



Adding up the Numbers: Mitigation Pledges under the Copenhagen Accord

In the Copenhagen Accord, countries agree that “deep cuts in global emissions are required... so as to hold the increase in global temperature below 2 degrees Celsius...”¹ To date, nearly 50 parties (counting the European Union as a single party) have submitted specific mitigation pledges under the Accord.² Several analyses summarized below have assessed whether these pledges are consistent with the goal of limiting global temperature increase to 2 degrees Celsius.

The Pew Center’s review of these analyses (see below) finds that:

- Most show the pledges are inadequate to achieve a 2-degree goal, and instead imply a global emissions pathway leading to 3 to 3.9 degrees of warming.
- Collectively, the pledges would reduce global emissions between 4 percent and 16 percent below business as usual (BAU) in 2020. (All projections of the pledges’ impact on emissions show ranges of reductions because many of the pledges specify ranges, with the more ambitious end of the range applying if stipulated conditions are met.³) A 2-degree pathway requires reductions of 21 percent to 26 percent below BAU.
- Pledges by developed countries would reduce their emissions 10 percent to 13 percent below BAU in 2020, and pledges by developing countries would reduce their emissions 6 percent to 9 percent below BAU.

Key findings of the individual analyses include:

“Taking Stock – the emission levels implied by the pledges to the Copenhagen Accord”, Project Catalyst, 2010.⁴

- Pledges under the Copenhagen Accord place the world on a pathway of greenhouse gas (GHG) concentrations of 550 parts per million (ppm), or a temperature rise of 3 degrees Celsius or more.
- Even at the more ambitious end of the range, the pledges fall 5 Gigatons (Gt) short of the global reductions needed in 2020 to achieve a 450-ppm pathway.
- Post-2020, it would be highly infeasible to achieve a 450-ppm pathway; this would require reductions of 30 Gt below BAU in 2030, but only 19 Gt will be feasible at a cost of less than 60 euros (approximately US\$83) per ton.

“Copenhagen Climate Deal: How to Close the Gap?”, Climate Action Tracker, 2009.⁵

- Pledges under the Copenhagen Accord will put the world on a pathway of 3.2 to 3.5 degrees Celsius by 2100.
- Even at the more ambitious end of the range, there is a gap of 4 Gt to 8 Gt between what the projected emission reductions in 2020 and what is required to achieve a 2-degree pathway.
- In a best-case scenario, emission reductions by developed countries will amount to 0.8 Gt to 2.2 Gt below BAU by 2020 (or 11 percent to 19 percent below 1990 levels). Developing countries will reduce emissions between 0.8 Gt to 3.2 Gt below BAU by 2020.

¹ Copenhagen Accord, Para 2. http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf

² See summary of pledges at <http://www.pewclimate.org/copenhagen-accord>

³ For instance, the European Union has proposed an unconditional target of reducing emissions 20 percent below 1990 levels by 2020. However, if other developed countries commit themselves to comparable emission reductions and developing countries contribute adequately according to their responsibilities and respective capabilities, the European Union will increase its target to 30 percent below 1990 levels by 2020.

⁴ http://www.project-catalyst.info/images/publications/project_catalyst_taking_stock_february22_2010.pdf

⁵ http://www.climateactiontracker.org/briefing_paper.pdf and http://www.climateactiontracker.org/pr_2010_02_02.pdf



“Copenhagen, the Accord, and the Way Forward”, Trevor Houser, 2010.⁶

- Globally, pledges under the Accord will reduce emissions 7 percent to 13 percent below BAU in 2020.
- Pledges by developed countries will reduce emissions 10 percent to 13 percent below BAU in 2020 and pledges by developing countries will reduce emissions 6 percent to 9 percent below BAU.
- If the pledges are fulfilled, atmospheric greenhouse gas concentrations will peak at 487-490 ppm by 2020. Depending on the model used, this could lead to warming of 1.3 to 2.4 degrees Celsius.⁷

“Copenhagen Accord Submissions”, Climate Interactive, Press Release of February 4, 2010.⁸

- Pledges under the Accord will place the world on a path of 3.9 degrees Celsius by 2100.
- Global GHG emissions will rise at a rate of 0.8 percent annually between now and 2020.

Summarizing the Results

The above studies employed different data and metrics in evaluating the potential impact of the Copenhagen Accord on global emissions and temperatures. In order to create a common metric summarizing results across these analyses, the Pew Center used data contained in the studies to calculate: the emission reductions below BAU that each anticipates in 2020 under the Accord; and the reductions below BAU that each assumes would be required in 2020 to achieve a 2-degree pathway.

Impact of Mitigation Pledges under the Copenhagen Accord

Source ⁹	Temperature or GHG concentration pathway	Global emission reductions in 2020 below BAU	Global emission reductions below BAU needed in 2020 to achieve a 2-degree pathway
Project Catalyst	550 ppm	9-16%*	24%*
Climate Action Tracker	3.2 to 3.5 degrees Celsius by 2100	4-16%*	26%*
Houser	Peaking at 487-490 ppm in 2020	7-13%	21%*
Climate Interactive	3.9 degrees Celsius by 2100		

* Calculated by the Pew Center on the basis of data contained in the respective analyses.

⁶ <http://www.iie.com/realtime/?p=1173>

⁷ This assumes that post-2020 no country is required to reduce emissions at a greater annual rate than would be required of the United States under the House-passed American Clean Energy and Security Act, or to reduce per capita emissions below that of the European Union assuming the European Union achieves its target of reducing emissions by 80 percent below 1990 levels by 2050.

⁸ <http://climateinteractive.org/scoreboard/press/copenhagen-cop15-analysis-and-press-releases/Copenhagen%20Accord%20Submissions%20Press%20Release%204%20February%202010.pdf/view>

⁹ Studies use different emissions data sources.