

UNFCCC Report on Country Pledges and Global GHG Emissions: Gonna Take You Higher

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The UN Framework Convention on Climate Change (UNFCCC) recently released [Synthesis report on the aggregate effect of the intended nationally determined contributions](#), its stab at analyzing the impact country pledges will have on global greenhouse gas (GHG) emissions.

The analysis looked at 119 Intended Nationally Determined Contributions (INDCs), covering about 80% of global net GHG emissions, the UNFCCC received as of 1 October 2015. For the uninitiated, each country's INDC lays out (in varying degrees of specificity) its GHG emissions reduction pledge in support of a new, post-2020 international climate change agreement that will be hashed out in Paris in December.

What the analysis found won't surprise anyone who's followed this process for any length of time. If every country fulfills its INDC to the letter—including unconditional as well as conditional elements—emissions in 2030 will be considerably higher than they are today.

The UNFCCC report approaches the results from a number of different angles, two of which we'll focus on in this post. First, we'll look at future emissions under the INDCs and see if they are higher or lower against a 2010 global emissions benchmark. Second, we'll take a look at the how the INDCs might change (*i.e.*, lower) the trajectory of future global GHG emissions.

INDC Scenarios vs. 2010 Emissions

So will the Paris agreement lead to lower absolute global greenhouse gas emissions in 2030? No.

The UNFCCC estimates that global GHG in 2010 were about 48.1 billion metric tons of CO₂ equivalents (TCO₂). Global emissions in 2030 resulting from implementing the INDCs are expected to reach 56.7 billion TCO₂, about 8.6 billion TCO₂ higher than the 2010 level.

These reductions could be larger if all of the countries were able and willing to implement the conditional as well as the unconditional aspects of their INDCs and, where reduction goals are presented in a range, to achieve their highest levels of ambition. In other words, achieve the maximum effort. The UNFCCC found that under this very optimistic scenario, global emissions would still rise to between 52.6 to 56.1 billion TCO₂ eq., still about 4.5 to 8 billion TCO₂ eq. higher than the 2010 level.

Unfortunately the UNFCCC report doesn't go into any detail on which countries will be doing all of the heavy lifting. That's why we're here. Using data submitted to the UNFCCC and the goals in

the INDCs, we've been able to come up with some estimates of what developed countries and developing countries could be expected to deliver if the INDCs are implemented to the letter.

We estimate that if all developed countries ("Annex I Parties," in UNFCCC jargon) reached the emission targets in their INDCs, their combined emissions would be 2.6 billion TCO₂ *lower* in 2030 than in 2010. This figure is deceptive because it masks an estimated 1.5 billion TCO₂ *increase* in emissions from Belarus, Russia, Turkey, and Ukraine, even if their INDC goals are reached successfully. This means emissions from all of the other developed countries have to plunge by 4 billion TCO₂ to get to a 2.6 billion TCO₂ total cut for the Annex I country group.

If that's the case, it follows that the UNFCCC expects emissions in developing countries ("Non-Annex I Parties") would jump anywhere from 7.1 to 10.6 billion TCO₂ eq. from 2010 to 2030. That's like adding emissions equal to about 1.2 to 1.8 times total U.S. emissions in 2010.

As a result of the UNFCCC analysis, two things are clear: (1) even under the most optimistic assumptions, all of the actual burden of reducing emissions (about 4.1 billion TCO₂ by our reckoning) would fall on Australia, Canada, Europe Union, Japan, New Zealand, and the United States, countries that accounted for just about 27% of total global GHG emissions in 2010; and (2) the emissions reductions from these countries will be swamped by much larger emission *increases* from elsewhere in the world, including from other Annex I countries.

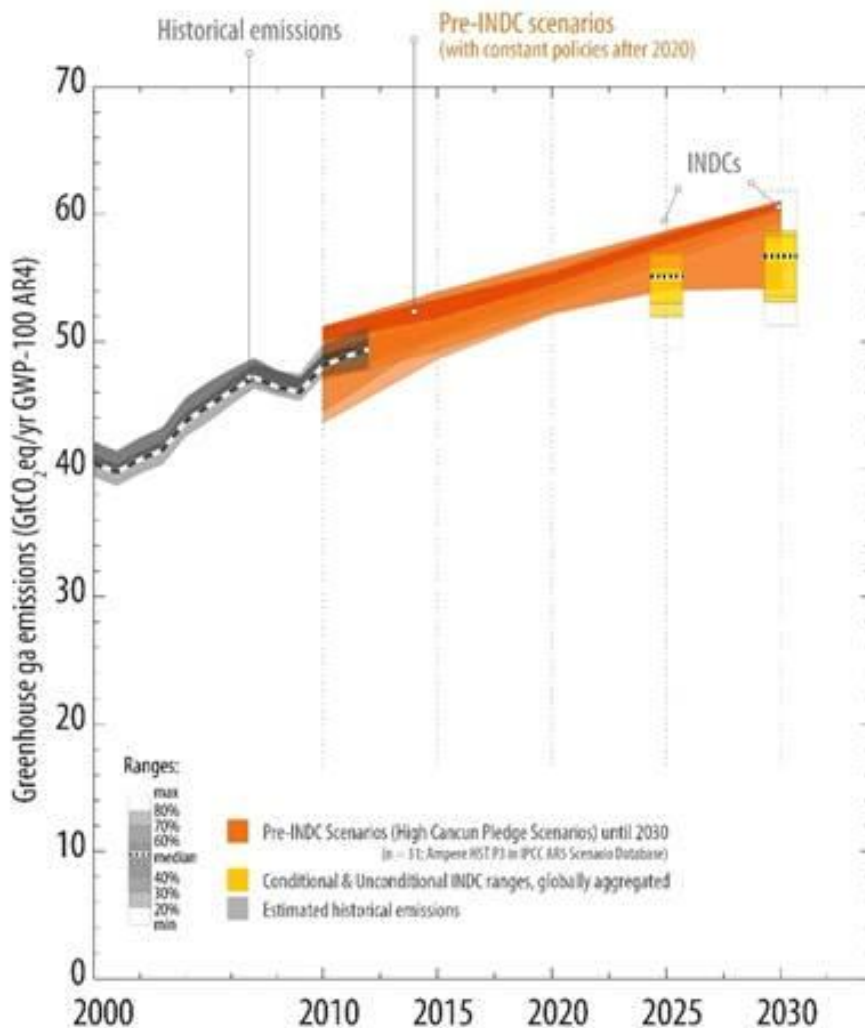
INDC Scenarios vs. "Business-as-Usual" Scenarios in 2030

Accepting this, isn't it likely that these emissions still will be much lower than they would have been otherwise without the INDCs. According to the data presented by the UNFCCC, the answer again is probably no.

The UNFCCC used existing or developed new forecast scenarios that looked at where global emissions might be headed both with and without the emissions cuts pledged in the INDCs. These are, respectively, the "INDC scenarios" and the "pre-INDC scenarios." The pre-INDC scenarios function as business-as-usual base cases, as they reflect the 2020 pledges countries made pursuant to the Cancún Agreement extrapolated out to 2030. The range of business-as-usual outcomes is represented by reddish band in the UNFCCC chart reproduced nearby.

As mentioned earlier, the INDC scenarios estimate global emissions for 2025 and 2030 under the 119 INDCs made public thus far. These emission ranges are represented by the two yellow boxes in the chart.

Global emission levels resulting from the implementation of the communicated intended nationally determined contributions by 2025 and 2030 in comparison with trajectories consistent with action communicated by Parties for 2020 or earlier



Source: Intergovernmental Panel on Climate Change Fifth Assessment Report scenario database and own aggregation.

Abbreviations: AR4 = Fourth Assessment Report of the Intergovernmental Panel on Climate Change, GWP = global warming potential, INDCs = intended nationally determined contributions.

Notice that the median (dotted line) for the INDC scenarios in 2030 (and 2025) falls well within the reddish band, as does most of the range of emissions represented by the INDC scenarios (yellow boxes). If countries implement their INDCs as the UNFCCC expects, global emissions in 2030 are not likely to be appreciably different from business as usual.

The report, however, does its best not to draw attention to this conclusion its own data and chart support. Instead, it examines at some length in the text how the various INDC scenarios

stack up against a subset of the pre-INDC scenarios that, according to the [model documentation](#), represent a “lenient interpretation of the national Copenhagen [i.e., Cancún] pledges and their extrapolation to 2030.” Using these scenarios has the effect of creating a very high emissions base line (see the dark red band within the red band in the chart), and that, of course, makes the INDC scenario emission forecasts look that much better against the business as usual base case (notice how the yellow vertical band for 2030 is well below the dark red strip in the chart).

In choosing to peg its analysis around such a high base line projection, the UNFCCC is implying what many have suspected all along: the current Cancún pledges are being more honored in the breach than in the observance. If the UNFCCC assumed the Cancun pledges were being implemented robustly than it apparently believes is the case, it’s a sure bet the most INDC scenarios would fall well within the orbit of business as usual. Can’t have that, and so the “lenient” base line.

This may seem like a small point, but it just goes to show how very fragile the various agreements and country pledges truly are, which leads to an obvious question: If, as its analysis indicates, the UNFCCC believes that the pre-2020 Cancún pledges are being implemented only leniently, what does that say about the willingness of countries to implement vigorously their post-2020 INDCs, especially their conditional aspects?

Regardless, the upshot is that when taking into account the broad range of possible outcomes, it’s likely that even if countries fulfill their commitments, the INDCs probably won’t result in a global GHG emissions trajectory that is much below business as usual. (Where have we heard that before? [Here](#) and [here](#).)

From a broader perspective, the UNFCCC study confirms a climate change truism: Taking action to address climate change will always take a back seat to economic development and poverty eradication almost everywhere in the world.

Around the time this UNFCCC report was issued, [Reuters](#) reported that “in Asia alone this year power companies are building more than 500 coal-fired plants, with at least a thousand more on planning boards.” According to Laszlo Varro, an International Energy Agency official, “Electricity is increasing its share in total energy consumption and coal is increasing its share in power generation.” And that’s just in Asia. The story’s pretty much the same in most other parts of the world.

If that doesn’t look a carbon constrained world, it’s because it’s not.