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BOB DOPPELT: With global warming, the stakes are too high to do nothing

(<http://www.registerguard.com/csp/cms/sites/web/opinion/24688602-47/warming-global-greenhouse-lindzen-climate.csp>)

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The tragic deaths at the Massey Energy Co. coal mine in West Virginia illustrate the danger of methane gas. Methane is not just a problem at coal mines. It is also a powerful contributor to global warming. Unless it and other greenhouse gases are rapidly controlled, all of humanity will be at risk.

Carbon dioxide is a non-flammable gas that is the most prominent greenhouse gas. Atmospheric concentrations of CO₂ have risen by more than 30 percent since the industrial revolution began, due primarily to the burning of coal, oil and natural gas.

As coal miners know, methane is flammable. On a molecule-by-molecule basis it is much more powerful greenhouse gas than CO₂. However, it is less abundant and does not last as long in the atmosphere as CO₂, so its total contribution to global warming is smaller.

The atmospheric concentration of methane has doubled since pre-industrial times due to human activities such as livestock raising, coal mining, gas and oil drilling, rice cultivation and landfill decomposition. If global warming continues, even more methane is likely to be released from melting tundra and other sources.

From the beginning of civilization about 10,000 years ago to the start of the industrial revolution, levels of all atmospheric greenhouse gases stayed between 260 and 280 parts per million. This kept the Earth's average temperature at a pleasant 59 degrees Fahrenheit.

When humans began burning fossil fuels, carbon that was stored as a solid was converted into a gaseous state. Atmospheric greenhouse gas levels have consequently risen to 387 ppm. More greenhouse gases trap more heat and warm the Earth.

In his April 4 Register-Guard Commentary article, Richard Lindzen acknowledged that human emissions of carbon dioxide must have some effect, admitted that the Earth's surface temperatures have warmed, and conceded that "the past decade was the warmest on record." However, he then said there is no need to worry because recent warming has just been "tenths of degrees" and "there has been no statistically significant warming in the past 14 years."

This sounds reassuring, but it's misleading. Historic records show that temperatures do not rise at a steady rate. Due to feedback mechanisms, they might rise slowly for a while, then rapidly, then cool a bit, then rise again, but for decades the overall direction has been upward.

More importantly, the long-term geologic record of the Earth indicates that no matter whether they lead or follow, atmospheric greenhouse gases have always tracked global temperatures. This suggests global temperatures will continue to climb.

After discounting the risks of global warming, Lindzen dismisses efforts made to address the issue as “symbolic” — a conclusion I agree with. But I failed to follow his logic: If it’s not a problem, why would solutions need to be more robust?

Lindzen then becomes a politician and says, “greater wealth and development can profoundly increase our resilience.” But if global warming is not a threat, why do we need to increase resilience? Lindzen also neglected to mention that numerous studies have documented how rising temperatures will undermine the factors that foster growth and development.

Lindzen ended his essay by blaming the “alarmism” about human-induced global warming on groups that want to control carbon dioxide for political and economic reasons. This is the pot calling the kettle black. He failed to cite the many conservative groups that have made a profitable industry out of opposing climate legislation and the fossil fuel companies that fight to preserve their profits by supporting anti-climate campaigns.

Setting aside these issues, the main differences between Lindzen and the many climate scientists and numerous scientific institutions worldwide that are concerned about global warming is their calculations about how sensitive the climate is to forces that produce warming.

An April 14 post on RealClimate.org, a blog hosted by top climate scientists, said that Lindzen “views the possible role of clouds as a strong negative feedback as a reason to believe the climate sensitivity is lower than all other evidence indicates.” Lindzen’s view is curious, because he recently told The Economist that he agrees with the mainstream views on the magnitude of the water vapor feedback, which is that it roughly doubles the direct heating effect of CO₂.

Despite these apparent contradictions, let’s assume Lindzen is right — that the Earth will somehow find a way to cool itself despite rising methane and other greenhouse gases. In this case global warming might be moderate.

If he’s wrong, however, and continued emissions of methane and other greenhouse gases will push temperatures into dangerous territory — conditions on Earth will be forever altered.

It’s time to decide which view is the most prudent to follow and either drop efforts to address global warming — or make them a top priority.

Bob Doppelt is director of The Resource Innovation Group and the University of Oregon’s Climate Leadership Initiative. His comments are his own.