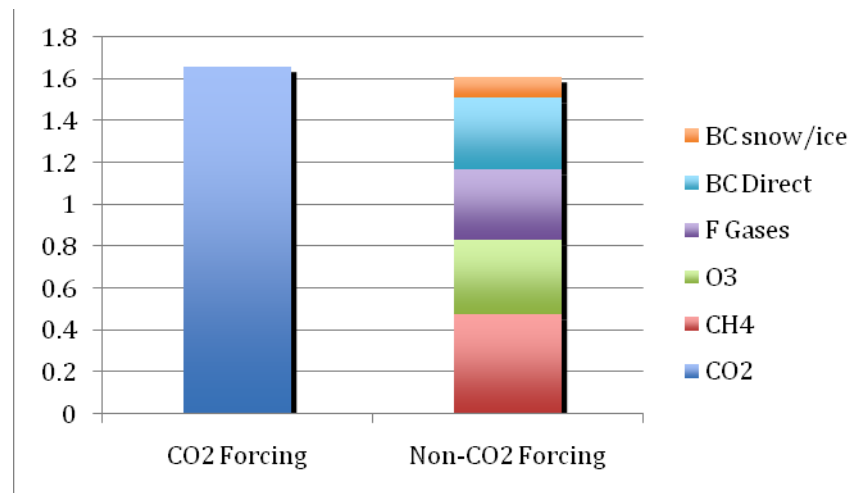




Top 10 Reasons for Addressing Non-CO₂ Climate Forcers (in addition to CO₂)

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- 1. Reducing CO₂ is not enough to stabilize the climate; short-lived, non-CO₂ climate forcers also must be reduced to bring atmospheric CO₂ concentrations down to a safe level of 350 parts per million.**
 - CO₂ is responsible for only half of total climate forcing.
 - Deep and sustained CO₂ reductions are essential to combat climate change. Carbon dioxide is the primary cause of global warming and must remain the mitigation priority. However, CO₂ reductions alone are not enough; the climate challenge is too immense to solve by addressing only half of the problem.
- 2. Reducing CO₂ will not address near-term concerns.**
 - CO₂ is long-lived and will continue to cause warming for many decades to centuries; non-CO₂ forcers on the other hand are short-lived, with atmospheric lifetimes ranging from a few days to a few decades.
 - Even after CO₂ emissions have stopped, significant temperature reductions will not occur for over 1,000 years. (Solomon, *PNAS*, 2009) Meanwhile, we may already be committed to warming that exceeds 2°C and puts us at risk of passing tipping points for abrupt and irreversible climate change.

Reducing the non-CO₂ half of climate forcing, including HFCs, black carbon soot, methane, and ground-level ozone can:

- 3. Produce strong collateral benefits quickly, including for public health (black carbon alone kills 1.6 million a year), agriculture, ecosystems, and regional air quality.**
- 4. Delay climate forcing by 4 to 5 decades worth of CO₂ emissions, and give us time to reduce CO₂ emissions, and perfect carbon negative strategies such as biochar, Calera's carbon negative cement, and possible air capture.**
- 5. Delay the day GHG emissions and accelerating feedback mechanisms push us past temperature tipping points for abrupt and irreversible climate impacts that could be beyond our ability to respond.**
- 6. Protect some of the most threatened and vulnerable elements of the Earth's climate system, including the Arctic, mountain glaciers, and critical fresh water reservoirs.**
- 7. Non-CO₂ mitigation technology is already available, making it possible to calculate costs (and benefits) accurately.**
- 8. Mitigation of non-CO₂ forcers is cost-effective.**
 - For example, experts estimate the cost of phasing down HFCs under the Montreal Protocol – avoiding more than 100 billion tonnes of CO₂-eq. – to be ≈US \$5 billion.
- 9. Non-CO₂ has some bipartisan support.**
 - The Montreal Protocol has always had bipartisan support in the U.S., and a black carbon bill in the U.S. Senate was sponsored by Sen. Inhofe.
- 10. Taking action on non-CO₂ forcers can build confidence and momentum for further effective action on CO₂.**