THE °CLIMATE GROUP

CDP
DISCLOSURE INSIGHT ACTION

GLOBAL STATES AND REGIONS ANNUAL DISCLOSURE

2017 UPDATE, ANNEX

How over 100 states and regions are acting on climate change

KEY FINDINGS:

8.5%

EMISSIONS REDUCTION

average compared to governments' base years

80%

MORE CLIMATE ACTIONS

taken across 10 sectors, incl. buildings, energy, transport and land use

290

TARGETS

for emissions reductions, renewable energy and energy efficiency

"The 2017 Annual Disclosure Update shows that states and regions are now moving into the implementation of the Paris Agreement. Knowing what other governments have done reinforces the case for action, with visible progress being made against headline commitments and targets. This proves that we can continue to raise ambition and drive the world to an under 2 degrees Celsius economy without delay."

Helen Clarkson, CEO, The Climate Group

"CDP data highlights how states and regions across the globe are setting increasingly ambitious short-term emissions reduction targets. This momentum is both driving up standards of climate leadership and putting transparency and accountability at the heart of government environmental action. Now we need to see longer-term targets from states and regions to ensure their ambition is aligned with limiting global warming to well-below 2 degrees Celsius."

Paul Simpson, CEO, CDP

DISCLOSING STATES AND REGIONS:

NORTH AMERICA

CANADA: Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Northwest Territories, Ontario, **Prince Edward Island**, Québec. **UNITED STATES:** California, Connecticut, **Hawaii**, Minnesota, New York State, Oregon, Vermont*, Washington.

LATIN AMERICA

ARGENTINA: **Misiones**. **BRAZIL:** **Ceará**, **Goiás**, Minas Gerais, Rio de Janeiro, **Rio Grande do Sul**, São Paulo, **Tocantins**. **CHILE:** **Araucanía**. **ECUADOR:** **Azuay**, **Esmeraldas**, **Manabí**, **Morona Santiago**, **Pichincha**, **Santa Elena**. **MEXICO:** **Baja California**, Hidalgo*, Jalisco, Yucatán. **PERU:** **Ucayali**.

EUROPE

AUSTRIA: Carinthia, Lower Austria, Upper Austria. **BELGIUM:** **Wallonia**. **BULGARIA:** **Vratza**. **DENMARK:** Capital Region of Denmark*, **Central Denmark Region**, North Denmark Region. **FINLAND:** Helsinki-Uusimaa, **North Karelia**. **FRANCE:** Auvergne-Rhône-Alpes*, Brittany, La Réunion, New Caledonia, Nouvelle-Aquitaine, Occitanie*, Provence-Alpes-Côte-d'Azur*. **GERMANY:** Baden-Württemberg, Bavaria, Hesse, North Rhine-Westphalia, **Thuringia**. **GREECE:** **Attica**. **ITALY:** Emilia-Romagna, Lombardy, Sardinia, Veneto. **THE NETHERLANDS:** Drenthe*, **Flevoland**, **Groningen**, North Brabant, South Holland. **NORWAY:** **Nord Trondelag**, Oppland, **Sogn og Fjordane**. **POLAND:** **Opole**. **PORTUGAL:** **Madeira**. **SPAIN:** Andalusia, Basque Country, Cantabria, Catalonia, **Galiza**, **Navarra**. **SWEDEN:** Blekinge, **Halland**, Jämtland, **Kronoberg**, **Norrbotten**, **Skåne**, Uppsala County*. **SWITZERLAND:** **Basel-Landschaft**, **Basel-Stadt**. **UNITED KINGDOM:** Scotland, Wales.

AFRICA

KENYA: Laikipia County*. **MALI:** **Tombouctou**. **MOROCCO:** **Rabat-Salé-Kénitra**. **NIGERIA:** Cross River State. **SENEGAL:** **Fatick**, **Gossas**, **Kaffrine**, **Saint Louis**. **SOUTH AFRICA:** KwaZulu-Natal, **Western Cape**.

ASIA

INDIA: **Chhattisgarh**, **Gujarat**, Jammu and Kashmir, **West Bengal**. **INDONESIA:** **North Sumatra**. **SRI LANKA:** **Western Province**.

OCEANIA

AUSTRALIA: Australian Capital Territory, **New South Wales**, **Queensland**, South Australia.

110 GOVERNMENTS

101 governments disclosed in 2017, including 50 new disclosers and 53 members of the Under2 Coalition. The analysis includes those 101 governments plus an additional nine governments which disclosed in 2016 but did not update their disclosure in 2017. These governments are: Auvergne-Rhône-Alpes, Capital Region of Denmark, Drenthe, Hidalgo, Laikipia, Occitanie, Provence-Alpes-Côte-d'Azur*, Uppsala County and Vermont.

FIGURE 1: PROJECTED DISCLOSURE GHG EMISSIONS COMPARED TO IEA SCENARIOS

GtCO$_2$ chart. Legend:
- Emissions saved by states and regions compared to Paris commitments
- Emissions gap to keep temperatures below 2 degrees Celsius

Labels: RTS, DISCLOSED TARGETS, 2DS, B2DS; 21.9 GtCO$_2$, 8.1 GtCO$_2$.

Years: 2010, 2020, 2030, 2040, 2050.

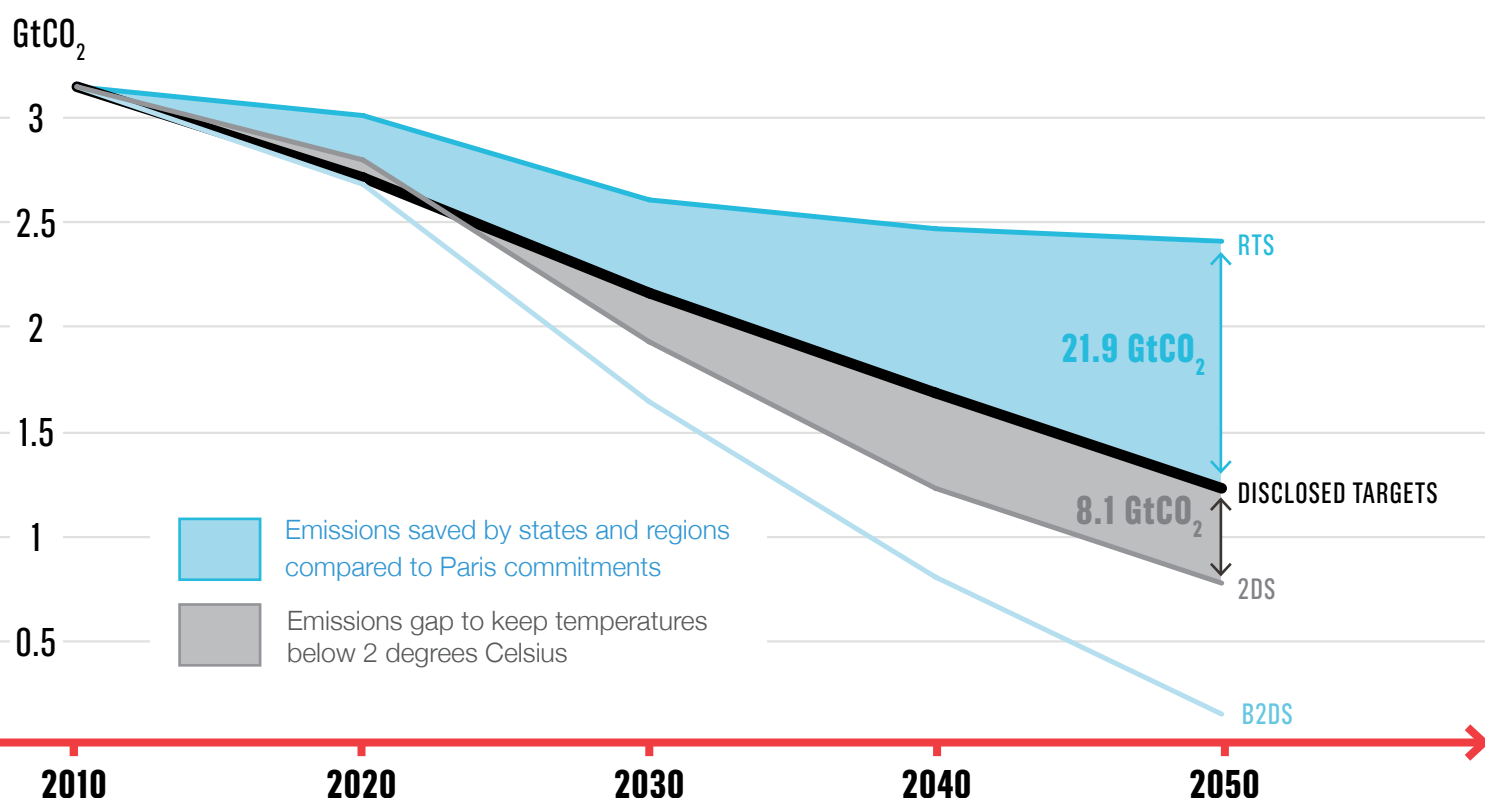## TABLE 1: ANNUAL AND CUMULATIVE SAVINGS BY DISCLOSING STATES AND REGIONS

Year	COMPARED TO REFERENCE TECHNOLOGY SCENARIO (SAVINGS IN GTCO$_2$E)		COMPARED TO 2 DEGREES SCENARIO (SAVINGS IN GTCO$_2$E)	
	Annual savings	Cumulative savings	Annual savings	Cumulative savings
2020	0.3	1.9	0.1	1.2
2030	0.4	5.5	-0.2	0.3
2050	1.2	21.9	-0.5	-8.1

METHODOLOGY

The purpose of this analysis is to compare the emissions of the disclosing states and regions with three scenarios calculated using data and analysis from the International Energy Agency's (IEA) Energy Technologies Perspectives 2017 (ETP 2017) report.

The **Reference Technology Scenario (RTS)** considers current commitments by countries to limit emissions and improve energy efficiency, including the Nationally Determined Contributions (NDCs) pledged by Parties under the Paris Agreement. By factoring in these commitments, the RTS already represents a major shift from a historical "business as usual" (BAU) approach with no meaningful climate policy response.

The **2°C Scenario (2DS)** lays out a CO2 emissions trajectory consistent with at least a 50% chance of limiting the average global temperature increase to 2°C by 2100. To stay within this range, CO2 emissions from fuel combustion and industrial processes must continue their decline after 2060, and carbon neutrality in the energy system must be reached before 2100.

The **Beyond 2°C Scenario (B2DS)** explores how far deployment of technologies that are already available or in the innovation pipeline could take us beyond the 2DS. Technology improvements and deployment are pushed to their maximum practicable limits across the energy system in order to achieve net-zero emissions by 2060 and to stay net zero or below thereafter, without requiring unforeseen technology breakthroughs or limiting economic growth.

The GHG emissions projections between 2010 and 2050 were calculated by following four steps:

Step 1 – Population projections

The first step of the analysis was to find historic (back to 2010) and projected population figures (up to 2050) for each state or region.

Data source: Historical records and future population projections disclosed by states and regions, as well as other online resources (e.g. state websites).

Methodology and assumptions: Where there were missing historic or future population figures, Compound Annual Growth Rates (CAGRs) were used. If projections ended before 2050, the most recent CAGR was applied to estimate projections up to 2050.

Step 2 – Disclosed targets emissions projections (Disclosure Scenario)

The second step was to input state and regional GHG emissions from 2010 up until the latest inventory year.

Data source: Historical GHG emissions disclosed by states and regions.

Methodology and assumptions: A linear emissions pathway was projected from the latest inventory year to the target year(s), under the assumption that states and regions would meet their disclosed target(s). The disclosed targets sum the emissions of all the states for which the data was available (see list below).

Step 3 – BAU emissions projections

The 2010 GHG intensity (GHG emissions/capita) of each state or region was calculated and multiplied by the population figure up to 2050 (calculated in Step 1). The BAU scenario therefore assumes that the GHG intensity of the disclosing governments would stay the same between 2010 and 2050 (no significant climate mitigation action taken).

Step 4 – IEA scenarios projections

This final step looks at applying the three IEA scenarios (described above) to the disclosing states and regions. For each of the three scenarios, five-year vectors covering the period 2010-2050 were developed.

These vectors were based on UN population forecasts and modelled IEA CO_2 emissions projections to 2050 (accounting for sector-specific emissions for energy, transport, industry and buildings under various technology, policy and trade-off assumptions). Once calculated, the vectors were applied to the BAU emissions projections (Step 3). This allows to compare the Disclosed targets (Step 2) to these adapted IEA scenarios and assess the level of ambition in each (see Figure 1).

A linear assumption was drawn between the two data points either side of the missing data to calculate the changes in those vectors annually.

GHG emissions savings were calculated by subtracting the Disclosure emissions projections (Step 2) from the emissions projections of the IEA scenarios.

Step 5 – Emissions savings for 2020, 2030 and 2050

Methodology and assumptions: GHG emissions savings were calculated by subtracting the disclosed targets emissions projections (Step 2) from the emissions projections of the IEA scenarios (Step 4). The total figures are cumulative, i.e. the emissions saved by the year 2030 include those already achieved by 2020, and the emissions saved by 2050 include those already achieved by 2030 and 2020. The annual emissions figures are calculated by adding up total emissions saved of each disclosing state or region for the years 2020, 2030 and 2050.

Governments included in the analysis are those who have disclosed both a region-wide GHG emissions reduction target and a region-wide GHG inventory:

Andalusia, Australian Capital Territory, Baden-Württemberg, Basel-Landschaft, Basque Country, Bavaria, Blekinge, British Columbia, Brittany, California, Carinthia, Catalonia, Connecticut, Drenthe, Emilia-Romagna, Galiza, Helsinki-Uusimaa, Hesse, Jalisco, Jämtland, La Réunion, Lombardy, Madeira, Manitoba, Minas Gerais, Minnesota, Navarra, New York State, Newfoundland and Labrador, North Brabant, North Denmark Region, North Karelia, North Rhine-Westphalia, Northwest Territories, Nouvelle-Aquitaine, Ontario, Oregon, Provence-Alpes-Côte-d'Azur, Québec, Queensland, São Paulo, Sardinia, Scotland, South Holland, Thuringia, Upper Austria, Vermont, Wales, Wallonia, Washington and Yucatán.

TABLE 2: REGION-WIDE GHG REDUCTION TARGETS

GOVERNMENT	BASE YEAR	2020	2025	2030	2040	2050
Base year emissions goal						
Andalusia	2005			18%[1]		
Australian Capital Territory	1990	40%				[2]
Baden-Württemberg	1990	25%				90%
Basel-Landschaft	2010					40%
Basque Country	2005			40%		80%
Blekinge	1990	50%				
British Columbia	2007	33%[3]				80%
Brittany	2005	17%				
California	1990	[2]		40%		80%
Carinthia	2005	16%[4]				
Catalonia	2005	25%		40%		
Connecticut	1990/2001[5]	10%				80%
Drenthe*	1990	20%				90%
Emilia-Romagna	1990	20%				
Galiza	2005	35%				
Hesse	1990	30%	40%			90%
Jalisco	2010					50%
Jämtland	1990	50%		100%		
KwaZulu-Natal	2000	16%[6]				
La Réunion	2011	10%				
Lombardy	2005	20%		40%		80%[4]
Lower Austria	2005	16%[4]				
Madeira	2005	20%				
Manitoba	2005	15%				
Minnesota	2005		30%			80%
Navarra	2005	35%		45%		
New York State	1990			40%		80%
Newfoundland and Labrador	1990/2001[7]	10%				75%
Norrbotten	2005	25%		47%		85%
North Brabant	2014	8%				
North Denmark Region	2012	35%				
North Karelia	2007			80%		
North Rhine-Westphalia	1990	25%				80%
Nouvelle-Aquitaine	1990	30%[8]				
Ontario	1990	15%		37%		80%
Oregon	1990	10%				75%
Provence-Alpes-Côte-d'Azur*	2007	20%		35%		
Québec	1990	20%		37.5%		

TABLE KEY

Updated disclosure

New disclosure 2017

(*) Did not update disclosure in 2017

Members of the Under2 Coalition

	Base year					
Queensland	2005			30%[9]		
São Paulo	2005	20%				
Sardinia	1990					83%
Scotland	1990	42%				80%
South Holland	1990					80-95%
Thuringia	1990			60-70%	70-80%	80-95%
Veneto	2005					80%
Vermont*	1990			50%[10]		75%
Wales	1990	40%				
Wallonia	2005	14.7%[4]				
Washington	1990	[2]		25%[11]		50%

BASE YEAR INTENSITY GOAL

Bavaria	Reduce GHG emissions per capita to below 2 tons annually by 2050
Laikipia County*	Keep GHG emissions per capita below 2 tons through 2050
Upper Austria	Reduce energy-related GHG emissions intensity by 25-33% by 2030 and by 70-90% 2050 on 2014 levels
Yucatán	Reduce intensity of region-wide GHG emissions by 20% by 2018 and 40% by 2030 on 2005 levels

FIXED-LEVEL GOAL

Australian Capital Territory	Reduce GHG emissions to achieve zero net emissions by 2050
California	Limit GHG emissions to 431 MMt CO_2e in 2020[12]
Hawaii	Limit GHG emissions to 23.13 MMt CO_2e in 2020 [12]
Helsinki-Uusimaa	Become a carbon neutral region by 2050
New South Wales	Achieve net-zero emissions by 2050
Northwest Territories	Limit GHG emissions increases to 2.500 Mt CO_2e by 2020 and to 1.656 Mt CO_2e in 2030[13]
Queensland	Reduce GHG emissions to achieve zero net emissions by 2050[8]
South Australia	Reduce GHG emissions to achieve zero net emissions by 2050
Washington	Limit GHG emissions to 88.4 MMTCO$_2$e by 2020[12]

Footnotes

1 Andalusia moved from a base year intensity goal to a base year emissions goal, Andalucia's region-wide target apply to EU non-ETS sector emissions.

2 See fixed-level goals.

3 This target no longer appears in British Columbia's Climate Leadership Plan, which was published in August 2016.

4 Target applies to non-EU ETS emissions.

5 Connecticut's 2050 target is based on a 2001 base year.

6 KwaZulu-Natal's target is included in their tentative GHG reduction plan.

7 Newfoundland and Labrador's 2050 target is based on a 2001 base year.

8 Nouvelle-Aquitaine's target year is 2021.

9 Queensland's Climate Transition Strategy include 28 actions to achieve its mid-term 2030 goal.

10 Vermont's mid-term target year is 2028.

11 Washington's mid-term target year is 2035.

12 Equals a return of GHG emissions to 1990 levels.

13 Equals a return of GHG emissions to 2005 levels.

TABLE 3: REGION-WIDE RENEWABLE ENERGY TARGETS

TARGET SHARES OF RENEWABLES IN ENERGY MIX (TOTAL FINAL ENERGY CONSUMPTION)				
Government	**2020**	**2025**	**2030**	**2050**
Andalusia	25%			
Baden Württemberg	25%			80%
Basque Country			20%	40%
Blekinge	80%			
Brittany	28%			
Catalonia	20%			
Central Denmark Region		50%		
Emilia-Romagna	17%			
Galiza	30%			
Lombardy	15.5%			
Lower Austria[1]	50%			
Navarra	28%	35%	50%	
Norrbotten				40%
North Brabant	14%			
North Karelia [2]		100%		
Nouvelle-Aquitaine	32%[3]			
Provence-Alpes-Côte-d'Azur*	20%		30%	
Thuringia				100%[4]
Veneto	10%			
Vermont*				90%
Vratza	20%			
Wallonia	13%			

TARGET SHARES OF RENEWABLES IN ENERGY MIX (TOTAL PRIMARY ENERGY SUPPLY)		
Government	**2020**	**2030**
Catalonia	[5]	
Flevoland		100%
North Denmark Region	20%	
Québec		25% [6]
Queensland		50%[7]
São Paulo	69%	
Sardinia	29%	
South Holland	9%	
Yucatán	9%[8]	

TABLE KEY

 Updated disclosure

 New disclosure 2017

(*) Did not update disclosure in 2017

Members of the Under2 Coalition

TARGET SHARES OF RENEWABLES IN ELECTRICITY MIX (CONSUMPTION)

Government	2020	2030	2050
Australian Capital Territory	100%		
California[9]	33%		50%
Hawaii	30%		100%[10]
Hesse	25%[11]		100%
New Caledonia		20%	
New York State		50%	
Scotland	50%[12]		

TARGET SHARES OF RENEWABLES IN ELECTRICITY MIX (PRODUCTION)

Government	2020	2025	2030	2050
Alberta			30%	
Basel-Landschaft			40%	
British Columbia		100%[13]		
Cantabria	36%			
Connecticut	27%[14]			
Groningen			60%[15]	100%
La Réunion	50%		100%	
Minnesota		25%	50%[16]	
Oregon				50%[17]
South Australia		50%		
Washington	15%[18]			

TABLE KEY

▮ Updated disclosure

▮ New disclosure 2017

(*) Did not update disclosure in 2017

Members of the Under2 Coalition

Footnotes

1 Lower Austria also disclosed a target of 100% target share of renewable electricity consumption by 2015. This target was achieved on time.

2 North Karelia aims to be self-sufficient in renewable energy production by 2025.

3 Nouvelle-Aquitaine's target year is 2021.

4 Thuringia's target year is 2040.

5 Catalonia aims to increase installed capacity for renewable energy sources to 9,370 MW by 2020.

6 Québec's target is to increase the overall renewable energy output by 25% by 2030 based on 2013 levels.

7 The Queensland Government delivered the Powering Queensland Plan in June 2017 which sets out how Queensland will deliver the target.

8 Yucatán's target year is 2018.

9 California's target is a Renewable Portfolio Standard.

10 Hawaii's target year is 2045.

11 Hesse's target year is 2019.

12 Scotland's target was to reach 50% of electricity consumption sourced from renewables by 2015 – in its disclosure, Scotland reported this target had been achieved.

13 The 2016 Climate Leadership Plan increased this target to from 93% to 100% clean energy on the integrated grid by 2025, while allowing for the use of fossil fuels for reliability.

14 Connecticut's target is a Renewable Portfolio Standard.

15 Groningen's target year is 2035.

16 Minnesota's target was proposed by a bipartisan legislation but was not yet enacted at the time of Disclosure.

17 Oregon's target is a Renewable Portfolio Standard and the target year is 2040.

18 Washington's target is a Renewable Portfolio Standard.

TABLE 4: REGION-WIDE ENERGY EFFICIENCY TARGETS

ENERGY EFFICIENCY TARGETS (AS A DECREASE IN ENERGY USE)

Government	Percent decrease in energy use	Base year	Target year
Andalusia	25%	Trend scenario	2020
Baden Württemberg	50%	2010	2050
Blekinge	20%	1990	2020
Brittany	26%	2005	2020
	60%	2005	2050
Cantabria	17%	2010	2020
Catalonia	20%	Trend scenario	2020
Drenthe*	10%	2010	2020
Lombardy	10%	2005	2020
Navarra	30%[1]	Trend scenario	2020
	10%[2]	Trend scenario	2025
	10%[3]	Trend scenario	2030
New Caledonia[4]	20%	2014	2030
New York State	23%	2012	2030
North Karelia	[5]	2008	2025
Nouvelle-Aquitaine	30%	2012	2021
Provence-Alpes-Côte-d'Azur*	13%	2007	2020
	25%	2007	2030
Scotland[6]	12%	2006	2020
Wales	18%	2007	2020
Wallonia	18%	2007	2020

ENERGY EFFICIENCY TARGETS (AS AN INCREASE IN ENERGY EFFICIENCY)

Government	Percent increase in energy efficiency	Base year	Target year
Baja California	15%	2000	2030
Emilia-Romagna	20%	Trend scenario	2020
Galiza	20%	2005	2020
Jämtland	30%	1990	2020
Québec	15%	2013	2030
Thuringia	20%	2010	2020
Upper Austria	1,5 to 2 % per year	2014	2050
Uppsala County*	10%	2014	2018

Footnotes

1 Navarra's target is to reduce energy consumption by 30% compared to projected energy efficiency measures for 2020.

2 Navarra's target is to reduce energy consumption by 10% compared to the projected figures for 2025 for energy efficiency actions.

3 Navarra's target is to reduce energy consumption by 10% compared to the projected figures for 2030 for energy efficiency actions.

4 New Caledonia also has a target of reducing final energy use by 25% below a trend scenario in all sectors excluding mining and metallurgy.

5 North Karelia's Climate and Energy Strategy states that primary energy consumption should not rise above 2008 base year level (10,046 GWh).

6 Scotland's near-term target is based on 2005-2007 levels.

TABLE 5: GHG EMISSIONS TRENDS SINCE BASE YEAR

GOVERNMENT	BASE YEAR	LATEST INVENTORY YEAR	PERCENT CHANGE FROM BASE YEAR
Andalusia	2005	2015	-20%
Australian Capital Territory	1990	2015-2016	26%
Baden Württemberg	1990	2014	-15%
Basel-Landschaft	2010	2014	-12%
Basque Country	2005	2015	-24%
Bavaria	2011	2013	-2%
Blekinge	1990	2014	-43%
British Columbia	2007	2014	-5%
Brittany	2005	2010	-2%
California	1990	2015	2%
Carinthia	2005	2015	-18%
Catalonia	2005	2015	-26%
Connecticut	1990	2014	-2%
Drenthe*	1990	2013	33%
Emilia-Romagna	1990	2010	50%
Helsinki-Uusimaa	1990	2015	-9%
Hesse	1990	2012	-27%
Jämtland	1990	2011	-24%
La Réunion	2011	2014	4%
Lombardy	2005	2015	-21%
Lower Austria	2005	2015	-13%
Madeira	2005	2009	-33%
Manitoba	2005	2014	3%
Minnesota	2005	2014	-3%
Navarra	2005	2015	-22%
New York State	1990	2014	-8%
Newfoundland and Labrador	1990	2015	9%
North Rhine-Westphalia	1990	2015	-13%
Northwest Territories	2005	2014	-13%
Nouvelle-Aquitaine	1990	2015	-1%
Ontario	1990	2014	-7%
Oppland	1990	2015	-1%
Oregon	1990	2013	7%
Provence-Alpes-Côte-d'Azur*	2007	2013	-31%
Québec	1990	2014	-8%
Queensland	2005	2015	-14%
São Paulo	2005	2013	25%
Scotland	1990	2015	-41%
South Holland	1990	2013	16%

TABLE KEY

Updated disclosure

New disclosure 2017

(*) Did not update disclosure in 2017

Members of the Under2 Coalition

Thuringia	1990	2013	-61%
Vermont*	1990	2012	2%
Wales	1990	2015	-20%
Wallonia	2005	2015	-19%
Washington	1990	2013	7%

TABLE 6: PROGRESS TOWARDS 2020 GHG REDUCTION TARGETS

GOVERNMENT	CURRENT INVENTORY YEAR	REDUCTION TARGET IN 2020	PROGRESS TOWARDS 2020 TARGET	ANNUAL REDUCTION RATE NEEDED TO REACH 2020 TARGET ON TIME
Australian Capital Territory	2015-2016	40%		More than 4%
Baden Württemberg	2014	25%		2-4%
Blekinge	2014	50%		2-4%
British Columbia	2014	33%		More than 4%
Brittany	2010	17%		0.1-2%
California[1]	2015	N/A		0.1-2%
Carinthia	2015	16%		Target met or exceeded
Catalonia	2015	25%		Target met or exceeded
Connecticut	2014	10%		0.1-2%
Drenthe*	2013	20%		More than 4%
Emilia-Romagna	2010	20%		More than 4%
Hesse	2012	30%		0.1-2%
Jämtland	2011	50%		More than 4%
La Réunion	2014	10%		2-4%
Lombardy	2015	20%		Target met or exceeded
Lower Austria	2015	16%		0.1-2%
Madeira	2009	20%		Target met or exceeded
Manitoba	2014	15%		2-4%
Navarra	2015	35%		2-4%
Newfoundland and Labrador	2015	10%		2-4%
North Brabant	2015	8%		0.1-2%
North Rhine-Westphalia	2015	25%		2-4%
Ontario	2014	15%		0.1-2%
Oregon	2013	10%		2-4%
Provence-Alpes-Cote-d'Azur*	2013	20%		Target met or exceeded
Québec	2014	20%		2-4%
São Paulo	2013	20%		More than 4%
Scotland	2015	42%		0.1-2%
Wales	2015	40%		More than 4%
Wallonia	2015	14%		Target met or exceeded
Washington[1]	2013	N/A		0.1-2%

1 For California and Washington, only the annual reduction rates needed to achieve their 2020 goals were calculated, due to the regions having fixed-level goals.

TABLE 7: TAKEN AND PLANNED CLIMATE ACTIONS

3 most taken climate actions/sector

3 most planned climate actions/sector

SECTOR	CLIMATE ACTION	% OF GOVERNMENTS TAKING THIS ACTION	% OF GOVERNMENTS PLANNING TO TAKE THIS ACTION
Agriculture	Promote sustainable farming practices	87%	13%
Buildings and Lighting	Increase awareness on energy efficiency/clean energy programs	92%	4%
	Improve heating and cooling efficiency	83%	13%
	Install biomass heating	61%	14%
	Install clean cook stoves	18%	5%
	Install combined heat and power	53%	13%
	Install energy efficient lighting systems	88%	8%
	Install geothermal heating	50%	17%
	Install more efficient luminaires in streetlights/traffic lights	86%	10%
	Install smart energy meters/sub-meters	51%	11%
	Install solar electricity	76%	12%
	Install solar heating/hot water	74%	8%
	Promote building energy performance	73%	12%
	Promote energy efficient appliances	77%	8%
	Set/strengthen appliance efficiency standards	50%	2%
	Set/strengthen building energy codes/standards	66%	6%
	Set/strengthen HVAC efficiency standards	43%	4%
	Set/strengthen lighting efficiency standards	43%	9%
	Switch from heating oil to natural gas	29%	9%
Energy	Enable net metering	59%	15%
	Expand/improve transmission to integrate renewables	76%	9%
	Install biomass power	71%	8%
	Install carbon capture and storage	12%	12%
	Install combined heat and power or trigen	57%	13%
	Install energy storage system	52%	20%
	Install fuel cell power	23%	18%
	Install geothermal power	52%	15%
	Install hydropower	54%	9%
	Install microgrids	40%	23%
	Install natural gas power	53%	9%
	Install nuclear power	16%	2%
	Install ocean/tidal/wave power	9%	5%
	Install smart grids	52%	22%
	Install solar power	86%	6%
	Install wind power	78%	10%

		Taken	Planned
	Measure energy productivity(e.g. GDP per unit of energy)	51%	19%
	Promote demand-side management programs	68%	11%
	Reform utility revenue policies and rate structures	44%	5%
	Replace coal-fired/inefficient power stations	33%	16%
	Set energy efficiency resource standards (EERS)	30%	8%
Finance and Economy $	Adopt feed in tariff for renewables	40%	6%
	Adopt reverse auction for renewables	24%	3%
	Enable PACE (long term property tax based loans) financing	24%	12%
	Establish GHG trading program	36%	3%
	Increase awareness/engage public on financing mechanisms and incentives for energy efficiency/clean energy	75%	11%
	Invest in clean tech R&D	84%	8%
	Issue green bonds	23%	6%
	Promote on-bill financing	26%	9%
	Provide green mortgages	9%	6%
	Provide loans/guarantees for energy efficiency/clean energy	50%	11%
	Provide tax incentives for clean energy	33%	8%
	Support clean tech clusters	63%	16%
	Support clean tech companies	71%	11%
	Support green manufacturing	70%	3%
	Tax GHG emissions	18%	6%
Governance 🏛	Collaborate with cities/local governments	92%	8%
	Collaborate with national governments	95%	2%
	Collaborate with other states/regions	90%	5%
	Support businesses	86%	9%
Industry	Improve energy efficiency of industrial processes	84%	16%
	Promote industrial symbiosis/industrial ecology programs	55%	13%
	Promote reduced packaging	44%	8%
	Tax GHG-heavy industrial fuel consumption	16%	11%
Land Use 🌲	Establish GHG reduction plan for LULUCF (e.g. REDD+, etc.)	28%	14%
	Establish guidelines for siting renewable power	74%	3%
	Promote conservation efforts for natural areas	93%	5%
	Promote sustainable coastal ecosystem management	60%	6%
	Promote sustainable forest management	78%	10%
	Undertake environmental impact assessment	89%	3%

Transport	Mass Transit: Adopt high speed rail	18%	10%
	Mass Transit: Adopt bus rapid transit	64%	10%
	Mass Transit: Improve bus services	**76%**	11%
	Mass Transit: Improve fuel efficiency of trains (e.g. efficient engines, regenerative braking, energy storage, etc.)	48%	8%
	Mass Transit: Improve metro services (e.g. increase routes, improve stations, reduce fares, etc.)	49%	12%
	Mass Transit: Improve rail services (e.g. increase routes, improve stations, reduce fares, etc.)	59%	17%
	Mass Transit: Promote smart logistics (e.g. real-time information)	64%	20%
	Mass Transit: Switch freight from trucks to rail	35%	14%
	Private Transport: Increase awareness/engage public on private transport measures	**79%**	7%
	Private Transport: Install electric vehicle charging infrastructure (i.e. home, work, highways, etc.)	**83%**	10%
	Private Transport: Promote alternative fuel production (e.g. biofuels, natural gas, hydrogen, etc.)	63%	16%
	Private Transport: Set GHG emissions standards	38%	3%
	Private Transport: Set low-carbon fuel standards	26%	5%
	Private Transport: Set manufacturing requirements (e.g. zero-emission vehicle standard)	13%	11%
	Private Transport: Set/strengthen fuel economy standards for cars/trucks	30%	8%
	Private Transport: Switch to electric/hybrid vehicles in cars/taxis/government fleets	67%	16%
	Private Transport: Switch to other lower-carbon fuel in cars/taxis/government fleets	41%	24%
Waste	Adopt source separation policies	83%	10%
	Establish waste reduction plan	**88%**	10%
	Increase awareness on waste reduction measures	**88%**	7%
	Install advanced thermal treatment/waste to energy	49%	15%
	Install anaerobic digestion	66%	13%
	Install landfill gas management/landfill gas to energy	75%	8%
	Install mechanical biological treatment	40%	6%
	Install municipal recycling points or centers	**85%**	2%
	Install waste heat recovery	49%	11%
Water	Adopt wastewater to energy initiatives (e.g. methane recovery for reuse)	62%	9%
	Install smart water meters	39%	10%
	Promote water recycling or reclamation	53%	12%

ABOUT THE ANNUAL DISCLOSURE

Each year, The Climate Group and CDP call upon state and regional governments to publicly disclose their climate targets and actions, emissions inventories and other climate information. This helps governments to better understand the risks and opportunities of climate change and increase the impact of climate actions.

The Climate Group and CDP are united in their firm belief on the vital role that state and regional governments play in driving climate action and delivering sustainable economies that avoid dangerous climate change and lead to a net-zero emissions world. State and regional government climate action is fundamental to delivering the Paris Agreement and the disclosed data drives CDP's analytical benchmarking, commitment tracking and data management; and The Climate Group's governments networks, peer learning, policy work and promotion of climate leadership.

START DISCLOSING IN 2018

Join the states and regions that are already measuring their impact through disclosure and taking action to help drive a swift transition to a low carbon economy.

For further analysis, please refer to the Annual Disclosure Annex, available at:
TheClimateGroup.org/Annual-Disclosure

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