IRA, the Inflation Reduction Act, is clearly the biggest climate legislation ever passed in the United States. The law will provide $379 billion in subsidies to clean energy in the form of direct payments and tax credits. Subsidies aren't the ideal way to cut emissions, because it's impossible to target them to the precise behavioral changes you seek. But subsidies do work, and big subsidies have big effects.

There are now several studies estimating the impact of IRA on emissions. They show major effects on reductions, with emission cuts in the 30-40% range by 2030. The most recent report, from a Princeton research group, concludes that IRA would:

- **cut annual emissions in 2030 by an additional ~1 billion metric tons** below current policy (including the Bipartisan Infrastructure Law)
- **close two-thirds of the remaining emissions gap** between current policy and the nation's 2030 climate target (50% below 2005)
- **get the U.S. to within ~0.5 billion tons of the 2030 climate target**
- **reduce cumulative GHG emissions by about 6.3 billion tons over the next decade** (through 2032).

These estimates are just that, *estimates*. Energy markets are notoriously difficult to forecast. But these estimates are at least very encouraging.

The models only consider IRA's direct impacts. But there are some extremely important dynamic effects. Here is a quick list:

1. **Money draws innovation.** As the market for emission-reducing technologies grows, there's an increased incentive to invest in R&D. New technologies in turn drive more business, creating a "virtuous circle" of feedback between expanding markets and increased innovation.
2. **Subsidies indirectly promote stronger regulation.** Agency regulations are typically based on which emissions reductions are feasible or on applying cost-benefit analysis. Subsidies make it cheaper for industry to reduce emissions. In turn, this means that greater emission cuts are economically feasible and pass cost-benefit analysis. For instance, since IRA increases the tax credit for carbon capture and sequestration (CCS), EPA has a stronger argument for requiring fossil fuel plants to use CCS.
3. **Federal subsidies impact state policies.** By making emission cuts cheaper, federal subsidies encourage higher levels of ambition among states that are already trying to cut emissions. Federal subsidies also change the dynamics in

laggard states, where renewable energy isn’t a priority and talk about climate change is anathema. With enough money on the table, industry and other interest groups start exerting strong pressure on these laggard governments to shift policy.

4. **Federal subsidies create new national political dynamics.** Eric Biber has been a pioneer in exploring one aspect of the politics: renewable energy policies create stronger renewable industries, which then push for even stronger policies. There are also some more subtle effects. IRA has a lot of redistributive provisions designed to lower costs for low-income consumers and for rural constituencies. These policies can reduce opposition to tougher energy policies. IRA’s efforts to shift production of solar panels and batteries to the U.S. will further strengthen interest groups favoring climate action. Opposition also decreases for another reason: Fossil fuel companies then have smaller market shares, fewer workers, and less political clout. A less tangible effect is the sense of momentum created by major political victories.

One thing to note is that there are positive feedback effects between these different types of dynamic impacts. For instance, the innovation fostered by industry expansions leads to further industry expansion, strengthening industry, and thereby increasing the political pressure for more ambitious climate regulation, which in turn helps create incentives for more innovations to meet regulatory demands.

In a nutshell: IRA promises to have a dramatic short-term impact on carbon emissions, but will have an even greater long-term impact due to dynamic effects.