Antarctic ice shelf collapse: climate change and capitalism

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The disintegration last Sunday of a 40-kilometre ice bridge connecting the Wilkins Ice Shelf to the Antarctic Peninsula is another stark indicator of the threat posed by climate change.

The ice bridge was the last link between the 14,000 square kilometre Wilkins Shelf and the Antarctic mainland. Scientists now anticipate that the ice shelf—a vast expanse of ice—will be rapidly eroded or completely melted, especially if it drifts north into warmer ocean currents. The erosion of the Wilkins Shelf, first identified by scientists through satellite images taken in March 2008, proceeded much faster than anticipated. In 1993 the British Antarctic Survey identified the area as vulnerable, but predicted that significant deterioration would take 30 years.

Average world temperatures are 0.8 degrees Celsius higher than in the pre-industrial era, but the Antarctic Peninsula (the part of the continent that juts toward South America) has proven much more sensitive to global warming. Temperatures there have risen by 2.5°C in the past six decades alone.

Wilkins is one of ten massive ice shelves to have collapsed or substantially shrunk. Such shelves form over hundreds of years; ice cores indicate that some have been in place for at least 10,000 years. Geographers are now redrawing the map of Antarctica. A recent study by the US Geological Survey and British Antarctic Survey found that 142 of the 172 ice coastlines were in retreat.

"The changes in the map area are widely regarded as among the most profound, unambiguous examples of the effects of global warming on Earth," Dr. Ted Scambos, of the Colorado National Snow and Ice Data Center, concluded.

The destruction of the Antarctic ice shelves does not directly raise sea levels because they are already floating atop the ocean. However, their erosion reduces the earth's icy surface area, which reflects part of the sun's radiation back into the atmosphere. Taken together with the shrinking Arctic, the result is what climate scientists term a "positive feedback loop"—reduced ice cover leads to more of the sun's heat being absorbed into the ocean, producing higher temperatures, which in turn further erode the ice mass.

In addition, the Antarctic Peninsula ice shelves act as a buffer for the continental land ice. With their destruction, the enormous land ice mass—which if melted would directly raise sea levels because it is not floating in the ocean—is exposed to warmer ocean currents. According to the Norwegian Polar Institute, even a 1 percent loss of Antarctic ice would raise sea levels by 65 centimetres, threatening coastal areas that are home to approximately 10 percent of the world's population—nearly 700 million people.

As the record demonstrates, this potential catastrophe has been known about for some time, but action to avert it has been blocked by governments acting on behalf of powerful corporate interests.

In the late nineteenth century Swedish scientist Svante Arrhenius first hypothesised that industrial pollution, above all the release of carbon dioxide into the atmosphere, could produce global warming through a greenhouse effect. Empirical data confirming that warming was underway was gathered by climate scientists in the post-World War II period; significant evidence of climate change had been accumulated by the 1980s.

Despite this, the response of governments throughout the world was to do nothing.

Subsequent international conferences on global warming have foundered on irreconcilable conflicts between various national governments. Their primary concern has been to protect their own corporations, which invariably regard greenhouse gas reductions as antithetical to their short-term profit interests. The 1997 Kyoto Protocol—which involved minimal pollution cuts, falling far short of what climate scientists determined was actually required—was stymied by the US government's refusal to ratify. Washington's stand was above all driven by concern to protect the interests of the major oil conglomerates, which had the closest of relationships with senior Bush administration figures.

The election of President Barack Obama has not significantly altered US policy. While paying lip service to the problem and adopting a more conciliatory stance on the world stage, Obama has merely pledged to lower US carbon emissions to their 1990 levels by 2020. This target flies in the face of the conclusion of the UN Intergovernmental Panel on Climate Change (IPCC) that advanced countries must lower greenhouse pollution by 25-40 percent of their 1990 levels. Washington's stance is one reason why the finalisation of a "post-Kyoto" treaty remains in doubt. Ongoing negotiations are to culminate in a major summit in Copenhagen, Denmark at the end of the year. But little progress has been made. Another round of discussions, held this week in Bonn, Germany, concluded today with no agreement on basic issues.

The European powers have no solution to climate change. Their policies centre on using the "free market" that created the crisis. Carbon trading—a scheme which makes industrial pollution a tradeable commodity—has developed as a vast racket, with the European Emissions Trading Scheme enriching various carbon trading speculators, hedge fund operators and investment bankers. Major corporate polluters have also reaped enormous profits through free handouts of carbon credits, while ordinary people have been hit with substantially higher energy and transport costs.

The latest scientific evidence indicates that the IPCC's proposed 25-40 percent emissions cut for advanced economies may seriously underestimate what is required. A number of climate scientists, including NASA's James Hansen, have concluded that the level of carbon dioxide in the earth's atmosphere has *already* surpassed the maximum tolerable limit beyond which potentially irreversible climate change may be triggered.

In this case, what is required is an immediate transition to a world economy with "net zero" carbon emissions—that is, emissions no greater than those able to be absorbed by the environment through natural processes. The technology and material resources necessary for such a transition already exist. But the marshalling of the world's productive forces and technological capacities to this end is impossible under the present social order.

By its very nature, climate change is a global problem, but it cannot be solved within the framework of the capitalist system. All rational plans for tackling this crisis immediately founder on the dictates of the profit system and the conflicting interests of the major capitalist nation states. To cut carbon emissions to the required levels requires nothing less than the complete re-organisation of the global economy—including the restructuring of energy generation and distribution, urban planning and public transport, agriculture and industrial production, waste disposal, and a host of other areas.

Such a reorganisation is only conceivable on the basis of a socialist movement of the working class. What is needed is a democratically-planned, world economy to satisfy long-term social needs and lift the living standards of ordinary people in every part of the globe.

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