William Nordhaus recently (and deservedly) won the Nobel Prize for Economics for his work on the economic implications of climate change and policies to respond to climate change. In the press coverage after the award, some comments were attributed to Nordhaus that I think are important to consider in more depth – in part because understanding the implications of those comments is central to understanding how we can develop effective policy responses to the climate crisis that is unfolding around us.

Nordhaus is a major proponent of developing a carbon tax as a solution to the problem of climate change, and in an interview after receiving the award he said:

> "There is basically no alternative to a market solution," Nordhaus said. "The incentives are market prices — to raise the price of goods and services that are carbon intensive and lower the ones that are less carbon intensive."

Nordhaus may well be right in the long run that the only major solution to climate change is a carbon tax. But I think he is wrong when it comes to the short-run, and in fact I would argue that a single-minded focus on carbon pricing – at the expense of other policy approaches – would be harmful to efforts to develop policy solutions to address climate change. In fact, it seems that the best way to get to the high-price carbon tax that we will need to truly decarbonize the global economy will be by using tools other than carbon pricing to get there.

The basic problem is the political resistance to enacting climate change policies – these policies, if they involve explicit prices on carbon, require voters today to impose significant economic impacts on themselves to benefit future generations and people around the world. (That is inevitable, given the long-term and global nature of the problem of climate change.)

Moreover, the problem is even worse because a carbon tax would significantly harm some of the most powerful economic interests in the world – not just the fossil fuel industry (which many activists have noted has driven much of the opposition), but also wide sectors of the modern industrial economy.

So it is probably no surprise that countries and sub-national units around the world that have attempted to enact carbon taxes (or its close cousin, a cap-and-trade

program) have run into huge political obstacles (see, e.g., Australia where climate policy just brought down the government yet again; and Canada; and Washington state).

And it is also probably no surprise that places (such as the European Union or California) that have enacted some form of a carbon tax or cap-and-trade system initially began with significant subsidy and regulatory efforts to support emergent decarbonization technologies and build up industries like renewable energy. (See this article in Science that I co-authored that provides this data (unfortunately paywalled, though a useful press release is here).) In these countries, these regulatory and subsidy programs built political support for additional, more stringent climate change policy, including carbon taxes and cap-and-trade. Increased political support could come both in the form of increasing the interest group and lobbying power of the industries that benefit from climate policy and weakening the power of those that oppose climate policy, and also in the form of voters observing direct potential economic benefits from acting on climate change.

Indeed, a move immediately to carbon taxation right now might be counterproductive in the long-run, if that move diverted political capital and policy attention away from other policy tools. Many of the existing carbon tax or cap-and-trade programs have very small fees (the EU's program has often been less than 20 euros/ton). Those are the kinds of fees that are politically feasible at the moment. But those are not the kinds of fees that will support substantial innovation or investment in decarbonization industries and technologies. But it is substantial innovation and investment that we will need both to facilitate the technological breakthroughs that are essential to addressing the crisis (for instance, developing cheap and efficient direct carbon removal technologies), and also to build the political support and interest groups needed to advance more aggressive climate policy in the future.

Thus, what matters now, in the short-term, are policies that are politically feasible and that will encourage investment and innovation that can change the political landscape in the future so that we can advance more aggressive climate policy in the future. (For a paper that I co-authored that begins to develop the theory behind this approach, click here – here's a blog post I did recently on that article.)

That doesn't mean pursuing a carbon tax now is not a bad idea – so long as it does not prevent the aggressive use of complementary policy approaches such as regulations or subsidies that can facilitate innovation and investment. (There are

other risks with starting off with a low-priced carbon tax, such as locking in that low price for a significant period of time, when that price needs to rise rapidly in the future.) In particular, I'm concerned that the political backlash that carbon taxes currently appear to produce means that governments that might otherwise support important regulation and subsidy policies get (at best) distracted and (at worst) voted out of office.

When we have moved further along the curve of decarbonization, the efficiency of carbon taxes and cap-and-trade systems may well be essential and those tools may be the primary or even exclusive approach that we use. In other words, in the long-run (or at least the medium-run). But we can't get to the long-run unless we move through the short-run first, and there a single-minded focus on carbon pricing is probably misleading us. The short-run, in fact, is all the more important given the terrible urgency of the climate crisis that faces us, as the IPCC made clear early this month…