

WHO'S ACTING ON CLIMATE CHANGE?

SUBNATIONAL AND NON-STATE GLOBAL CLIMATE ACTION

NOVEMBER 2017



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Prepared by the Yale Data-Driven Environmental Solutions Group¹

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INTRODUCTION

Cities, states, and regions (“sub-national” actors), along with businesses, investors and civil society organizations (“non-state” actors) are pledging climate action in ever-growing numbers. These contributions, collectively referred to as “global climate action,” could accelerate the world’s progress towards the Paris Agreement’s goals of keeping global temperature rise well below 2 C, pursuing a 1.5 C temperature limit, and achieving a carbon neutral world beginning in 2050. An 11 to 13.5 gigatonne carbon dioxide equivalent gap currently separates the world’s current emissions trajectory from a least-cost pathway that would keep the 2 C goal within reach.¹ Subnational and non-state action can complement, catalyze, and reinforce national climate action, helping governments go further and act faster to reduce emissions. This groundswell of climate action may also make up for the absence of strong federal leadership. President Trump’s announced intent to withdraw the United States from the Paris Agreement, for instance, triggered an outpouring of climate action commitments from states, cities, companies, civil society organizations and individual citizens.²

A deeper understanding of this sea of climate action commitments will be vital to realizing its potential. With it, national governments can adjust their own goals or implementation plans to build on gains made by local leaders, and introduce policies that enable additional action. Cities, states, companies and investors can identify and seek advice from peers pursuing innovative mitigation, adaptation, or financing strategies. Tracking these commitments’ progress will be vital to their credibility, enabling the global community to account for their contribution to global and national goals.

Covering 14,548 total actors making nearly 100,000 commitments, this analysis captures the current scale of global climate action and synthesizes commitments from many of the platforms and organizations that have helped to galvanize and track this groundswell of climate action. It aims to move the global community a step closer to understanding the scale of global climate action.

1 UNEP (2017). The Emissions Gap Report 2017. United Nations Environment Programme (UNEP), Nairobi. Available: <http://www.unenvironment.org/resources/emissions-gap-report>.

2 Hsu et al. (19 September 2017). Mapping American Climate Action: Who’s Taking Charge of the Paris Agreement. Yale Data-Driven Environmental Solutions Group. Available: <http://datadriven.yale.edu/climate/mapping-american-climate-action-whos-taking-charge-of-the-paris-agreement/>.

This report draws from the following data providers: ³

- Non-state Actor Zone for Climate Action (NAZCA), which includes commitments from CDP, Carbonn Climate Registry, The Climate Group, Investors on Climate Change, UN Global Compact, Global Covenant of Mayors for Climate and Energy, Climate Bonds Initiative, and UNEP-DTU Climate Initiatives Platform.
- C40 Cities for Climate Leadership
- Carbonn Climate Registry
- CDP
- Climate Alliance
- Climate Initiatives Platform
- Climate Mayors
- Compact of Mayors
- Compact of States and Regions
- Global Covenant of Mayors for Climate and Energy
- The European Union Covenant of Mayors
- Pivot Goals
- RE100
- Second Nature
- Under 2 Coalition
- We Mean Business
- We Are Still In/America's Pledge

3 All data reflect the most recent available up to September 2017.

KEY FINDINGS

Nearly **100,000 (96,432)** climate actions from 14,548 subnational and non-state actors have been recorded, including:

- 7,378 cities from 133 countries have pledged action on climate change. These cities represent 16.9 percent of the global population.
- More than two-thirds (212 cities) of the top Global 300 Cities by GDP Purchasing Power Parity (GDP PPP) are committed to climate action, representing \$36.8 trillion USD.
- 245 regions from 42 countries representing 17.5 percent of the global population have committed to act on climate change.
- 6,225 companies and investors from 120 countries, representing more than \$36.5 trillion USD in revenue, have made climate commitments. Nearly half (995) of the world's largest companies, representing \$27.06 trillion USD, comprise three-quarters of this total revenue.
- 39 investors are making renewable energy commitments in wind, solar, bioenergy, hydropower, ranging from \$10 million to \$5 billion USD.
- 34 of the 57 largest banks,⁴ representing \$3.1 trillion USD in market capitalization, have committed to climate action.
- 700 colleges and universities in the United States, with a total student population nearing 1 million and a collective endowment of over \$250 billion USD, have committed to climate action.
 - Of these, 589 U.S. colleges and universities are generating 519,762,051 kilowatt hours of renewable electricity, enough to power 41,768 homes in the U.S. for a year. Some have achieved deep emissions reductions, such as the College of the Atlantic in Maine, which has reduced emissions 190 percent from 2008 levels and has committed to be carbon neutral.
- 5,058 community or region-wide emission reduction commitments have been made by 2,001 cities and 44 regions.

⁴ World's Largest Banks 2017 (by market capitalization, \$USb). Retrieved from: <http://www.relbanks.com/worlds-top-banks/market-cap> (accessed 1 November 2017).



CITIES AND REGIONS

CITIES AND REGIONS ⁵

7,378 cities and 245 regions have pledged climate actions.

POPULATION

- 7,378 cities are making individual and cooperative commitments, representing 16.9 percent of the global population (1.29 billion).
- 245 regions are making individual and cooperative commitments, representing 17.5 percent of the global population (1.33 billion).

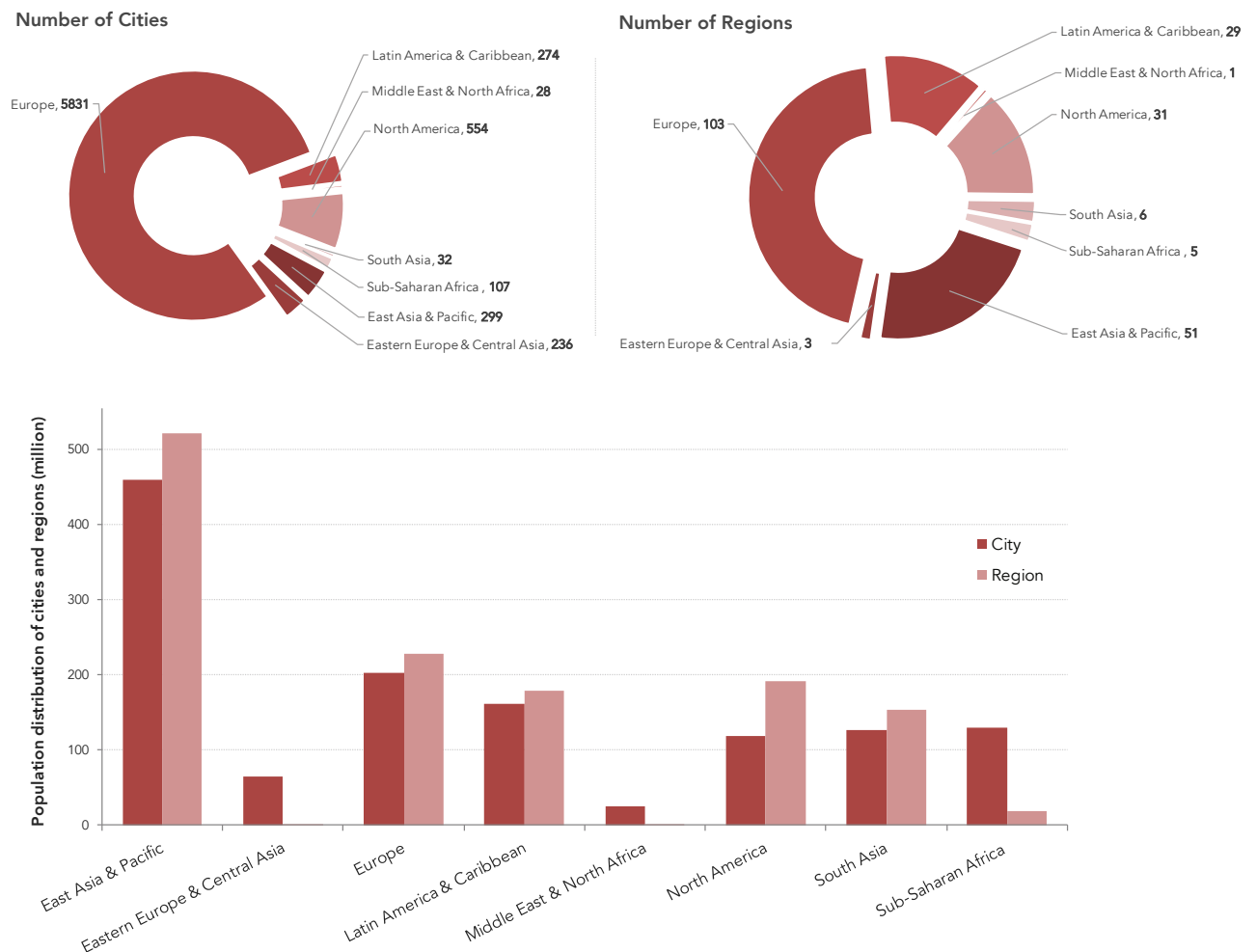


Figure 1. Regional population distribution of cities and regions taking global climate action.

⁵ Population, area and other geographic information was derived from wikipedia.com if these data were not included in the original data source.

GEOGRAPHIC DISTRIBUTION OF THE CITIES AND REGIONS ENGAGED IN CLIMATE ACTION, AND THEIR POPULATION:

East Asia & Pacific: 299 cities and 51 regions

- City: 458.4 million
- Region: 521.2 million

Eastern Europe & Central Asia: 236 cities and 3 regions

- City: 64.9 million
- Region: 1.4 million

Europe: 5,831 cities and 103 regions

- City: 201.8 million
- Region: 228.5 million

Latin America & Caribbean: 274 cities and 29 regions

- City: 161.0 million
- Region: 179.3 million

Middle East & North Africa: 28 cities and 1 region

- City: 25.4 million
- Region: 0.84 million

North America: 554 cities and 31 regions

- City: 118.8 million
- Region: 191.2 million

South Asia: 32 cities and 6 regions

- City: 127.2 million
- Region: 153.7 million

Sub-Saharan Africa: 107 cities and 5 regions

- City: 129.3 million
- Region: 18.5 million

The range of populations from participating cities and regions stretches from Isuerre, Spain (population: 36) to Karachi, Pakistan (population: 25,000,000).

TRENDS IN CITY AND REGION CLIMATE ACTION COMMITMENTS

- Subnational actors are committing to a range of near-, mid- and long-term actions:
 - 1,959 actors have set near-term (pre-2020 action) targets
 - 65 have set mid-term (mid-2020 to 2030) targets
 - 114 actors have set long-term (post-2030) targets
- Nearly 2,001 cities and 43 regions have made 5,058 community or region-wide emission reduction commitments.
- Subnational actors have made more than 5,639 commitments on renewable energy, including:
 - Commitments to install approximately 2 terawatts of renewable energy, roughly equivalent to the world's total renewable energy capacity in 2016.⁶ Seoul, South Korea, pledges to install 610 megawatts of renewable electricity capacity by 2020.
 - Commitments to increase the percentage of renewable energy in the final energy mix, ranging from 1 to 100 percent, with a median increase of 20 percent. The Swedish municipality of Saffle's goal is to increase the share of renewables in the final energy mix of the community to 100 percent by 2030. Santa Cruz County, California shares a similar goal and has its target year set at 2035.
 - Commitments to increase the percentage of renewable energy in existing portfolios range from 4 to 100 percent, with a median goal of 50 percent.
- Subnational actors have made 4,285 energy efficiency commitments, from 238 cities and 42 regions. 430 of them are short-term (pre-2020) goals, 138 are medium-term (mid-2020 to 2030) goals and 90 are long-term (post-2030) goals.
 - The median energy efficiency improvement target is 20 percent. Asan, South Korea even has a target to improve energy efficiency of the community by 206 percent by 2025.

⁶ Renewable Energy Policy Network for the 21st Century (REN21). (2017). Renewables 2017 Global Status Report. Available: http://www.ren21.net/wp-content/uploads/2017/06/17-8399_GSR_2017_Full_Report_0621_Opt.pdf.

- There are a total of 8,741 transport-related commitments, made by 313 cities and 25 regions. Targeting electrical vehicles is a popular action 45 actors share.
- 285 cities and 25 regions have adopted a total of 4,814 goals in the building sector. 141 cities and regions implement building energy efficiency measures while another 32 are using building standards to achieve their building sector goals.
- 67 cities and regions have adopted carbon neutrality goals. Of those with clear timelines:
 - 28 include short-term (pre-2020) targets. For example, Canberra, Australia aims to generate 100 percent of its electricity from large-scale renewables by 2020, which would lead to a 40 percent reduction in greenhouse gas emissions, a step towards its goal of achieving net zero emissions.
 - 8 include mid-term (mid-2020 to 2030) targets: The Austrian State of Carinthia aims to achieve carbon-neutral and nuclear power free electricity and heat production by 2025.
 - 8 include long-term (post-2030) targets. The German State of North Rhine-Westphalia, where UNFCCC COP-23 Climate Conference is currently being held, has a goal for government operations to go carbon-neutral by 2030.
- 142 cities and 28 regions have made a total of 1,499 forestry-related commitments. Tainan, Taiwan's climate actions include wetland protection and recovery as well as tree planting.



COMPANIES

COMPANIES ⁷

6,225 companies and investors from 120 countries, representing \$36.5 trillion USD in revenue, have committed to climate action. Nearly half (995) of the largest companies (defined as the 2,127 companies on the Forbes 2000⁸ and Global 500⁹ lists), representing \$27.06 trillion USD, comprise three-quarters of this total revenue.

Of the 907 Forbes 2000 companies:

- 162 of 581 Forbes 2000 companies in the Financials sector have made climate commitments.
- 148 of the 262 Forbes 2000 companies in the Industrials sector have made climate commitments.
- 126 of the 266 Forbes 2000 companies in the Consumer Discretionary sector have made climate commitments.

41 of the 90 fossil fuel and cement companies responsible for approximately two-thirds of global historic greenhouse gas emissions¹⁰ have made climate commitments.

TRENDS IN COMPANY CLIMATE ACTION COMMITMENTS

- 4,313 companies in 74 different sectors are taking climate actions, according to the Global Reporting Initiative (GRI). Companies in the Food and Beverage Processing (243 participating companies), Automobile and Components Industry (235 companies), Electrical Equipment and Machinery (234 companies), Containers and Packaging (224 companies), and Technology: Hardware and Equipment (196 companies) sectors are especially active in pledging climate action.

⁷ Revenue and market capitalization data were taken from Bloomberg.com, D&B Hoovers.com, financial statements and annual reports, and other sources with publicly available company revenue or investor asset information, if these data were not included in the original data source.

⁸ The Global 2000. Forbes. Available: www.forbes.com/global2000.

⁹ Global 500. Fortune. Available: www.fortune.com/global500.

¹⁰ Heede, R. Climatic Change, 122(1-2), 229-241(2014).

- 500 companies have made 868 renewable energy commitments, including:
 - Commitments to install 27 gigawatts of renewable energy
 - Panasonic Corporation is committed to disseminating enough household fuel cells to generate over 440,000 megawatt-hours of power by 2018.
 - Apple is committed to building 280 megawatts of power through investments in places ranging from Arizona, USA, to Sichuan Province, China.
 - 192 companies specifically mention plans to have an energy mix comprised of 100 percent renewable sources.
- 1,340 companies have made over 1,900 combined commitments to improve energy efficiency within their operations or supply chain.
 - Humana Inc. is using green leasing, energy efficiency, and renewable energy purchases to reduce carbon dioxide equivalent (CO₂e) emissions in their leased assets and rented buildings by 20 percent from a 2011 baseline.
- Companies have pledged to protect or restore a collective 19.9 million hectares of land.
- Companies' commitments specifically cite the creation of a combined 877,603 jobs.
- 44 percent (3,340) of company commitments include a specific timeframe:
 - 1,295 companies have set short-term (pre-2020) commitments.
 - 413 companies have set mid-term (mid-2020 to 2030) commitments.
 - 260 companies have set long-term (post-2030) commitments.
- 1,581 companies have made 3,387 emissions reduction commitments.
 - 2,956 of these commitments (87 percent) include a quantifiable emissions reductions targets.
- 48 companies have set goals for carbon neutrality
 - 14 companies have not set a timeline for their carbon neutrality goals.
 - 22 companies have set a short-term (pre-2020) timeline for their carbon neutrality goals.
 - 2 companies have set a mid-term (mid-2020 to 2030) timeline for their carbon neutrality goals.
 - 10 companies have set a long-term (post-2030) timeline for their carbon neutrality goals.

- 17 commitments include a reference to offsets.
 - Microsoft has committed to offset 100 percent of their emissions from business air travel by supporting carbon offset projects that drive social benefits in emerging nations.
 - Zurich Insurance is driving their portfolio to be carbon neutral by offsetting remaining emissions with a forestry project in Indonesia.
- 889 (14 percent) of participating companies are deploying carbon prices, and 122 of these companies clearly mention a price or a price range.
 - Of these 122 companies, 28 specify a carbon price range (rather than a specific price).
 - The carbon prices companies specify range from \$0.95 to \$357.37 USD per ton.
- 58 companies and 78 investors in our data sources have committed to investments in green bonds, a growing financial tool to support sustainable projects.
 - These commitments sum to over \$90 billion USD in future financial investments in sustainability projects.
 - According to Climate Bonds Initiative, \$95.7 billion USD in green bonds has been issued in 2017, an increase from the \$81.6 billion USD issued in 2016.¹¹
 - Latvenergo has issued \$110 million USD in green bonds for energy, water, and resilience projects in Latvia, to increase the country's energy independence and prepare it for future climate events.

¹¹ Climate Bonds Initiative (CBI). Green Bonds Market 2017. Available: <https://www.climatebonds.net/> (accessed 6 November 2017).

INVESTORS



INVESTORS

- 505 investors have committed to climate action. The Banks, Diverse Financials, and Insurance (184 investors) and Real Estate (68 investors) sectors are especially well-represented.
- 34 of the 57 largest banks,¹² representing \$3.1 trillion USD by market capitalization, have committed to climate action.
- 39 investors are making 72 renewable energy commitments in wind, solar, bioenergy, hydropower, ranging from \$10 million to \$5 billion USD.
- 16 investors are making 17 commitments that include water, ranging from reducing water consumption within internal operations and per employee to issuing green bonds for water-related projects.
- 27 investors are making 21 commitments that relate to forests, ranging from sustainable forest management to reforestation activities, to achieving zero deforestation and forest degradation associated with timber in a firm's direct operations and supply chain.

¹² World's Largest Banks 2017 (by market capitalization, \$USb). Retrieved from: <http://www.relbanks.com/worlds-top-banks/market-cap> (accessed 1 November 2017).



**CIVIL SOCIETY
ORGANIZATIONS
(CSOs)**

CIVIL SOCIETY ORGANIZATIONS (CSOs)

- Non-profit organizations and non-governmental organizations (NGOs) lead 50 cooperative initiatives listed on the Climate Initiatives Platform. International cooperative initiatives bring a mix of national governments, subnational actors and/or non-state actors together to address a common climate issue or challenge.
 - The RegionsAdapt Initiative, led by nrg4SD and driven by the subnational governments of Rio de Janeiro and Catalonia, creates a collaborative framework for regions to exchange experiences and best practices in adapting to climate change.¹³
 - The Africa Clean Energy Corridor Initiative brings companies, civil society organizations, NGOs and countries together around a common goal of meeting half of the Eastern and Southern Africa region's total electricity demand through clean, indigenous, cost-effective renewable resources by 2030.¹⁴
- NGOs from 46 countries, ranging from Viet Nam to Morocco, list climate actions on NAZCA.
 - These actors, which range from universities to conservation organizations and multilateral institutions, number 584 in total on NAZCA.
 - Most (195 commitments) take place in the energy access and energy efficiency sector, followed by forestry (120 commitments), transport (112 commitments), and renewable energy and private finance (99 commitments) arenas.
 - These actors participate in 19 cooperative initiatives, including the New York Declaration on Forests, the Divest-Invest Global Movement, Public Transport Declaration on Climate Leadership, among others.

¹³ Network of Regional Governments for Sustainable Development (nrg4SD). RegionsAdapt. Available: <http://www.nrg4sd.org/climate-change/regionsadapt> (accessed 6 November 2017).

¹⁴ UNFCCC. Non-State Actor Zone for Climate Action. Available: <http://climateaction.unfccc.int/cooperative-initiative/africa-clean-energy-corridor-initiative/all-themes> (accessed 6 November 2017).

- In a December 2015 open letter to COP-21 ministers, the Global Alliance, which represents higher and further education sustainability networks and represents a membership of more than 10,000 universities and student organisations, called for a recognition of the role that universities play in finding and implementing solutions on climate change mitigation and adaptation, and for support for institutions to embed sustainable development education into teaching, operations and quality standards.^{15 16}

U.S. CIVIL SOCIETY

- 700 universities and colleges in the United States, with a total student population nearing 1 million and a collective endowment of over \$250 billion USD, have committed to climate action.
 - Of these, 589 U.S. colleges and universities are generating 519,762,051 kilowatt hours of renewable electricity, enough to power 41,768 homes in the U.S. for a year.
 - Some have achieved deep emissions reductions, such as the College of the Atlantic in Maine, which has reduced emissions 190 percent from 2008 levels and has committed to becoming carbon neutral.
- Since early 2012, Americans have made more than 8 million public comments in support of clean energy and carbon pollution limits for power plants.¹⁷

¹⁵ Global alliance of universities urges government action on climate change. (2 December 2015). Times Higher Education. Available: <https://www.timeshighereducation.com/global-alliance-universities-urges-government-action-climate-change>.

¹⁶ Open Letter to COP21 Ministers and Governments; On behalf of a global alliance of tertiary, higher education and student sustainability networks, associations and institutions. (2015). Available: <http://cop21.grli.org/>.

¹⁷ ActOnClimate. 8 Million Comments Supporting Action on Climate Change. Available: <http://www.actonclimate.com/article/eight-million-comments/> (accessed 6 November 2017).