

No more excuses on climate change

By Eugene Robinson:

Skeptics and deniers can make all the noise they want, but a landmark new report is unequivocal: There is a 95 percent chance that human-generated emissions of carbon dioxide and other greenhouse gases are changing the climate in ways that court disaster.

That's the bottom line from the Intergovernmental Panel on Climate Change (IPCC), which on Monday released the latest of its comprehensive, every-six-years assessments of the scientific consensus about climate change. According to the IPCC, there is only a 1-in-20 chance that human activity is not causing dangerous warming.

You may like those betting odds. If so, let's get together for a friendly game of poker, and please don't forget to bring cash.

The squawking from naysayers has recently been all about a supposed "pause" in global warming. They say there has been no detectable warming in the past 15 years and claim that any temperature rise that scientists attribute to human activity is really part of some grand natural cycle — probably nothing to worry about, and, in any event, nothing we can control.

One look at the data indicates that the skeptics' view is wishful thinking at best. It is true that if you look at the period of 1998 to 2013, there is very little warming. But that is because 1998 was an extreme outlier — a sharp spike on the graph. That year was much warmer than the preceding or subsequent few years.

If you plot global temperatures over a longer time period, covering 50 or 100 years, you get a line that jiggles up and down but generally trends upward at an alarming slope. Look closely and you'll notice that 2005 and 2010 were both a bit warmer than 1998.

Why is this happening? Because "the atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have increased to levels unprecedented in at least the last 800,000 years," according to the executive summary of the 2,000-plus-page IPCC report.

By processes well-known to science and reproducible in the laboratory, these gases trap solar heat. Since the Industrial Revolution, when humans began burning fossil fuels on a vast scale, the concentration of carbon dioxide in the atmosphere has increased by an astounding 40 percent. Unless all the physics textbooks are wrong, this causes warming.

Atmospheric science is difficult because there are so many variables involved. Heat can be trapped in the depths of the oceans, thus mitigating its effect on surface temperatures — for a time. Volcanic eruptions spew particles into the atmosphere that block some measure of sunlight. El Niño and La Niña changes in Pacific Ocean currents are associated with seasonal or yearly temperature fluctuations.

Nevertheless, the infamous "hockey stick" graph showing global temperatures rising over time, first slowly and then sharply, remains valid.

"Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system," the IPCC summary says. "Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions."

Prospects for those reductions are iffy. The sluggish economy, higher automotive fuel economy standards and the substitution of natural gas for coal in many power plants have helped keep U.S. emissions in check. But China is by far the world's biggest emitter, and while there are signs that Chinese leaders now consider climate change important, it is unclear how that country's economy can continue its rapid growth without relying on coal.

The IPCC report says it is "very likely" that heat waves will become more frequent and more intense. It is also "very likely" that extreme rainfall events, such as the deluge in Colorado last month, will become more common; that "Arctic sea ice cover will continue to shrink and thin" in coming decades; that "Northern Hemisphere spring snow cover will decrease" and that "global glacier volume will further decrease."

Sea levels will continue to rise because of warming — water expands as it heats — and because of glacial melting. This has implications for coastal populations not just in places such as Calcutta, India, or Dhaka, Bangladesh, but also in rich and powerful cities such as New York: Witness the massive flooding and storm-surge damage caused by Superstorm Sandy.

"A large fraction of anthropogenic climate change resulting from CO₂ emissions is irreversible on a multicentury to millennial time scale," the IPCC says. In other words, this is the world we have made. Get used to it.

But it is within our power adapt to climate change and keep it from getting much worse. The first step in Carbonoholics Anonymous is admitting we have a problem.
