences
- Flood mapping
- Projects and policies targeted at those most vulnerable
- Community engagement



71% of Asian cities reported a city-wide emissions inventory



44% of Asian cities reported a city-wide emissions reduction target



48% of Asian cities reported a climate action plan



60% of Asian cities reported an adaptation plan

Penampang, Malaysia

Working to cut more than their fair share of emissions

In line with the *Kerajaan Persekutuan* (National Government) of Malaysia's NDC, Penampang, home to over 145,000 people, is working to cut the intensity of its emissions by 45% by 2030. The city has also set its sights on meeting the next, and decisive deadline for the planet and its people – net zero emissions by 2050. To deliver, Penampang is planning to invest in waste-to-energy (WtE) technologies, converting sludge, cooking oil and biogas into energy for its population and businesses. This is an innovative move towards the city becoming “a modern, sustainable and competitive economic hub”, and a bold one too – 45% of Malaysia's energy mix is made up of coal, and a further 37% natural gas. What's more, Penampang is the first city in Southeast Asia to report net zero ambition, taking accountability for more than their fair share of emissions.

EUROPE

- 1** Århuskøbing
Copenhagen
Egedal
Fredensborg
Gladsaxe
Helsingør
Hoeje-Taastrup
Hørsholm
Hvidovre
Jammerbugt
Middelfart
Odsher
Roskilde
Sønderborg
- 2** Bradford
Greater Manchester
Kirklees
Manchester
- 3** Coventry
Birmingham
Leicester
Nottingham
West Midlands
Wolverhampton
- 4** Cardiff
Bristol
Bath and
North East Somerset
Somerset West
and Taunton
- 5** London
Richmond
Slough
Wandsworth
- 6** Cambridge
Essex
Southend on Sea
- 7** Amsterdam
Alkmaar
Rotterdam
The Hague
- 8** Ferrara
Padova
Venezia
- 9** Águeda
Amarante
Braga
Fafe
Guimarães
Ovar
Porto
Valongo
Viseu
- 10** Barreiro
Cascais
Lisbon
Mafra
Sintra
Torres Vedras



169 cities **28** countries **109** million people

²⁸ Please note that the data on this page represents the geographical area of Europe. For data representing only the 27 EU member states & EFTA countries, please see [here](#).

75% of European cities reported a total of 917 mitigation actions

Top mitigation actions reported by cities

- ▶ Energy efficiency/retrofit measures
- ▶ Low or zero carbon energy supply generation
- ▶ Improve fuel economy and reduce CO₂ from motorized vehicles
- ▶ LED/ CFL/ other luminaire technologies
- ▶ On-site renewable energy generation
- ▶ Improve fuel economy and reduce CO₂ from bus and/or light rail

148 European cities are taking 781 adaptation actions

Top adaptation actions reported by cities

- ▶ Flood mapping
- ▶ Tree planting or the creation of green space
- ▶ Incorporating climate change into long-term planning documents
- ▶ Crisis management including warning and evacuation systems
- ▶ Community engagement

- 72%** of European cities reported a city-wide emissions inventory
- 64%** of European cities reported a city-wide emissions reduction target
- 66%** of European cities reported a climate action plan
- 74%** of European cities reported an adaptation plan

Barcelona, Spain

Proving that renewables can, and must work for all

Barcelona is just one European city working to be powered by 100% renewable energy. In 2018, the Catalan capital took the responsibility of powering its streets, homes and offices into its own hands. To become self-sufficient, and provide energy that is “clean, affordable, and democratic for all” the city established Barcelona Energia (BE) the public company purchasing renewable energy direct from source. First, BE powered Barcelona City Council’s buildings and facilities, and, in 2019 it started providing its services to populations. Finally, in 2020 it began servicing the city’s businesses too. Fast forward to 2021, and the public company is providing clean and accessible energy to 3,500 homes and businesses across the city, and this is only set to increase to new heights: in 2020 alone, BE saw a huge 99% in growth. Beyond emissions cuts, the benefit to populations is clear – customers save at least 85€ annually by shifting to Barcelona Energia, and can have a greater stake in crucial decision making processes by joining BE’s User Council. In this way, the capital and its energy company are fully transparent with populations, enabling them to play an active part in driving the transition to 100% renewable energy.

LATIN AMERICA

Ayto. = Ayuntamiento
Munic. = Municipalidad
Mpio. = Municipio
PSMP = Prefeitura



across

293 cities

representing

14 countries

145 million people



56%

of Latin American cities reported a total of 1,192 mitigation actions

Top mitigation actions reported by cities

- Recyclables and organics separation from other waste
- Energy efficiency/retrofit measures
- LED/ CFL/ other luminaire technologies
- Recycling or composting collections and/or facilities
- On-site renewable energy generation
- Green space and/or biodiversity preservation and expansion



212

Latin American cities are taking 998 adaptation actions

Top adaptation actions reported by cities

- Tree planting or the creation of green space
- Flood mapping
- Community engagement
- Hazard resistant infrastructure design and construction
- Crisis management including warning and evacuation systems



54%

of Latin American cities reported a city-wide emissions inventory



9%

of Latin American cities reported a city-wide emissions reduction target



27%

of Latin American cities reported a climate action plan



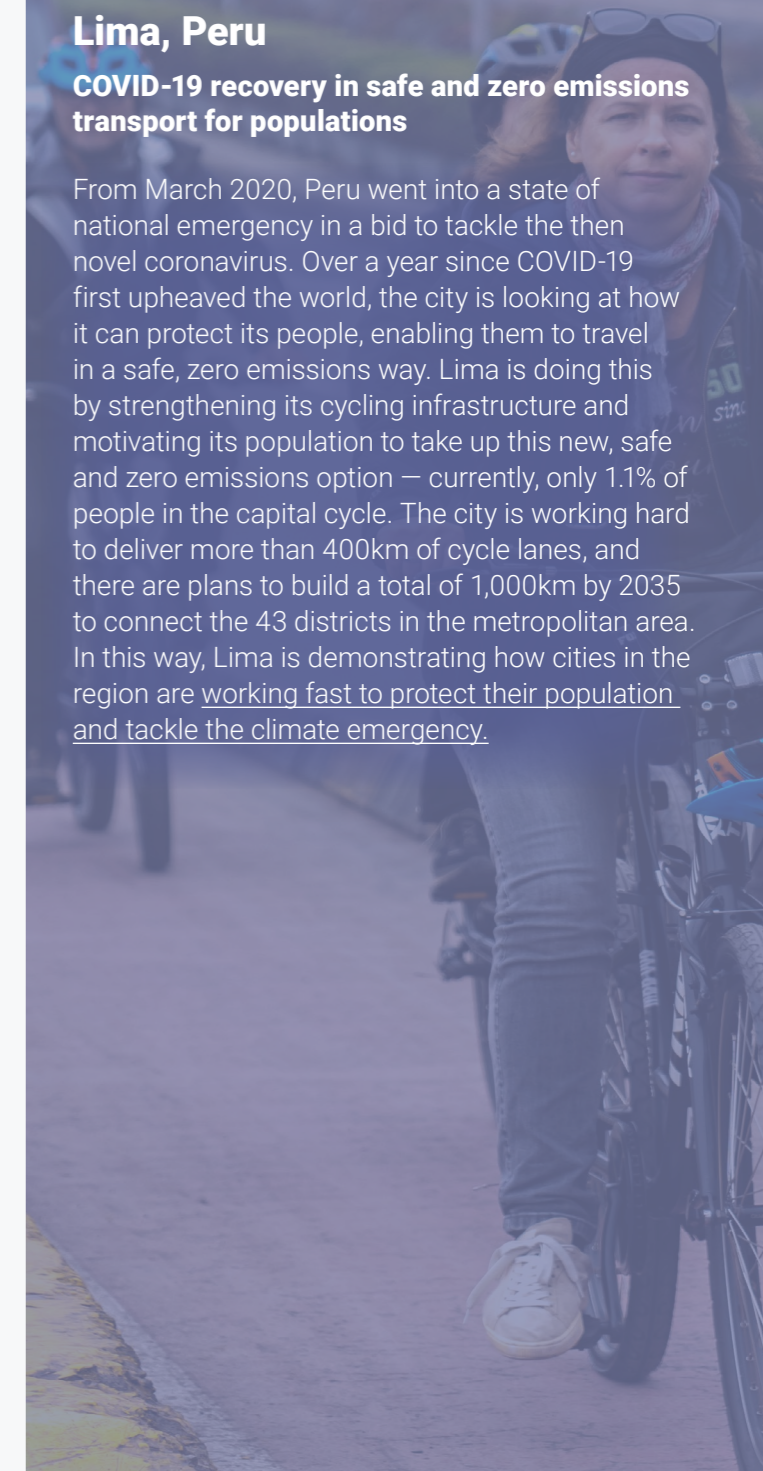
39%

of Latin American cities reported an adaptation plan

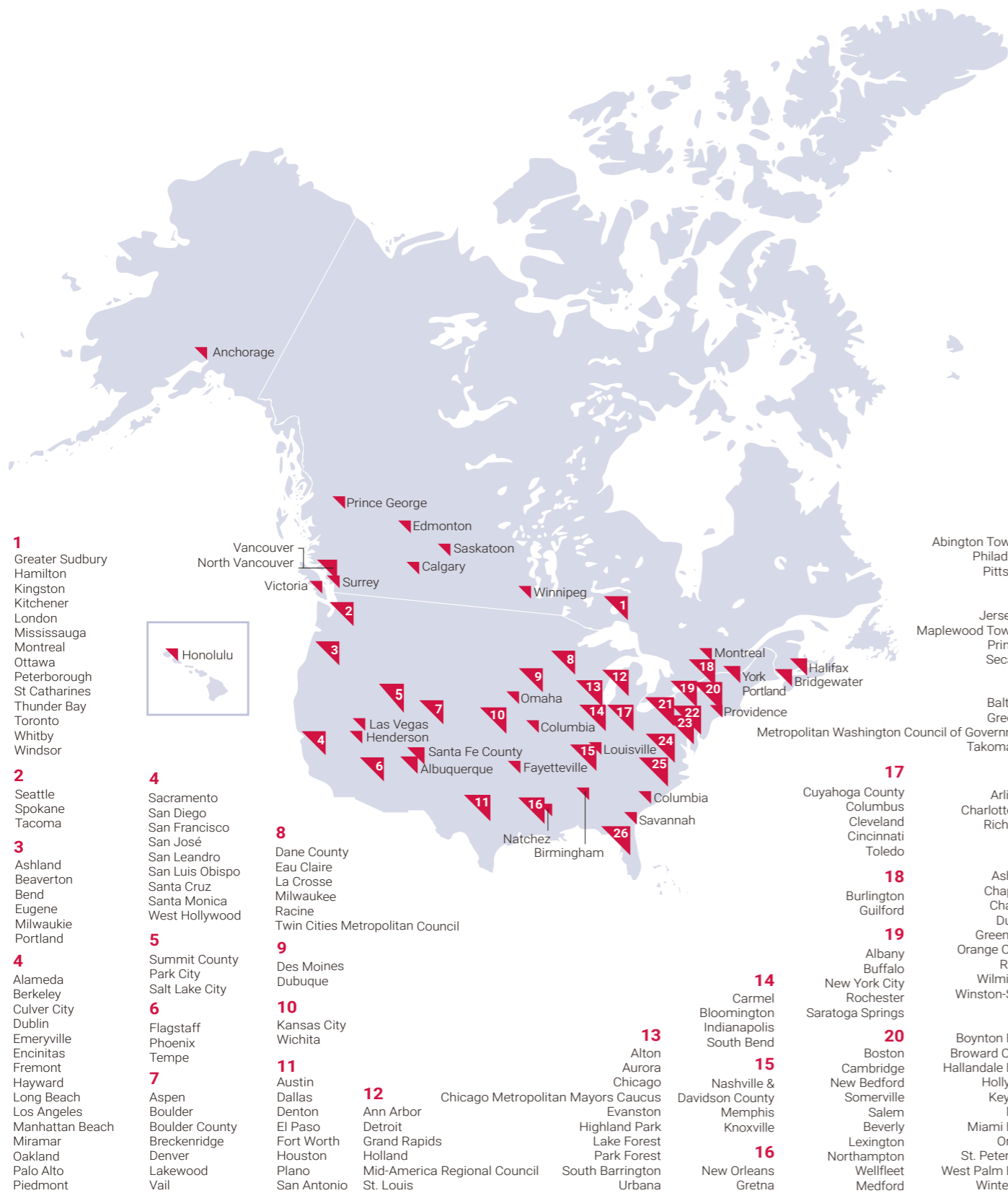
Lima, Peru

COVID-19 recovery in safe and zero emissions transport for populations

From March 2020, Peru went into a state of national emergency in a bid to tackle the then novel coronavirus. Over a year since COVID-19 first upheaved the world, the city is looking at how it can protect its people, enabling them to travel in a safe, zero emissions way. Lima is doing this by strengthening its cycling infrastructure and motivating its population to take up this new, safe and zero emissions option — currently, only 1.1% of people in the capital cycle. The city is working hard to deliver more than 400km of cycle lanes, and there are plans to build a total of 1,000km by 2035 to connect the 43 districts in the metropolitan area. In this way, Lima is demonstrating how cities in the region are working fast to protect their population and tackle the climate emergency.



NORTH AMERICA



195 cities **2** countries **97** million people

81% of North American cities reported a total of 1,188 mitigation actions

Top mitigation actions reported by cities

- Energy efficiency/retrofit measures
- Building codes and standards
- On-site renewable energy generation
- Low or zero carbon energy supply generation
- Improvement of fuel economy and reduction of CO₂ from motorized vehicles

180 North American cities are taking 1,112 adaptation actions

Top adaptation actions reported by cities

- Flood mapping
- Community engagement
- Storm water capture systems
- Tree planting or the creation of green space
- Incorporating climate change into long-term planning

- 82%** of North American cities reported a city-wide emissions inventory
- 73%** of North American cities reported a city-wide emissions reduction target
- 69%** of North American cities reported a climate action plan
- 63%** of North American cities reported an adaptation plan

Knoxville, USA

Weatherization programs cut carbon pollution, save money and improve public health

Knoxville is Tennessee's third most populous city with over 186,000 people and roughly 5% of people living in the city are unable to pay their utility bills, putting them at risk. In response, the city and community partners have been working to weatherize many of the older, less efficient homes. Much of this work comes from the city's [Smarter Cities Partnership](#). This came to a full head in 2015 with the launch of Knoxville Utilities Board's (KUB) Round It Up programs and the Knoxville Extreme Energy Makeover program, which was a joint partnership with Tennessee Valley Authority (TVA), KUB, the Knoxville-Knox County Community Action Committee, the Alliance to Save Energy, and the City. Since 2015, these programs have resulted in investments in excess of USD 17 million to weatherize low-to-moderate income homes. More than 1,800 households have benefitted, with families seeing a reduction of USD 15-20 monthly in their utility bills. The partnerships have led to additional community resources to advance this valuable work through new programs like TVA's [Home UpLift](#) program. These city and utility partnerships help lower-income residents and ratepayers afford to live comfortably in their home, improve indoor air quality, and reduce community carbon emissions. To quantify this impact, Knoxville and partners have conducted studies on cost savings and health benefits of the program. And there is a clear one — each home costs around USD 8,000 to upgrade — compared to around USD 20,000 for a three-night hospital stay for an asthmatic child.

OCEANIA



21 cities **across** **2** countries **representing** **4.3** million people

67% of Oceanian cities reported a total of 115 mitigation actions

Top mitigation actions reported by cities

- Energy efficiency/retrofit measures
- Low or zero carbon energy supply generation
- Recyclables and organics separation from other waste
- LED/ CFL/ other luminaire technologies
- Improve fuel economy and reduce CO₂ from motorized vehicles

16 Oceanian cities are taking 95 adaptation actions

Top adaptation actions reported by cities

- Flood mapping
- Community engagement
- Sea level rise modelling
- Heat mapping and thermal imaging
- Storm water capture systems

- 90% of Oceanian cities reported a city-wide emissions inventory
- 71% of Oceanian cities reported a city-wide emissions reduction target
- 67% of Oceanian cities reported a climate action plan
- 76% of Oceanian cities reported an adaptation plan

Adelaide, Australia

Building resilience to protect populations and mammalian climate refugees

The City of Adelaide, capital of South Australia, has been working to cut emissions and tackle climate risks for many years — the most significant of which are increased temperatures, and extreme summer heat, combined with overall drying. So extreme are these risks that in January 2019, a new daytime record temperature of 46.6°C was set. As well as humans, another species impacted is the Grey Headed Flying Fox, a threatened native megabat native to Australia originally from hundreds of kilometers away on the east coast. However, urban sprawl, habitat destruction, bushfires, and drought, exacerbated by climate change, have contributed to their displacement. The City considers them climate refugees that have chosen the city parklands as a new home, and today there are around 26 thousand flying foxes in central Adelaide since they first settled in 2010.

On hot days, bats can come into close contact with humans by moving down trees and reaching lower ones to access water, sometimes falling from the canopy. Many young bats die in extreme temperatures, and the population can sadly lose thousands in a single day. What's more, the flying foxes can carry diseases which pose a health hazard to people. To tackle this, Adelaide is taking actions such as monitoring heat and humidity around the bat camp, educating the community on public health risks, using on-ground sprinklers for cooling, training and immunization for bat retrieval crews, and coordinated patrols in extreme weather. During heatwaves, the city establishes temporary vet stations to triage and treat bats, engaging the public via social media to ensure they know how to manage risks and support the city's plans. The city knows it must keep its people safe as risks to their health grow, and is working with partners to install sprinklers in the tree canopy to keep the bats cool and safe from falling, and people on the ground safe from the risk of illness.

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A special thank you to the following team members who are no longer at CDP: Abril Carranza, Anvita Dulluri, Carlos Soto, Catherine Higham, Gracia Ting Mei, Sarina Hotchandani, Shuning Yow, Simeran Bachra, Tallulah Cherry, and Zachary Joseph

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The data for this report was collected in partnership by CDP and ICLEI – Local Governments for Sustainability.

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