

Many people are worried that a high national debt imposes a burden on future generations, though not all economists agree. But carbon emissions are also a burden on later generations — the CO₂ will stay in the atmosphere many decades to come, causing damaging climate change. If we're worried about burdens on later generations, is it better to use money to pay down the national debt or to reduce carbon emissions? The answer depends on how much it costs to reduce carbon, but using even conservative [government estimates](#) of the benefits, at least some carbon reductions do more to help future generations than paying off the debt. (For those who are interested, the numbers are after the jump.) In short, future generations will be more burdened by unrestrained carbon emissions than by the national debt. If you're worried about the deficit, you should also worry about carbon.

The real rate of interest (excluding inflation) on the government's debt is around 3% or a bit less, but the government actually gets part of the money back because the interest payments are taxable, so the true rate is closer to 2.5%. Discounting is the flip side of compound interest — so that means that if you enter into \$100 of debt today at 2.5% interest, pay that off in 2100, then the discounted value of the payment is . . . the same \$100 you borrowed. Or to put it another way, the loss of consumption because Americans have to pay off bonds held by foreigners has a discounted value equal to the face value of the debt today.

OK, now suppose we have a choice between paying off a \$100 in government debt today, or spending the \$100 to eliminate 3 tons of carbon. Let's assume that we roll over the government debt every year, adding another 2.5% in interest, and then at some unknown time in the future we finally pay it off. The arithmetic of discounting means that the discounted value of the debt at 2.5% is \$100. Now consider use of the funds to reduce carbon, thereby benefitting future generations of American. So the next question is, what's the discounted value of eliminating 3 tons of carbon? According to the government, it's about \$108 at the same 2.5% interest rate, although there are economists who think the number is much higher. In other words, we have a choice between a \$100 benefit to future Americans (reduced to present value) and a \$108 benefit to those same future Americans.

So any time the government can eliminate three tons of carbon for \$100, that benefits future Americans more than using the \$100 to pay off the national debt.