How the impact of Short-Lived Climate Pollutants depends on mitigation of Long-Lived Climate Pollutants

Myles Allen

School of Geography and the Environment and Department of Physics

University of Oxford

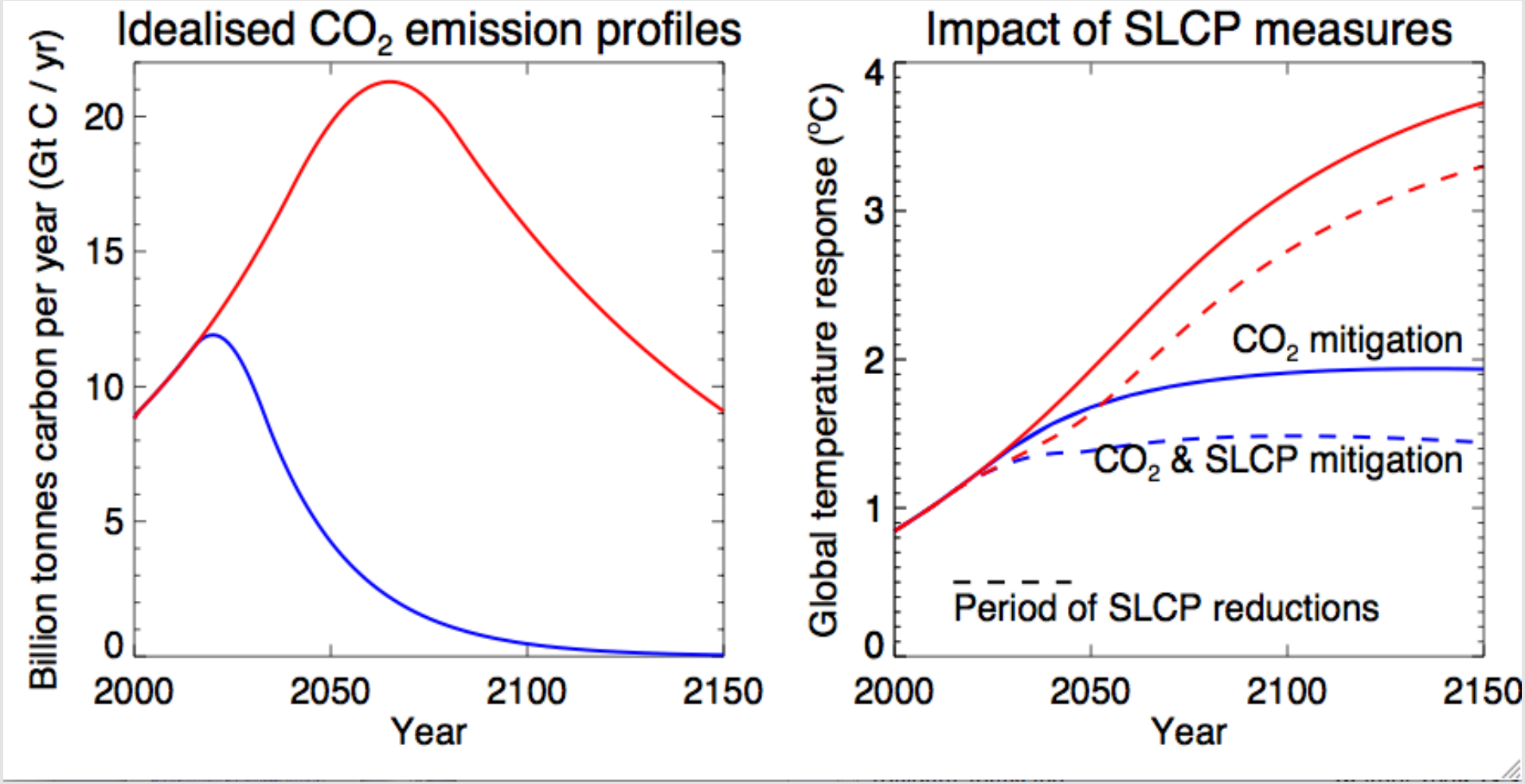
Thanks to: Niel Bowerman & David Frame & others

trillionthtonne.org
Explaining the need to limit cumulative emissions of carbon dioxide.

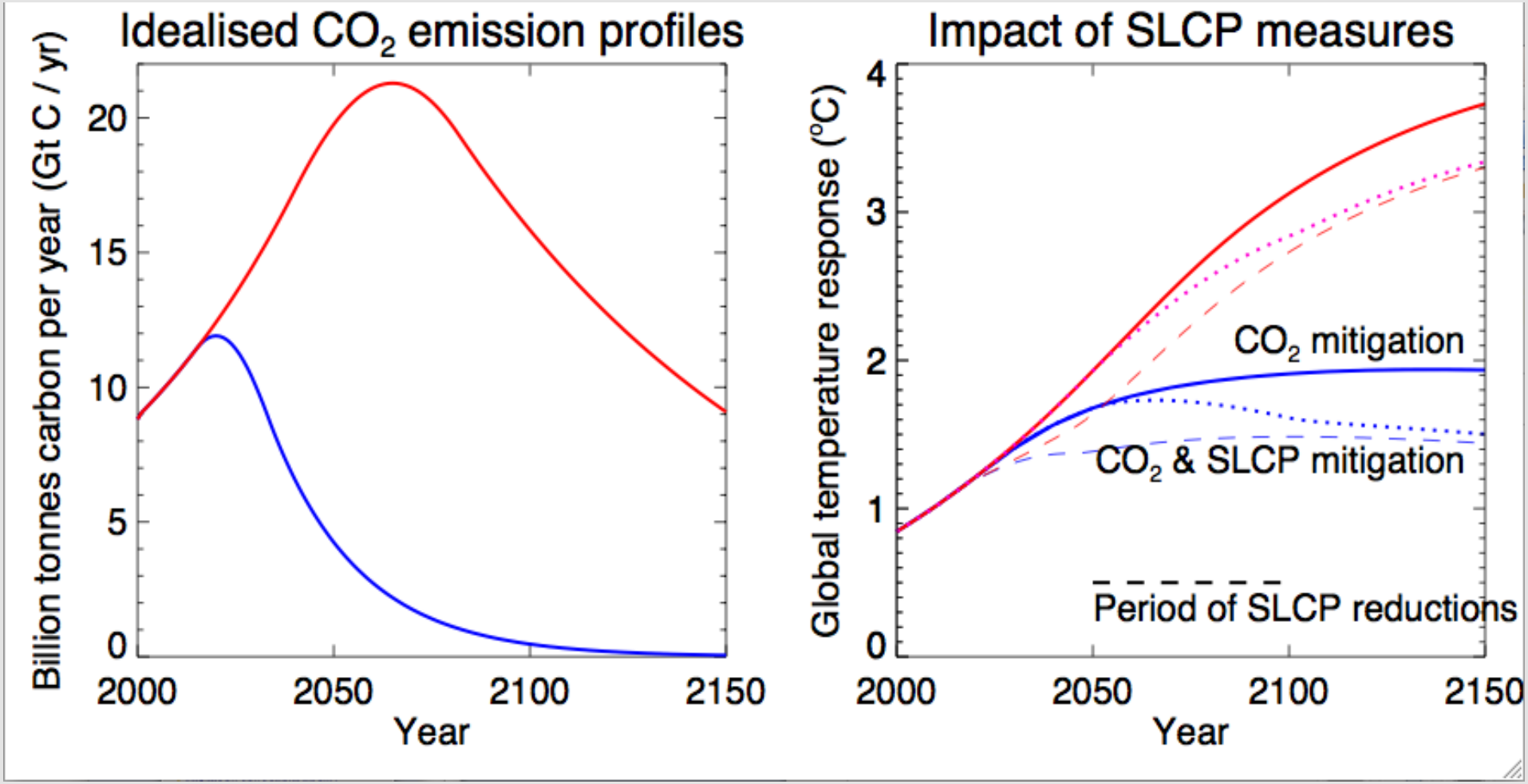
OXFORDMARTIN SCHOOL

UNIVERSITY OF OXFORD

Impact of idealised SLCP mitigation



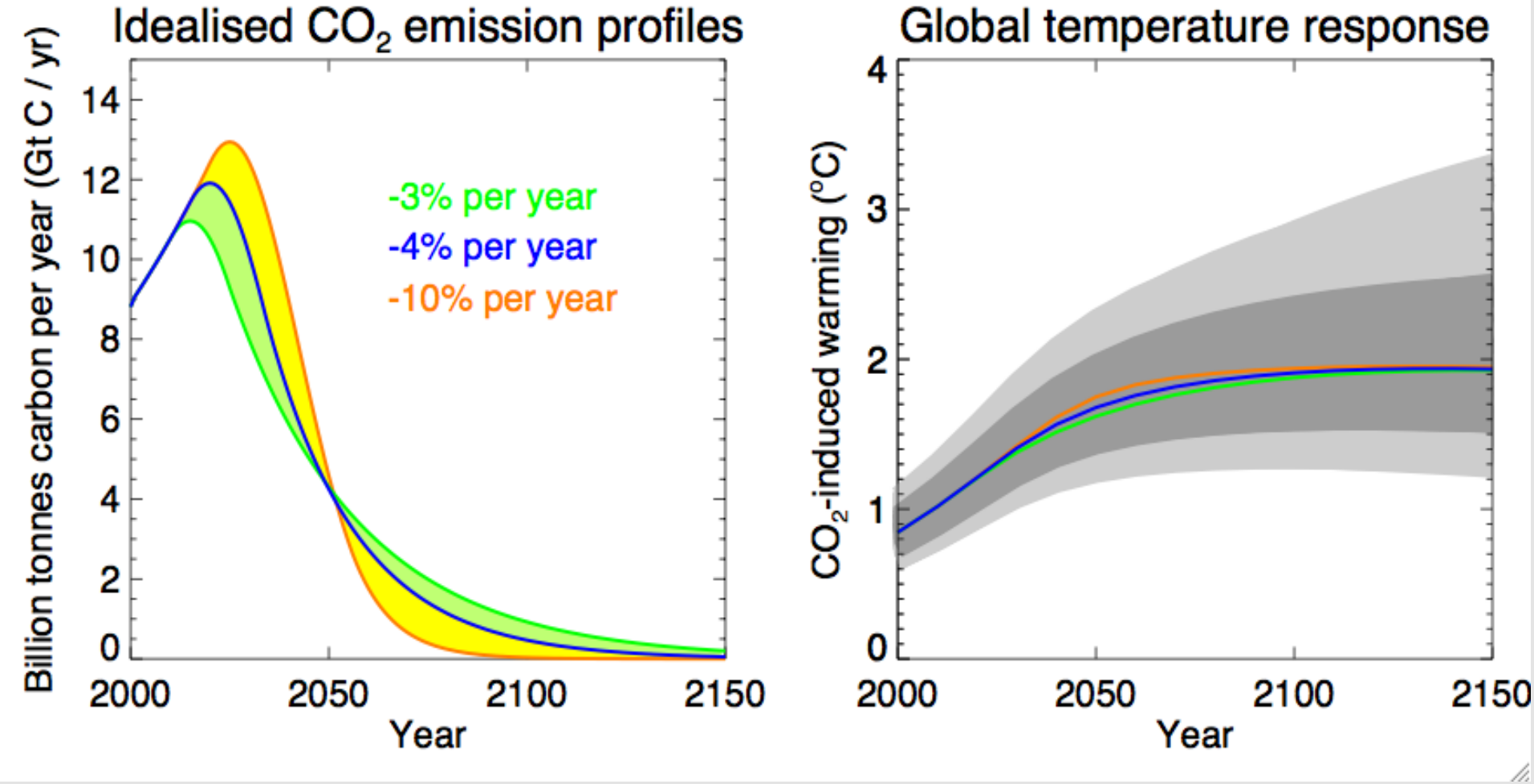
Impact of deferring SLCP mitigation to after 2050



Peak warming under various scenarios

	Early and aggressive SLCP mitigation	Late and slower SLCP mitigation
Early and aggressive CO_2 mitigation	1.5 ^oC	1.7 ^oC
Late and slower CO_2 mitigation	3.6 ^oC	3.6 ^oC

CO_2 emissions matter most because they accumulate, unlike SLCPs



Take home messages

- SLCP emissions only affect peak warming under aggressive mitigation scenarios when CO_2 emissions are falling rapidly.
- Unless temperatures approach their peak in the next few decades, it makes no difference to *peak* warming whether SLCPs are cut now or after 2050
  - (it does make a difference to warming by 2050).
- The main factor determining peak warming is cumulative emissions of CO_2.
- Focusing *exclusively* on the 2°C (or 1.5°C) goal automatically focuses attention on the next few decades: potentially a problem if the goal is *not* met.