Climate scientists warn about “methane time bomb”

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23 May 2018

A new article published by the Centre for Research on Globalization, titled “The Methane Time Bomb and the Future of the Biosphere,” presents evidence that the current emission of carbon threatens to melt the large polar ice caps, leading to tens of meters of sea level rise and the disappearance of species at a rate two orders of magnitude higher than without recent human actions.

Dr. Andrew Glikson, a visiting fellow at the Climate Change Institute and the School of Archaeology and Anthropology at Australian National University, states in his abstract, “Having sent young generations to kill and die in wars, the powers that be are now presiding over the greatest mass extinction of nature since 66 million years ago,” a reference to the event that caused dinosaurs to go extinct.

According to Glikson, methane is the most potent common greenhouse gas, and there are many hundreds of billions of tons stored in Arctic permafrost, lakes, shallow seas, and sediments. This methane has accumulated as part of the unoxidized organic matter present in such features since the Arctic glaciation that occurred approximately 2.6 million years ago. This methane reservoir, which also exists in tropical bogs, may have catastrophic effects on the biosphere upon its release.

The global carbon project has released data showing that up to 1,400 billion metric tons of carbon on land and 16,000 billion metric tons in the oceans will potentially be released in the near future. This much carbon, which would be emitted in the form of the greenhouse gases carbon dioxide or methane, would cause a significant rise in temperatures and widespread melting and defrosting of the polar ice sheets. This possibility comes from the combustion of fossil fuels and is further compounded by coal seam gas drilling, which perforates the earth’s crust in several parts of the world and further releases huge quantities of methane into the atmosphere.

Glikson notes that even a small percentage of this carbon released into the atmosphere as methane, which has 25 to 75 times the greenhouse effect of carbon dioxide, may raise the atmospheric greenhouse concentration of carbon to the point that it leads to further extensive melting of the large ice sheets, major sea level rise, and a mass extinction event rivaling the Paleocene-Eocene Thermal Maximum that occurred approximately 56 million years ago.

The warnings given by Glikson are substantiated by several sources, including 2011 expeditions along the East Siberian Arctic Shelf by Russian scientists who identified large sea-bed structures showing bubbling plumes of methane as well as large numbers of perforations in the shelf itself. The estimated release of methane from this region alone is 150 megatons of carbon per year and has driven atmospheric methane there to concentrations nearly forty percent higher than the global average.

A 2013 *Nature* comment written by Whiteman, Hope, and Wadhams suggested that once the ice cover melts, water turbulence will warm the underlying sediments by up to 7 degrees Celsius, leading to more potentially catastrophic disintegrations of Arctic permafrost.

Concentrations of atmospheric methane in the Arctic rose sharply between 2009 and 2013, reaching values of about 1,800 parts per billion (ppb), up from 800 ppb before the year 1840 and 400 ppb during the last glacial period. About one-fifth of the increase of human-linked greenhouse gas emissions since 1750 is due to methane.

In addition to marshalling this data showing how disastrous the release of hundreds of billions of tons of carbon from the Arctic permafrost will be, Glikson also criticizes the drilling for natural gas in coal seams. He

cites a 2013 paper by Tait and colleagues that reports fugitive emissions over an Australian coal seam gas field yielding atmospheric carbon concentrations up to thirteen percent above the global average. This has resulted in tremendous venting of methane and atmospheric levels of 3,000 ppb in the region.

These data and predictions have led climate scientists to draw correlations between the current atmospheric changes and those that took place during the Cretaceous-Tertiary extinction of dinosaurs 66 million years ago. This global extinction event was responsible for eliminating approximately 80 percent of all species of animals and distinguishes the Cretaceous and Paleogene geological periods. According to *Britannica*, it ranks third in severity of the five major extinction episodes that punctuate the span of geologic time.

Such results have also led some scientists to recognize that the same economic and political forces that drive climate change also drive imperialist war. Last year, a book was published, written by Glikson and Andrew Yoram, which posits the probability that the current people in power will cause a transition from the *Anthropocene* to a new geological period, which they call the *Plutocene* after the element Plutonium (although, given the class that would be responsible, the name could have equally been derived from the plutocrats, the ruling elite of billionaires and multi-millionaires).

The *Plutocene*, according to Glikson and Yoram, would partially be a result of the use of nuclear missiles and bring high levels of radioactivity that will persist for at least 20,000 years and acid oceans that will severely limit biological activity to the “hardiest” of species. They suggest that such a period will be analogous to the Pliocene, which describes a period 2.6 to 5.3 million years ago where global temperatures were 2 to 4 degrees Celsius warmer and sea levels were 20 to 40 meters higher than pre-industrial levels.

There is no reason to accept such a catastrophe fatalistically, however, as many climate scientists tend to do. The threat of nuclear war, combined with the growing crisis of global warming, raises ever more sharply the need to reorganize society along socialist lines in order to put an end to private ownership of the means of production and the system of rival capitalist nation-states, the main barriers to dealing with the global challenges that confront humanity.