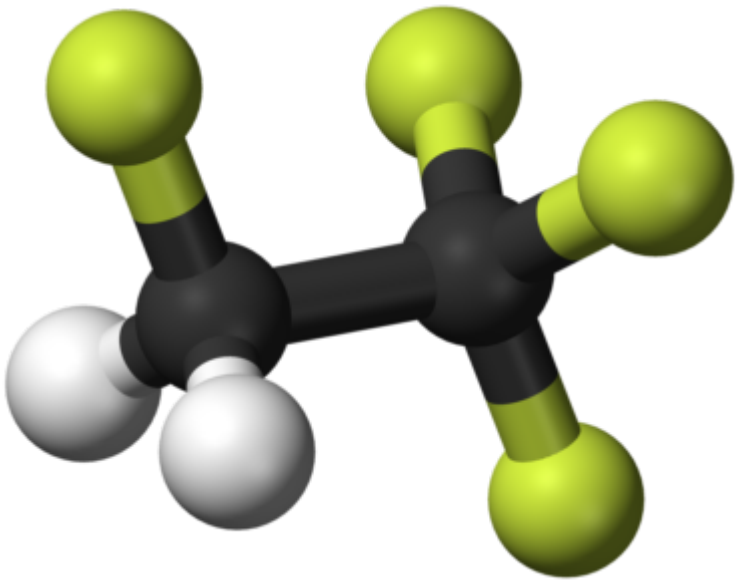
Today, the D.C. Circuit Court of Appeals vacated a 2015 EPA rule targeting the use of hydrofluorocarbons (HFCs), a class of potent greenhouse gases that are used as refrigerants and propellants for a variety of purposes as a substitute for ozone-depleting chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).



1,1,1,2-tetrafluoroethane, or HFC-134a. It's probably in your car's air conditioner.

The court's decision is a setback for President Obama's Climate Action Plan, but it also seems significant for what the court's opinion says about climate regulation and EPA authority more generally. It was a 2-1 panel decision, written by Judge Kavanaugh. Judge Brown concurred in the opinion, and Judge Wilkins wrote a separate opinion dissenting from the key holding in the case. Judge Kavanaugh, a frequent skeptic of EPA authority, framed the case as issue of separation of powers and statutory interpretation–whether Congress had given EPA the authority to issue this regulation.

By way of background: CO_2 accounts for the majority of human-caused greenhouse gas (GHG) emissions. But other GHGs are still significant drivers of climate change, and an increasing proportion of GHG emissions now comes from "high global warming potential" fluorinated gases (high-GWPs) such as HFCs, CFCs, HCFCs, perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These gases are relatively rare, but on a per-molecule basis, trap heat thousands of times more than CO_2. This means that reducing one ton of high-GWP gases can avoid tens or hundreds of thousands of dollars of social costs. The trick is that chlorine-containing gases in this group–CFCs and HCFCs–can react with ozone in the

stratosphere and significantly damage the ozone layer.

In 1990, Congress passed major amendments to the Clean Air Act, including Title VI, which addressed the problem of ozone-depleting substances–in part to meet the United States' international obligations under the Vienna Convention and Montreal Protocol for protecting the ozone layer.

Section 612 of the Act (42 U.S.C. § 7671k) created a "safe alternatives policy" designed to regulate the substitutes for CFCs and HCFCs. Section 612(a) reads that "[t]o the maximum extent practicable, [ozone-depleting CFCs and HCFCs] shall be replaced by chemicals, product substitutes, or alternative manufacturing processes that reduce overall risks to human health and the environment." Section 612(c) then requires the EPA to study the risk that CFC and HCFC alternatives pose to human health and the environment. EPA is required to put in place rules that make it "unlawful to replace [CFCs and HCFCs] with any substitute substance which the Administrator determines may present adverse effects to human health or the environment, where the Administrator has identified an alternative to such replacement that–(1) reduces the overall risk to human health and the environment; and (2) is currently or potentially available."

The central problem with the D.C. Circuit's opinion is its focus on the word "replace" to the exclusion of the rest of the statute and its overall purpose.

The EPA first set up rules as to which substitutes were permitted in the 1990s, in its "Significant New Alternatives Program." HFCs were deemed safe for use in a variety of products, including air conditioners in cars, refrigerators, and medical inhalers.

In 2009, the EPA issued its endangerment finding with regard to greenhouse gases, concluding that HFCs and other gases threaten public health and welfare. Based on this, President Obama's Climate Action Plan at the start of his second term in 2013 included a point on phasing out HFCs.

In 2015, EPA issued the rule challenged in today's case–reclassifying HFCs from the list of *safe* substitutes to *prohibited* substitutes, except in limited circumstances (for example, medical inhalers).

Companies that manufacture HFC-134a (also known as 1,1,1,2-tetrafluoroethane) challenged the rule. They argued that they, as manufacturers who had already "replaced" ozone-depleting CFCs and HCFCs with HFC-134a, could not be required to make a second substitution and replace again a substance that EPA had previously listed as safe.

HFC-134a comes in light blue cans like this (picture from Wikimedia Commons / CC 3.0)

It is at this point that the D.C. Circuit begins to engage in an in-the-weeds hair-splitting exercise. The court accepted that the EPA could move HFC-134a to the list of prohibited substitutes, and that for any manufacturer who was still making ozone-depleting CFCs and HCFCs, *those* manufacturers would not be able to switch to HFC-134a. However, the court honed in on the use of the word "replace" in the statute (see slip op. at 13). The two sides disagreed as to the time frame in which the "replacing" is happening. The court held that "replace" could only mean a one-time substitution for each manufacturer (and held that this was the clear meaning of the statute, under Step 1 of a *Chevron* analysis–not subject to any level of deference to the EPA). In other words, once Company X switches from making freon to making HFC-134a, it can no longer "replace" an ozone-depleting substance, and EPA can't make them change from their already-chosen substitute. (EPA–and Judge Wilkins in dissent–saw "replacement" as an ongoing process; as Judge Wilkins put it, it can happen over a number of years, and "it may be the case that one substitute is succeeded by a better substitute at some point in the future." See dissent at p. 4.)

It's easy to understand the manufacturers' concerns. They've already stopped making ozone-depleting substances, and now they're making substances that don't deplete the ozone layer. So how long must they continue to be subject to an EPA regulation that's about ozone?

The problem with this line of reasoning is that it ignores the clear purpose of Section 612 and the rest of the 1990 Clean Air Act. Congress had mandated the phaseout of CFCs & HCFCs in separate sections of Title VI. This provision was solely about managing the replacements. Although they damage the ozone layer, CFCs and HCFCs are useful–they're non-toxic, unlike other refrigerants that had been widely used before. The point of Section 612 was to help ensure that whatever we used as a substitute didn't cause other problems for human health and the environment (the history of environmental policy is far too full of examples of solving one environmental problem by creating another). Our understanding of what risks those substitutes pose will certainly change over time–and we should want EPA to be able to reconsider a decision about whether a substitute ultimately does enough harm that it should be prohibited.

Underneath the surface in this case is the ongoing question of what exactly executive branch agencies can do to control climate change. Judge Kavanaugh offered a renewed warning shot in this debate, writing that "climate change is not a blank check for the President" (slip op. at 18). The court used this statement as the foundation for building its narrative of the case–a case of what it saw as improper reach by the EPA in using an ozone-related program to regulate climate change.

However, the reasoning in this case places harmful constraints on an agency's ability to make expert, scientifically-ground decisions. The case seems to turn the reasoning behind *Chevron* deference on its head–applying a narrow view of a statute in order to prevent the agency from using new information and scientific analysis to update its implementation of congressionally-mandated policy. Suppose, for a moment, that EPA's rule had reclassified a given CFC/HCFC substitute, not because of climate change impacts, but because the compound was found to increase cancer risks when used in common consumer products. Would the court conclude that EPA could not force manufacturers to move away from those substitutes in those circumstances? It's not clear what the outcome would be, but it would be very difficult for a court to justify treating one public health and environmental concern from another, when both are clearly recognized by the EPA.

EPA, under Section 612(c), is supposed to determine whether substitutes "present adverse effects to human health or the environment." Climate change has adverse effects on human health and the environment; it is not in a different class from other environmental harms simply due to its politicization or the lack of comprehensive federal climate legislation. The D.C. Circuit's opinion ventures too close to establishing a different, more exacting standard for agency efforts to mitigate climate change, and it may foreshadow negative results in other ongoing challenges to the Obama Administration's climate policies.