In the prior blog post in this two-part series, I talked about how current debates on climate policy that are focused on equity and efficiency are inadequate. Today, I'll explain how we might advance political feasibility through climate policy, how that is connected to technological innovation, and how we must necessarily balance between all four of these goals (efficiency, equity, political feasibility, and technological innovation) in developing climate policy.

Green spirals

In terms of advancing our understanding of how to address political feasibility in climate policy, there is an increasing amount of really important and interesting scholarship exploring the political economy of climate policy and decarbonizing economies. This recent article in the Atlantic highlighted work by Nina Kelsey, a professor at George Washington University and a collaborator of mine, who has developed the concept of "green spirals." A green spiral is a positive feedback loop in which governments can use both investments and regulations to advance the research and deployment of decarbonization technologies – advancing decarbonization technologies in turn transforms the landscape of business, labor and other interests groups, by creating new industries, or converting old industries, to invest in and commit to decarbonization. That in turn increases the political support for decarbonization policy, since powerful actors now have positive incentives to support it.

I've written about this dynamic before, and published work with Nina and others identifying evidence to support its existence and how it might be deployed in a range of contexts, including in carbon capture.

The important thing to keep in mind about this dynamic is that what might look like a short-term inefficient or inequitable policy might be efficient and equitable in the long-run, simply because the policy advances investments in decarbonization technology.

Consider, for instance, net metering – policies under which electricity utilities provide a high rate of compensation for electricity produced by solar panels installed by residential and commercial utility customers. Net metering policies are often criticized by economists as inefficient in terms of the money spent per unit of carbon emissions reduced. They are also often criticized as subsidizing wealthy homeowners who have more capacity to invest in the installation of solar panels.

There is a lot of truth to these criticisms. But even given those criticisms, we *might* still support net metering because of the longer-term political benefits the policy could provide – for instance, by building up support for renewable energy technologies and policies that support them, net metering might help create a pathway for more aggressive climate policies down the road, climate policies we desperately need to avoid worst-case climate scenarios that are both inefficient and inequitable.

Of course, decisions about any particular climate policy require balancing these different goals together – political feasibility versus equity versus efficiency, and there is plenty of room for reasonable disagreement about how any one policy choice successfully balances among those goals. In addition, how we undertake that balance might change over time, as we sequentially address various political, economic, or technological limitations to more stringent climate policy. For instance, we might prioritize efficiency when the costs of decarbonization policies become significantly higher, as they scale up – but not early on, when they are small in scale and a primary goal for the policies is building political support. But understanding the framework we are working within can advance our policy debates in a productive way.

Technological innovation

Implicit in the story of green spirals is another key factor we will want to keep center-stage in thinking about climate policy – the importance of advancing decarbonization technologies. One of the most important success stories for climate policy has been its ability to dramatically reduce the cost of various renewable energy technologies such as wind power and solar photovoltaics – and the same cost reduction appears to be occurring for battery storage as well.

These price reductions are the result of technological and business innovations, and the price reductions feed into all of the other climate policy goals I've discussed so far. By making decarbonization policy more affordable, technological innovation also makes decarbonization more economically efficient, since you can get more carbon reductions for the same amount of money spent. It increases the potential for equitable outcomes in climate policy, by making decarbonziation technology more broadly accessible and increasing the amount of decarbonization we can achieve. And it increases the political feasibility of decarbonization because if decarbonization is cheaper, it becomes less of a lift for governments to pursue. In

other words, technological innovation can reduce key cost obstacles in climate policymaking, as part of a "sequencing approach" to ramp up ambitious climate policy.

Naturally, there may also be situations where technological innovation as a goal may be in tension with our other goals as well. For instance, providing public support for electric vehicle development will, in the short-run, both likely produce significant drops in the cost of electric vehicles, and also provide subsidies to the wealthy people who are more likely to buy more expensive electric vehicles. Again, there are short-term benefits in terms of building up the technology that we may think are worth it to advance long-term equity benefits of decarbonizing our transportation system. And of course, we might be able to identify ways to reduce the tradeoffs between the goals, by providing even larger subsidies for purchases of electric vehicles for low-income consumers – though this will create tension with our efficiency goals, by requiring more spending to achieve our electric vehicle goals.

As in the net metering example, the tradeoffs here are difficult, important, and inherent in the problems we are trying to address. But in the end, there is no way getting around the tradeoffs, and understanding that there are tradeoffs, rather than one singular goal, is a necessary component to successful climate policy.