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WATER EDUCATION COLORADO

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A HOTTER
FUTURE MEAN
FOR WATER?

SPRING 2019

Agreements, Accords and Summits

Can local efforts bolster global climate negotiations?

BY GLORIA DICKIE

In September 2018, thousands of people gathered in San Francisco for a first-of-its-kind Global Climate Action Summit. Never before had an international climate meeting focused on the involvement and commitments of local leaders, businesses and international governments. In the run-up to the summit, California’s then-Governor Jerry Brown signed a bill that will require the state to source 100 percent of its electricity from zero-carbon sources by 2045. Over the past two years, more than 70 other cities around the world have made pledges to buy enough renewable power to offset their electricity consumption on varying timelines. In July 2018, Denver Mayor Michael Hancock announced that the city’s electrical grid would go 100 percent renewable by 2030.

Such locally-spearheaded efforts are meant to lessen the impact of the United States’ plan to pull out of the Paris Agreement in 2020. When the Paris Agreement was developed in 2015, the U.S. had pledged to reduce its emissions nationally to limit global warming to below 2 degrees Celsius (3.6 degrees Fahrenheit) above pre-industrial levels. Now, cities, states and regions are feeling the impacts of warming and urgently setting their own emissions reduction targets.

On June 1, 2017, the day that the United States announced its intention to pull out of the Paris Agreement, 10 state governors formed the U.S. Climate Alliance. Then-Governor John Hickenlooper signed on a month later. The U.S. Climate Alliance now includes 21 governors and is continuing work on climate action, regardless of national directives, with the aim of implementing policies that will reduce greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2025. The alliance also serves as a watchdog, tracking and reporting progress in the United States to the global community. Not unlike the Green Climate Fund, the financial arm of the United Nations Framework Convention on Climate Change (UNFCCC), the U.S. Climate Alliance is creating its own “green banks” to finance

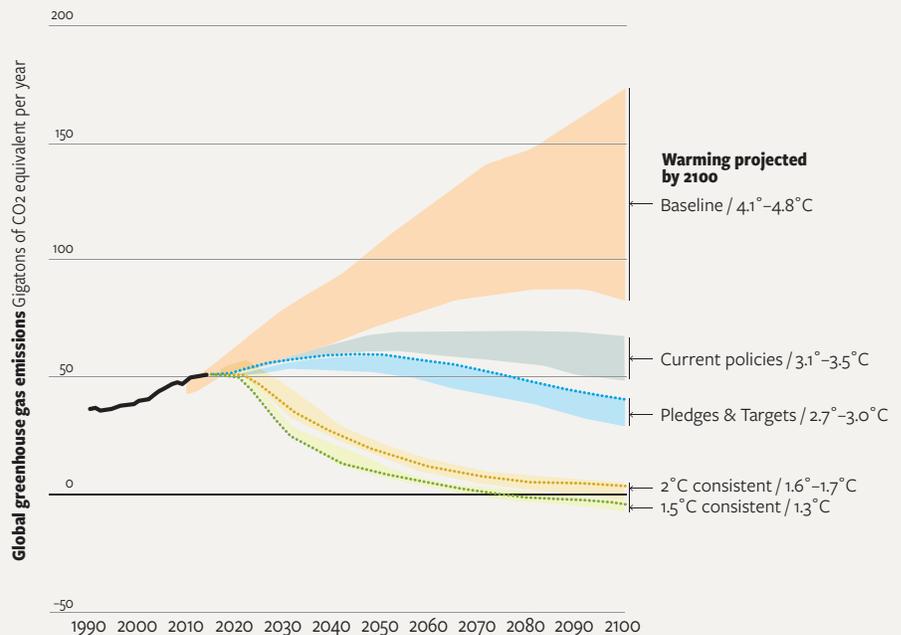
clean energy opportunities. New York Governor Andrew Cuomo announced in September 2017 that their NY Green Bank would raise \$1 billion of private capital to stimulate clean energy investment across alliance states and beyond. Now the green bank concept is coming to Colorado—in December 2018 the state

announced the launch of its nonprofit Colorado Clean Energy Fund to learn from New York’s model and accelerate clean energy project development.

In Bonn, Germany at COP23 in 2017—the 23rd annual Conferences of the Parties to the 1992 UNFCCC—the U.S. Climate Alliance launched the North American Climate Leadership Dialogue. And at the September 2018 Global Action Climate Summit, the alliance announced plans to bolster carbon sequestration through the protection of the nation’s forests, and to reduce short-lived climate pollutants, such as methane, black carbon, and hydrofluorocarbons. Though spirits were high in San Francisco, and hope tangible in the air, less than a month later it was clear local action wouldn’t be enough.

The Intergovernmental Panel on Climate Change (IPCC) issued a dire report in October 2018 concluding that even if every nation met their current Paris pledge—most have fallen far behind on their goal—the Earth will still warm by more than 3 degrees Celsius (5.4 degrees Fahrenheit) by the end of this century. The report declared that at our current rate of emissions, we can expect to see 1.5 degrees

Emissions-curling policies and targets are projected to limit global warming. Yet, even if all global targets and policies are followed, they will not limit warming to less than 2 degrees Celsius above pre-industrial levels—the goal established with the Paris Agreement. Capping warming at 1.5 degrees Celsius—the threshold that a 2018 IPCC report said would avoid many of the worst climate impacts—means bringing emissions to zero by mid-century.



Celsius (2.7 degrees Fahrenheit) of warming as early as 2030. Based on that outlook, the Paris Agreement, once seen as a framework to inspire joint international action over time, would likely prove inadequate without sudden and sincere action by all major greenhouse gas emitters. According to a 2018 report by Yale and the New Climate Institute, Global Climate Action From Cities, Regions, and Businesses, even local action is unlikely to make up the gap. The report's evaluation of climate change pledges from nearly 6,000 cities, states and regions around the world found that, even if targets were met they would fall significantly short of catastrophic warming thresholds.

The repercussions of today's warming temperatures have already manifested as extreme climate signals in global waters. In the United States, the U.S.'s Fourth National Climate Assessment, released in November 2018, reported that our country is already contending with devastating hurricanes, rising seas, and torrential downpours. Take 2017's Hurricane Harvey, the second-costliest disaster in the country's history at \$125 billion, which brought more than five feet of rainfall in just a few days.

Ahead of COP24, the most recent UNFCCC talks that were held in Katowice, Poland in December 2018, many local leaders were hopeful that the IPCC's October 2018 report would spur governments to agree to higher emissions reduction targets. Although COP24 did not yield additional pledges to reduce emissions ahead of 2020, when pledges will be required, it did produce a new rulebook that requires every signatory country to follow a uniform set of standards for measuring their planet-warming emissions and tracking their climate policies. The United States, though it still plans to pull out next year, agreed to the deal. As the U.S. Fourth National Climate Assessment says, if carbon emissions continue unabated, these negative environmental impacts will only get worse. **H**

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“If emissions continue at current rates, I would expect skiing to be gone except for abbreviated seasons at high-elevation resorts—probably by mid-century, but definitely by later century.”

Auden Schendler, Aspen Skiing Company

the pinch of low snowpack and early runoff. Flows in the Animas were below 25 percent of average for most of the year. Many other Colorado rivers saw similarly dismal flows. David Costlow of the Colorado River Outfitters Association (CROA), which represents Colorado's more than 175 rafting companies, said some outfitters bussed their guests from low-flow areas to rivers like the mainstem of the Colorado, which has more reliable flows due to upstream reservoir releases. At press time, it was too early to know the economic impact of 2018's low flows. But in 2012, another drought year, Colorado rafting companies saw a 17 percent decline in visitation and a 15 percent decline in revenue compared to the year before. “If average streamflow decreases in the future—a likely outcome across the climate projections—resulting competition for diminishing resources could impact rafting, fishing, and other recreation activities along with aquatic habitats,” reads the 2015 Colorado Climate Change Vulnerability Study.

After experiencing major droughts for three of the past 18 years (in 2002, 2012 and 2018), Costlow says Colorado's rafting guides have adapted by using smaller boats, lightening their loads to avoid running aground on exposed rocks, and tailoring the message of “low water, but not no water,” to attract tourists during dry times. Yet the rafting industry is highly tied to the school calendar and the timing of summer vacations. If peak runoff continues to decline and shift earlier—as reports like the Colorado Climate Change Vulnerability Study project—it could significantly shorten the rafting season, Costlow says.

Perhaps Colorado's most iconic business to face a direct threat from climate change is the ski industry. Many projections, including those contained in the 2014 report *Climate Change in Colorado*, indicate that global warming will shorten the ski season by boosting winter temperatures, increasing the number of frost-free days, bringing rain to high elevations at times when it previously snowed, and shrinking the window where conditions are cold enough for man-made snowmaking. A 2014 report from the Aspen Global Change Institute, a climate science nonprofit, projected that Aspen will see all of these changes in the coming decades, and found that the city's frost-free period has already lengthened by over one month since 1940.

Officials at the Aspen Skiing Company confirm they've seen evidence of warming. “We are noticing that both seasonally and in any given opportunity, the window for snowmaking is getting smaller,” says Auden Schendler, vice president of sustainability for the Aspen Skiing Company (SkiCo). That snowmaking window is based on cold temperatures, but