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CLIMATE

Double counting risks for ITMOs within and outside NDCs

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Article 6 of the Paris Agreement establishes a framework for international carbon market cooperation to drive ambitious emissions reductions, but its success depends on cooperating countries - and international airlines* - only counting transferred emissions reductions once. "Double counting" occurs when the same emissions reduction is counted by both the buyer and the seller, e.g., counted towards the climate change mitigation effort of both the host country and another country, or international airline.

For countries to meet their climate goals, they must avoid the risk of "double counting" emissions reductions by finalizing clear and unambiguous international guidance during negotiations to be concluded under Article 6 of the Paris Agreement. To assist countries in their deliberations, Environmental Defense Fund conducted an original, preliminary analysis of the scope of potential double counting of emissions reductions traded as internationally transferred mitigation outcomes (ITMOs) under the Paris Agreement. Since countries remain divided on whether - and an under what circumstances - emissions reductions generated outside NDCs may be transferred and counted toward emission reduction efforts, EDF's analysis focused on the risks of double counting emissions reductions from outside NDCs.

Key Take-Aways

• A volume of emissions reductions equivalent to between 6.5% and 38% of yearly global emissions could be considered at "high risk" of double counting, based on an analysis of emissions coverage and mitigation target types derived from each nation's nationally determined contribution (NDC) under the Paris Agreement.

• Even the most conservative estimates of potential emissions reductions outside the scope of NDCs amount to roughly half the annual emissions reductions forecasted to occur in 2030 under full NDC implementation versus a current-policy baseline estimate in the same year (~3 GT).

• Assessed cumulatively, the total volume of out-of-scope emissions from 2020-2030 ranges from about 100% to nearly 250% of the cumulative emissions reduction ambition within NDCs over the same time period, with the high-end estimate assuming linear emissions growth in non-NDC sectors (Table 2).

Full Summary

Estimates of uncovered emissions were determined first by assessing sectoral and greenhouse gas coverage listed within each nation's NDC. We then crafted four scenarios (see Table 1) that placed different assumptions on the relative risk of each nation's uncovered emissions, based on the type of mitigation target declared within NDCs. We created distinct scenario conditions for India and China due to the relative ambiguity of their mitigation targets and sector coverage within their NDCs, as well as the materiality of their emissions volumes.

Table 1: Scenario Comparisons and Descriptions

	Target Type Assumptions	China and India Assumptions
Scenario 1A	1. All targets considered low risk, filtered by sector and GHG coverage.	A. China economy-wide, just CO2; India economy-wide, all GHGs
Scenario 1B	1. All targets considered low risk, filtered by sector and GHG coverage.	B. China power sector, just CO2; India NDC mentioned sectors, all GHGs
Scenario 2A	2. Only absolute limit NDC targets considered low risk.	A. China economy-wide, just CO2; India economy-wide, all GHGs
Scenario 2B	2. Only absolute limit NDC targets considered low risk.	B. China power sector, just CO2; India NDC mentioned sectors, all GHGs

We found that, even if we assume full economy-wide CO2 coverage in China's NDC and full economy wide coverage of all GHGs in India (one of the most generous coverage scenarios in our set), the range of possible uncovered emissions volumes that could be at high-risk of double counting is substantial—especially when examined in relation to total NDC ambition.

Even our conservative estimate of the total annual volume of emissions that fall outside NDCs is approximately 3 GT - half the magnitude of the annual emissions reductions forecasted to occur in 2030 under full NDC implementation versus a current policy baseline estimate. What's more, three out of the four risk scenarios estimate that the total volume of emissions at risk of double counting exceeds the magnitude of the annual emissions reductions forecasted to occur in 2030 (Leslie, 2018).

Extrapolating the lowest estimate of annual emissions outside of NDCs (equating to 6.5% of world emissions outside NDCs, or ~3 GT annually) over the period from 2020-2030, and assuming growth in non-NDC emissions over that time, the cumulative amount of emissions outside NDCs will be greater than the total CO2 reductions from full NDC implementation from 2020-2030 (See Table 2).

These numbers could be even higher if India and China's NDC coverage is less comprehensive than we assume in our "best case" scenario. While India's intensity-based mitigation target can be interpreted as economy-wide, it is not clear how corresponding adjustments (required to avoid double counting) would apply to intensity-based targets. Therefore, if we take a conservative approach and assume that only sectors mentioned in their NDC for mitigation actions will have sufficiently transparent accounting practices to be considered as "covered," then cumulative emissions outside of NDCs would be more than 1.6x the world's cumulative emissions reductions from 2020-2030.

Table 2 illustrates these coverage scenarios together.

Table 2: Extended coverage comparisons to cumulative emissions reductions from NDC implementation

	GtCO2e
Total Forecasted Cumulative Emissions Reductions due to NDC Implemention, Unconditional only, 2020-2030	22
Total Forecasted Cumulative Emissions Reductions due to NDC Implemention, Unconditional and Conditional, 2020-2030	33
Total Estimated Cumulative Volume of Emissions Outside NDCs (All China Co2, All India GHGs), assuming baseline growth in non-NDC sectors, 2020-2030	34
as % of unconditional NDC ambition	*155%*
as % of conditional and unconditional NDC ambition	*103%*
Total Estimated Cumulative Volume of Emissions Outside NDCs (All China Co2, Only India NDC Sectors, all GHGs), assuming baseline growth in non-NDC sectors, 2020-2030	53.6
as % of unconditional NDC ambition	*244%*
as % of conditional and unconditional NDC ambition	*162%*

While China and India represent the largest potential share of uncovered emissions, the uncovered emissions of the next 10 countries represent approximately an additional 2.5% of global emissions, as shown in Table 3. In six out of these 10 countries, total emissions outside the scope of the NDC represent more than half of national emissions. Therefore, the issue of NDC coverage is not restricted to conditions within India and China alone.

In sum, this analysis suggests that double counting risk is not supply-limited, but rather demand-limited, and even partial double counting of emissions outside NDCs could significantly degrade the total climate ambition attained through NDC implementation. The transfer of emissions reductions from outside of NDCs may also have implications for the ability of developing countries to progressively expand the scope of their NDCs (encouraged under Article 4.4 of the Paris Agreement), unless such transfers are accounted consistently with transfers of in-scope reductions.

Table 3: Top 10 Nations ranked by volume uncovered emissions (omitting China and India)

Country	ISO3	Total Annual Emissions (MMT, 2014)	Total Estimated Covered Annual Emissions (MMT, 2014)	Percent of National Annual Emissions Covered	Total Uncovered Annual Emissions (MMT, 2014)	Uncovered Annual Emissions as Percent of World (MMT, 2014)
Saudi Arabia	SAU	583.37	257.2	44.09%	326.17	0.64%
Bangladesh	BGD	196.93	51.9	26.35%	145.03	0.29%
Cameroon	CMR	196.56	83.05	42.25%	113.51	0.22%
Sudan	SDN	234.55	124.09	52.90%	110.47	0.22%
Iran	IRN	800.68	710.48	88.73%	90.2	0.18%
Egypt	EGY	272.69	200.26	73.44%	72.43	0.14%
Ecuador	ECU	94.53	25.51	26.99%	69.02	0.14%
Philippines	PHL	181.69	128.52	70.73%	53.17	0.11%
Zimbabwe	ZWE	63.79	12.28	19.25%	51.51	0.10%
Honduras	HND	49.6	21.35	43.05%	28.25	0.06%

*Airlines purchasing credits under the International Civil Aviation Organization's carbon offset program, known as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

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