

# MARYLAND'S POST-2020 GREENHOUSE GAS REDUCTION TARGET SETTING



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## INTRODUCTION

Maryland's target to reduce greenhouse gas emissions 25 percent from 2006 levels by 2020 is ambitious and has put it in the company of leading states. As 2020 nears, it is becoming increasingly clear that Maryland will likely achieve this goal. However, the challenges associated with climate change extend well beyond 2020, and with the target date fast approaching, the question arises of what the state's post-2020 goals should be.

Governments and other parties seeking to reduce greenhouse gas emissions responsible for climate change are looking to climate science, peer governments, and leaders in the environmental community and elsewhere for guidance on appropriate target setting.

The Center for Climate and Energy Solutions (C2ES) reviewed the actions of seven leading states that set either mid-term (2030) and/or longer term (2050) goals along with the global, consensus scientific guidance to determine options Maryland might pursue.

Key Recommendations:

- Maryland should set a mid-term (2030) and a long-term (2050) target to create a signal to public and private actors considering long-term investment within the state. Additionally, this would encourage clean energy policies with longer payoff periods, i.e., policies that may take decades to realize the results.
- Maryland should consider the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report (AR4) recommendation of an 80–95 percent reduction by 2050. A mid-term goal of 40–45 percent reductions by 2030 would put the state on track to achieve these deeper reductions.

- Maryland need not identify all of the programs and policies required to achieve its reduction targets—it may not be realistic or possible. However, it should try to specify the main programs it intends to pursue and provide an estimate of how close these programs will come to achieving its target. Any gap between the projected reduction from identified programs and the target can be closed through likely advances in technology and future policies.

## CLIMATE SCIENCE

The international scientific consensus, represented through IPCC reporting, is fairly clear on the quantity of emissions reductions and the timeframes required to avoid the most harmful effects of climate change.

The IPCC was established by the United Nations to provide a clear, scientific view on climate change. Contributing scientists from all over the world review the latest climate research, on a voluntary basis, and assess its potential environmental and socio-economic impacts.

Over the past 25 years, the IPCC has produced five major assessment reports (AR). With each successive report, the body has become increasingly certain that warming over the past 50 years is due to human activities. Furthermore, its assessment of scenarios identifies that in order to have a greater than 50 percent chance of avoiding 2 degrees Celsius (3.6 degrees Fahrenheit) of warming (relative to pre-industrial levels) and avoid the harmful effects of climate change, carbon dioxide levels in the atmosphere need to be stabilized around 450 parts per million (ppm). To meet this target, the IPCC noted in its fourth assessment (AR4) that developed countries

would need to reduce emissions 25–40 percent below 1990 levels by 2020 and 80–95 percent below 1990 levels by 2050.<sup>1</sup> The fifth assessment report released in 2014, noted that individual country-pledged goals under the Cancun Agreements were unlikely to put us on a path to avoid 2 degrees Celsius of warming. Notably, this is because the Cancun pledges in aggregate were significantly lower than the reductions outlined in AR4.

## TARGET SETTING

### NATIONAL LEVEL

In response to the IPCC reports, some leading countries—through the ongoing United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) negotiations—have publicly declared their support for deep cuts in global emissions. Leading countries have inspired others, developed and developing countries, to participate in the upcoming COP 21 to be concluded in Paris in December. Already, countries have submitted emission reduction pledges or “intended nationally determined contributions” representing nearly 60 percent of global emissions. Though, these reductions are likely to go further than the Cancun pledges in 2010, they are not yet strong enough to put the world on a path to avoiding 2 degrees Celsius of warming. Subnational efforts by large businesses, provinces, states and municipalities can help close the gap.

In June 2015, the seven largest economies or G7 nations issued a communiqué outlining their common resolve to decarbonize their economies. While the non-binding agreement sets a less ambitious 2050 target (40–70 percent reductions from 2010 levels) than the IPCC AR4 450 ppm scenario, the G7 nations remarkably agreed to phase out all fossil fuels from their countries by 2100.

### STATE LEVEL

U.S. states, too, have been demonstrating climate action. During the past 15 years, 18 states have set greenhouse gas emission reduction targets through legislation or executive orders.<sup>2</sup> Some are now displaying their commitment on the global stage. Through the “Under2MOU,” signed in May 2015, California, Oregon, Vermont and Washington joined other sub-national governments to demonstrate to the international community their

continued resolve to cut carbon pollution and achieve the 2050 IPCC target.<sup>3</sup> These announcements will be aggregated and accounted for in the UNFCCC NAZCA platform (Non-state Actor Zone for Climate Action) that will be released at COP 21 in Paris.<sup>4</sup>

### *Comparing Maryland's Climate Target with Leading States*

Maryland's emissions reduction target date is fast approaching, giving rise to the question: What should its post-2020 goals look like? With a number of states actively pursuing longer-term climate goals, there is an opportunity to review their efforts and consider Maryland's options.

C2ES reviewed a subset of the 18 states that have set emission reduction targets for the mid-term and 2050 range, focusing solely on states that continue to demonstrate leadership through the following actions:

- Greenhouse gas reduction goals set by legislative action or executive order;
- Reporting requirements and obligations to update the original climate plans, which institutionalize the goals and create accountability; and
- Demonstrated ongoing action to reduce emissions through participation in a cap-and-trade program such as the Regional Greenhouse Gas Initiative (RGGI), and/or aggressive pursuit of other actions.

The seven states, exclusive of Maryland, that meet these criteria are: California, Maine, Massachusetts, New York, Oregon, Vermont, and Washington. The climate targets of each are presented in Table 1.

Nearly all of the leading states—including Maryland—have set a near-term goal for 2020. However, only the near-term targets of Massachusetts and Vermont align with the IPCC's scenario to avoid 2 degrees Celsius of warming. Maryland's target differs from the others because it uses a 2006 baseline year. To make a fair comparison between Maryland and other leading states, Maryland's target should be adjusted to account for any change in greenhouse gas emissions between 1990 and 2005.<sup>5</sup>

The majority of leading states have set post-2020 targets. Four of the seven have established a mid-term target between 2028 and 2035, and six of the seven have set 2050 goals.<sup>6</sup> The 2050 goals are remarkably similar.

**TABLE 1: Reduction Targets of Leading U.S. States**

STATE	BASELINE YEAR	NEAR-TERM		MID-TERM				LONG-TERM
		2012	2020	2028	2030	2032	2035	2050
CA	1990		0		-40%			-80%*
ME	1990		-10%					
MA	1990		-25%					-80%
NY	1990				-40%			-80%
OR	1990		-10%					-75%
WA	1990		0%				-25%	-50%
VT	1990	-25%		-50%				-75%
MD	2006		-25%					

\* Target set in executive order, proposed bill would codify target

Goals set by California, Massachusetts, and New York fall within the IPCC’s 450 ppm scenario to achieve 80–95 percent reductions by 2050 (though they are on the low end), and Oregon and Vermont come very close.

California, Massachusetts, New York, Oregon and Vermont have cited the IPCC guidance in setting their targets. Maine, Oregon, and Vermont cited the 2001 New England Governors/Eastern Canadian Premiers Climate Action Plan as a resource. Additionally, some states, such as Washington, turned to regional scientific information about projected impacts under different emissions scenarios as a basis for their goals.<sup>7</sup>

Generally, we have observed that states and others set or publicly announce targets first and later reveal the strategies, policies and programs to meet them. Additionally, states approach the question of administration of the goals in different ways. Notably, the California and Massachusetts statutes establish enforcement capacities and penalty options for non-compliance. The five other leading states use the targets in a more aspirational manner, with no penalties for falling short of the goals.

**BENEFITS OF LONG-TERM TARGET SETTING**

There are a number of reasons why setting post-2020 targets are in Maryland’s interest.

First, a long-term goal signals support for an increasingly low-carbon economy, providing the kind of certainty that attracts business. The state is likely to attract

companies and entrepreneurs that want to directly participate in decarbonizing the economy, bringing new jobs along the way. Also, Maryland is likely to attract businesses that are supportive of the continued effort to reduce emissions. At the same time, it is likely to steer heavy-emitting industries to other states without emission targets. For example, large petrochemical companies, taking advantage of low natural gas prices in the Marcellus Shale region, are already considering billion-dollar investments in new facilities in neighboring West Virginia and Pennsylvania.

Second, a longer view would open the door to additional policy options to mitigate emissions. Targets out to 2050 would favor longer-term government policies whose benefits typically accrue decades in the future, such as reforestation efforts or transportation initiatives like public transit systems. Without a long-term goal in place, such beneficial projects may not be properly assessed or considered.

Third, numerous studies project serious and costly impacts to public health and the economy that increase over time, particularly if little action is taken to reduce emissions.<sup>8</sup> Already, Maryland is seeing some of the types of impacts expected to occur more frequently and with greater intensity in the future due to climate change. It will take collective action like the UNFCCC process and subnational actions to lessen the expected effects of climate change. By doing its part to promote mitiga-

tion activities in the mid- and long-term within the state, Maryland will be showing others the way, which could inspire others to join in the collective action necessary to reduce the negative impact, costs and risks that arise from delayed action. Moreover, adopting strong post-2020 targets would maintain Maryland's climate leadership.

## CONCLUSION

To continue its climate leadership, Maryland should consider setting post-2020 reduction targets in line with the scientific guidance and the actions of other leading states. The scientific conclusions of the AR4 from the IPCC indicate that to stabilize global carbon dioxide levels around 450 ppm, developed economies should achieve 80–95 percent emissions reductions from 1990 levels by 2050. This guidance has heavily influenced leading countries and leading U.S. states. Establishing a mid-term goal of 40–45 percent reductions by 2030 would put Maryland on track to achieve these deeper reductions by 2050.

Maryland cannot tackle the climate change issue on its own. However, by working to mitigate emissions today, setting strong reduction targets well into the future, and by growing a clean energy economy while creating a cleaner environment, Maryland is creating a powerful example that many others will want to follow.

## ENDNOTES

1 Intergovernmental Panel on Climate Change Fourth Assessment Report Working Group 3, "Chapter 13: Policies, Instruments and Co-operative Arrangements." p. 776. 2007. Available at: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter13.pdf>.

2 This number refers to economy-wide reduction targets; Delaware and New Hampshire technically have legislated emission reduction targets enacted through the enabling RGGI legislation.

3 <http://under2mou.org>.

4 <http://www.theclimategroup.org/what-we-do/programs/compact-of-states-and-regions>.

5 Although an accurate 1990 inventory of Maryland's greenhouse gas emissions is not available, it has been suggested by certain officials that 1990 and 2006 emission levels were similar.

6 Although Maine has not adopted a long-term target date, the 2003 legislation notes the potential need for long-term reductions of 75–80 percent below 2003 levels.

7 The earth is not expected to warm uniformly; for example, regions closer to the poles are expected to experience greater levels of warming. For this reason a changing climate will be experienced differently based on location and geography, among other factors.

8 <http://riskybusiness.org/index.php?p=reports/national-report/regions/northeast> and <http://nca2014.globalchange.gov/report/regions/northeast>.



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