

How hot will the world be in 2100? The answer partly depends on how much carbon we dump in the atmosphere between now and then. It also depends on how sensitive the climate system is to those emissions. Scientists have used 4.5 °C as the high end of the likely possibilities.

That estimate derives from a climate scenario called RCP8.5. (RCP stands for Representation Concentration Pathway.) That scenario assumes little or no effort to control carbon emissions. It's customarily called the "business as usual" scenario. This map from their article, which may or may not show up in the emailed version of this post, shows the various scenarios:

In a January 2020 [essay](#) in the journal Nature, two climate scientists argued that RCP8.5 shouldn't be considered business as usual any more. They argued that it is in fact unlikely that we will burn anyway near as much coal as this scenario assumes. In reality, they said, coal use seems to be peaking, and renewable energy gets cheaper all the time. They worry that people fixate on this high emissions scenario and assume that the gulf between that and our climate goals is too big to be crossed.

Even a 3° temperature increase would still have extremely serious consequences, but it wouldn't be as catastrophic as 5°.

This essay was controversial. Some critics worried that it would undermine messaging about the urgency of the climate issue or give ammunition to climate denialists. Others argued that the 5° scenario was still a realistic possibility, even if it was not as likely as previously believed.



