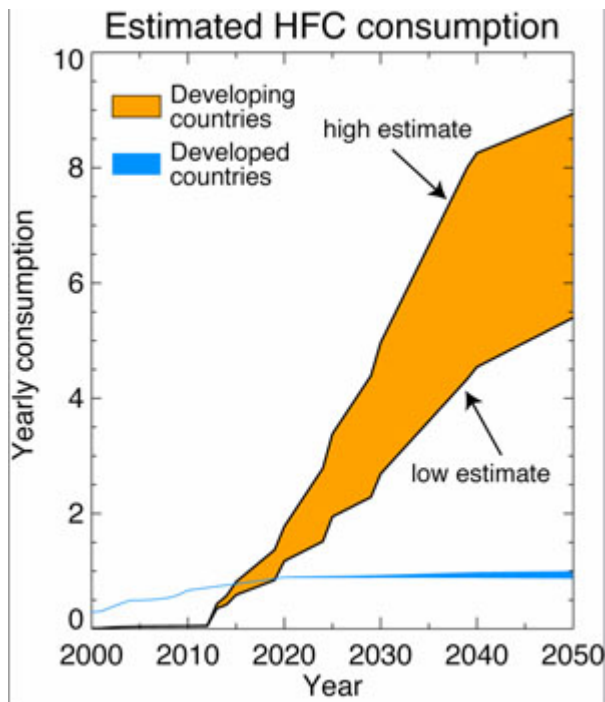




A Hard Curve To Bend (Source: NOAA)

What was supposed to be an informal meeting between President Obama and Chinese President Xi Jinping has yielded something substantive: an agreement to include hydrofluorocarbons (HFCs) under the Montreal Protocol, and thus [an agreement by both nations to reduce their use](#):

As [some environmental analysts had hoped](#), [President Obama](#) and President [Xi Jinping](#) of [China](#) found room to maneuver on global warming in their California desert retreat. They sidestepped the [super wicked](#) issues impeding restrictions of the greenhouse gas of greatest concern, carbon dioxide, and [staff released a joint statement on plans to cut releases of hydrofluorocarbons](#), or HFCs, a potent group of heat-trapping gases.

Legally, this is something of a bank shot. The major problem with HFCs is that they are an extremely potent greenhouse gas, but [since they also can deplete the ozone layer, they can be regulated under the Montreal Protocol](#) — a second-best alternative, but the only one available given the toxic politics of climate change.

All very well and good, especially because [China has refused to consider HFC reductions in the past](#). But how exactly is this supposed to be done? What will we replace HFCs with?

The Montreal Protocol originally limited and then banned chlorofluorocarbons (CFCs), which were used in refrigeration and air-conditioning. The Protocol stands as the shining example — indeed the *only* example — of successful international environmental governance, but it succeeded in no small part due to the development of Hydrochlorofluorocarbons (HCFCs), which substituted for CFCs. Then, when [HCFCs turned out also to deplete the ozone layer](#) (although not nearly to the same extent as CFCs), HFCs stepped into the breach. Now what?

It's not as if people will put up with a lack of refrigeration or air-conditioning. Now, whenever a substance is banned, industry usually declares that the sky is falling and there is nothing it can do, and then just all of a sudden finds something to do — particularly if that thing happens to be under patent. But it would be nice to know whether something is in the pipeline, or how R & D is proceeding to replace HFCs, especially since [HFC use is skyrocketing](#). This is especially true given how much scientific research has been backed apart under the sequester, and anything regarding support for atmospheric science research is DOA with a Republican-controlled House of Representatives. So what's out there? Industry has so far been quiet, which I take as a good sign that there is a replacement. But I haven't heard of anything yet, and that is disquieting, if for no other reason than that it indicates that a purported phase-down might be purely cosmetic.