

Some principles for Science-Based Target setting

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0. Targets must be consistent with the ultimate goals of the Paris accord, which calls for “holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre- industrial levels.”

1. Targets must call for reductions in absolute emissions: Science-based targets must be framed in terms of absolute emissions reductions, not emissions per dollar of sales, GDP, value added, or employee. Staying below 2°C requires rapid, deep cuts in total global emissions, even if population or GDP grow. A target that is relative to something that can grow is meaningless. Nature doesn’t care about CO₂ per dollar of sales; only total CO₂ emissions.

2. Targets must be strong enough to get to 2°C with a high probability. Matching the NDC (pledge) of your nation or the aggregate of all Paris pledges is not enough. If Paris were fully implemented, even with continued declines that have not yet been pledged, the world will still exceed 2°C. Earlier, deeper cuts are needed. See, e.g., <https://www.nature.com/news/three-years-to-safeguard-our-climate-1.22201> and <https://www.climateinteractive.org/programs/scoreboard/>. For example, [MIT’s pledge](#) is roughly the same as the US NDC (under Obama and still in force for now, though unlikely to be met under current policies). But even if the US meets that target, and all other nations meet their pledges, [the world will exceed 2°C by midcentury](#). A science-based pledge must be stronger than the Paris pledges.

3. Do your share: to have any decent chance of staying under 2°C, total global GHG emissions must fall dramatically, and soon. This requires emissions for your organization to fall at least as fast as the decline in aggregate global emissions required to limit warming to no more than 2°C. To the extent developing nations will cut their emissions more slowly than the global total consistent with <2°C, the emissions of developed nations, businesses and organizations seeking to set science-based targets must fall even faster.

4. No exceptions: There can be no exceptions based on the good work your organization may do in other domains. I have heard senior faculty at MIT and Harvard say that it’s not important that these institutions cut their emissions because of the great good they do in research that might lead to low-carbon energy technologies, or someday cure cancer, or...you name it. The climate responds to total emissions. Every ton of greenhouse gases you emit warms the climate, no matter how virtuous and noble the cause for which you generated those GHGs. If a loophole for virtuous work is opened, there will be no way to limit who uses it. MIT’s mission is “to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century...[and] to bring knowledge to bear on the world’s great challenges.” But if we exempt ourselves

because we have a mission to improve the world, then any organization will be able to explain that they aren't just in the business of making money, but that their mission is to help improve human welfare and so they should not have to cut as fast as others, or even at all. This includes every hospital and drug company ("we save lives"), every bank ("we enable people to own a home, send their children to college, live decently in retirement"), every Wall Street firm ("we raise the capital that funds innovation"), auto company ("we provide people with access to opportunity") and so on, ad nauseam. You may help the elderly across the street and volunteer in a soup kitchen; such virtue does not entitle you to cheat on your taxes. **No exceptions** no matter how worthy the work you do in other domains.