

# THE WORLD AT A TIPPING POINT

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We are at an unprecedented moment in human history. We stand on the precipice of a potentially disastrous global crisis, which is now recognised as “no longer up for debate”. What happens next will be determined by our actions. There is a pressing urgency to finding a solution, an urgency that demands radical and complete reform of the way we perceive the world and the way we live our lives.

I am speaking of climate change – or, as is more accurate, climate chaos. The problem of climate chaos touches every area of our lives: peace, security, human rights, poverty, hunger, health, mass migration, and economics. Climate change is not an isolated environmental issue: everything is inextricably linked.

NASA’s James Hansen, one of our foremost climatologists, estimates sea level rise of 4 to 5 metres this century due to melting ice in Greenland and Antarctica. He describes how the Intergovernmental Panel on Climate Change’s recent report fails to take geological records into account and ignores the so-called “albedo flip” property of water:

“The ‘albedo flip’ property of ice/water provides a powerful trigger mechanism ... A climate forcing that ‘flips’ the albedo of a sufficient portion of an ice sheet can spark a cataclysm.”

Hansen is telling us that the poles do not melt in a linear fashion, but rather in bursts – and that if the globe warms up just a few degrees, it might be enough to trigger a catastrophic ice sheet collapse. Such a collapse would not only drown most of the world’s centres of population, but would itself fuel further climate change, since less ice means less heat reflected back into space.

“The Earth’s climate is remarkably sensitive to global forcings. Positive and ‘amplifying’ feedbacks predominate. This allows the entire planet to be whipsawed between climate states. Recent greenhouse gas emissions place the Earth perilously close to dramatic climate change that could run out of control.”<sup>1</sup>

“If Hansen is correct,” writes *The Guardian*’s George Monbiot, “to avert the meltdown that brings the Holocene to an end we require ... a sort of political ‘albedo flip’.” David Wasdell, Director of the Meridian programme, in a book he co-authored called *Planet Earth, We Have A Problem*, talks about the impending tipping point:

“If we go beyond the point where human intervention can no longer stabilise the system, then we precipitate unstoppable runaway climate change. That

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<sup>1</sup> Hansen, J., Mki. Sato, P. Kharecha, G. Russell, D.W. Lea, and M. Siddall, 2007: Climate change and trace gases. *Phil. Trans. Royal. Soc. A*, **365**

will set in motion a major extinction event comparable to the five other extinction crises that the earth has previously experienced.”<sup>2</sup>

In an article called “A Last Chance for Civilisation”, Bill McKibben introduces what he calls “the most important number on Earth”: 350<sup>3</sup>. He is referring to the parts per million of carbon dioxide in the air. Quoting James Hansen, he explains that we must rapidly lower the level of carbon dioxide in our atmosphere “if we wish to preserve a planet similar to that on which civilization developed”. If we do not make 350 the most important number on Earth, future generations will be faced with surviving on an overheated planet. They will have no option but to devote time, resources and energy to managing the consequences of their ancestors’ short-sightedness.

Hansen cites six irreversible tipping points. Among them are massive sea level rise and huge changes in rainfall patterns. If we do not return to 350 parts per million of carbon dioxide in the atmosphere quickly, from our current level of 385 parts per million, we will pass these tipping points very soon. The first of them, the melting of the polar ice caps, may already be behind us.

“During times of universal deceit, telling the truth is revolutionary,” George Orwell once said. Despite the clear and urgent alarms sounded by our most respected scientists, the developed world continues to feed its out-of-control oil addiction. We are locked into an inefficient, pollution-based economy, which is undermining public health and the environment, aggravating inequality.

Rather than face the pressing challenges of the 21<sup>st</sup> century, The Bush administration has walked away from America’s international obligations, tearing up international treaties like the Kyoto Protocol on global warming and gutting the Environmental Protection Agency. Bush’s election was a straightforward capitalist venture for the energy corporations. Oil, gas, coal and nuclear companies are the power behind Bush. As soon as he was elected, it was payback time, and Bush declared the Kyoto Protocol on reducing carbon-dioxide emissions dead and buried.

As the Natural Resources Defense Council boldly states on its website, “the Bush administration ... has shown again and again that it will cater to industries that put America’s health and natural heritage at risk; there is little doubt that more attempts to undermine environmental enforcement and weaken key programs will be made” before he departs. As Senator John Kerry said in 2004, “I think Dick Cheney ought to reveal who the oil executives are that he met in secret with to set the oil policy of the United States of America.”

Throughout the last seven years, the message has consistently been, “US corporations have the right to pollute the entire planet. The people and the environment don’t matter.” We have wasted precious time that could have been spent addressing the threat of global climate disaster. Bush called the Kyoto Treaty “fatally flawed” and “unworkable”. He questioned the scientific evidence that links fossil-fuel emissions to climate change, and claimed that the targets were not based on science.

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<sup>2</sup> Wasdell, David, et. al., 2007. *Planet Earth, We Have A Problem*, The Meridian Programme

<sup>3</sup> McKibben, Bill. 2008. *The World at 350: A Last Chance for Civilisation*.

President Bush has engaged in a relentless effort to permit drilling in the Arctic National Wildlife Refuge. Drilling into this strip of tundra has been an energy priority for Bush and other Republican leaders in Congress for years, because it is estimated that between 4.3 and 11.8 billion barrels of recoverable oil lie underneath the surface. Until now, the Senate has consistently blocked them. But how long before Bush, or one of his ilk, succeeds in destroying this precious natural habitat?

According to OilOnIce.com, online home of the famous documentary of the same name, the recoverable reserves of oil underneath would last the US just 200 days. In the 50 years it would take to extract it all, the reserves would meet less than 1% of the country's demand. Offering his plan to expand renewable energy as an alternative to the proposal for oil drilling in the Arctic Refuge, Senator Kerry said: "The United States of America can't drill its way out of this predicament; we have to invent our way out of it."

Though his plans for emissions reductions have not kept pace with the latest scientific research, even Senator John McCain distanced himself from Bush's record on climate change when on Monday this week he said, "The facts of global warming demand our urgent attention, especially in Washington ... We stand warned by serious and credible scientists across the world that time is short and the dangers are great. The most relevant question now is whether our own government is equal to the challenge."

"I will not permit eight long years to pass without serious action on serious challenges," he said. "The United States will lead, and it will lead with a different approach."

Representatives of the petroleum complex have been defining Washington's policies for a long time. They had always been close to government, but as a result of Bush's presidency, they *became* the government. Their undeniable aim has been to dominate and exploit the planet's energy resources; oil and natural gas.

The result of all this is that we are now facing oil prices that have exceeded \$120 per barrel – nearly \$4 a gallon. As consumers of oil, we must realise that our vast oil consumption is effectively destroying the environment and communities, especially in places inhabited by indigenous populations and marginalised groups who have little or no economic and political power to defend themselves.

I would like to quote a passage from "View of Dusk at the end of the Century, from Eduardo Galeano, 1998.

*Poisoned is the earth that inters or deters us. There is no air, only despair; no breeze, only sleaze. No rain, except acid rain. No parks, just parking lots. No partners only partnerships. Companies instead of nations. Consumers instead of citizens. Conglomerations instead of cities. No people only audiences. No relations, except public relations. No vision, just television. To praise a flower, say "It looks plastic..."*

At the United Nations Framework Conference on Climate Change in Bali last December, I spoke of climate chaos in terms of global justice. That is how I see the

issue: we need to fight climate change along with global inequality if we want to find lasting and sustainable solutions. To attempt to address the causes of climate change, we must not overlook the developing countries of the world.

There is no denying it: the rich world is causing climate change and the poor world is suffering. The industrial countries that have pioneered fossil fuel technology are primarily in the cold north, while the warmer countries of the south still use far less oil, gas and coal. As climate change kicks in, the tropical and subtropical countries of Africa, South Asia and Latin America will heat up to the point of being intolerable. Droughts will affect large parts of Africa, Asia and Latin America. Melting glaciers will flood river valleys and then, when they have disappeared, unprecedented droughts will occur. Poor, low-lying countries such as Bangladesh will find it much harder to cope with sea level rise than Holland or Florida.

If current trends are allowed to continue, hundreds of millions of people in the poorer countries will lose their homes as well as the land on which they grow their crops. And then there is the threat of diseases: By the end of the century 182 million people in sub-Saharan Africa alone could die of diseases directly attributable to climate change, according to Christian Aid.

Never before has humanity been so overwhelmed by such massive and urgent concerns. We are experiencing explosive population growth: the world's population is forecast to reach 9.2 billion by 2050. Since 1992, there has been a 50% increase in world energy consumption. Another 50% rise is expected in the next fifteen years. We now know that if we remain locked into an inefficient, polluting, fossil-fuel based global economy, we will exhaust the Earth's natural resources and we will accelerate climate change.

We must therefore insist on a dramatic change in direction that goes way beyond the actions currently taken by governments. The rich countries need to dramatically reduce their use of fossil fuels. At the present time, we are burning a million years worth of fossil fuel deposits every year. This makes the unprecedented standards of living of a large portion of people in the rich countries possible. In April of this year came the news that atmospheric carbon dioxide jumped 2.4 parts per million last year. Two decades ago, it was going up half that fast.

Meanwhile, rapid economic growth is also disproportionately increasing the living standards of minorities in developing countries. But all this is possible only because we are running down the earth's capital assets, and particularly its fossil fuel resources, at an unprecedented rate whilst damaging the earth's atmosphere in the process.

It is becoming clear that the rich countries need to take vigorous measures to rapidly reduce their dependence on fossil fuels, and to accelerate the development of renewable energy as the basis of a whole new energy system for the planet. "Climate justice" means giving the poorer countries privileged access to renewable energy technologies to help them with truly sustainable development. The Kyoto treaty's "clean development mechanism" was a useful start, but much more needs to be done. Only if we can show the plausibility of development without fossil fuels, can we encourage third world countries to initiate their own emissions reductions.

Economic and urban development in the last 200 years has largely been at the expense of the world's ecosystems. Forest cover across the world has been reduced by about 50 per cent and the indigenous people, particularly in the tropics, have suffered terribly in the process. Ways have to be found to pay developing countries for the global "ecosystem services" provided by their forest cover – and their capacity to absorb carbon dioxide and to release moisture to distance places. Under the auspices of climate justice this is a historic responsibility, and it needs to benefit the poorer tropical and subtropical countries of the world and their people above all else.

Affirming the principle of "ecological debt", we need to acknowledge the entitlement of the victims of climate change to have their ecosystems restored, and to address the loss of land and livelihood they have suffered, and to establish legal precedents to that effect. Humanity needs to make every effort to protect the world's ecosystems, such as forests and coral reefs, and to initiate large-scale projects to reforest denuded areas of land, above all else for the benefit of local populations.

Global justice requires that we make personal and collective choices to use the Earth's resources prudently, and particularly to minimise our use of fossil fuel energy. We are challenged to rebalance our lifestyles to assure that unborn generations have adequate natural resources, a stable climate and a healthy planet.

As Bill McKibben points out, we are the ones who kicked off global warming. But now, the planet is taking over the job. McKibben gives the example of a particular species of beetle which, "encouraged by warmer temperatures, has already managed to kill ten times more trees than in any previous infestation across the northern reaches of Canada this year. This means far more carbon heading for the atmosphere and apparently dooms Canada's efforts to comply with the Kyoto Protocol, already in doubt because of its decision to start producing oil for the U.S. from Alberta's tar sands." Now that the Arctic ice is melting, what was previously a shield of ice reflecting 80% of solar radiation back into space is now, as water, absorbing 80% of the sun's heat.

I would like now to quote Al Gore, speaking after Hurricane Katrina devastated New Orleans:

*Winston Churchill sounded warnings of what was at stake when the storm was gathering on Europe: "The era of procrastination, of half measures, of soothing and baffling expedience of delays, is coming to a close. In its place we are entering a period of consequences."*

Given the scale of this impending disaster, we have no choice but to embark upon a global renewable energy revolution, by replacing our carbon-driven economy with a renewable energy economy. The challenge we are facing now is how to switch to a more secure, lower-carbon energy system that does not undermine economic and social development, and addresses the threats of climate change and global inequality.

So we have reached both an environmental and an economic tipping point. Which direction we choose to take will decide the fate of our planet. What is certain is that we must bring about fundamental change in our energy systems, with a renewed focus

on energy security and lower, if not zero, carbon emissions.

Whilst conventional fossil and atomic energies continue to endanger our health, the health of the planet, risk sparking conflict over declining resources, and require high water consumption and ever-increasing costs, renewable energy sources do not bring with them these negative effects. They are the only solution to the three key global energy challenges: energy security, cost efficiency and environmental protection. The task now is to create policies that make investment in renewable energies an attractive proposition at national and international levels. If we are to avert the tipping point, we must take significant and painful steps, and we must take them now. We can no longer solve the climate crisis one light bulb at a time.

The arguments that renewable energy does not provide sufficient or affordable alternatives to traditional energy sources have been exposed as flawed and false. Furthermore, the cost of finite conventional energies will continue to rise as the sources dry up. Renewable energy costs will generally go down, as they consist almost exclusively of technology costs. Mass production and technological innovation will bring dramatic decreases in cost. So we should not see the promotion of renewables as a burden: we should see it as a unique economic opportunity – one that will reward those who get on board early.

In Copenhagen in 2009, the parties of the United Nations Framework Convention on Climate Change will meet for the last time before the urgently-needed successor to the Kyoto agreement will be finalised. This is a great opportunity to kick-start the process. But we must not allow the emissions agreements to be reached in Copenhagen to be just more “lip service”, the like of which we saw in Bali. The only chance we have of saving the planet is a complete “renewable energy revolution” – the commitments from our governments must be genuine and far-reaching if they are to avert disaster.

A crucial instrument of the renewable energy revolution will be the international renewable energy agency, or IRENA, proposed by German MP and member of the World Future Council Hermann Scheer. I recently spoke in Berlin, at the invitation of the German Federal Government, at the Preparatory Conference for the Establishment of IRENA. It is my belief that if we are to embark on a global renewable energy revolution, we cannot do it without IRENA. IRENA is both necessary and urgent if we are to avoid disaster. Yet the U.S. government did not even send an official delegation to this conference.

There can be no more empty talk. IRENA is just one aspect of the change in outlook we must effect. If we want to preserve the planet for future generations, we require a Copernican revolution in our outlook. Each and every one of us must be prepared to make fundamental, lasting and immediate change in the way we live. This must be a holistic change in the way we see the world and the way we see ourselves.

Although some more pessimistic scientists warn that we have already passed the tipping point of climate chaos, and that human intervention is now futile, I like to think that is not yet the case. I am convinced that if we act now we can save our world and ourselves. So long as it is possible, however remotely, then it is an overriding moral imperative to try.

But we are not just aiming for a set of goals. This is not a checklist by which our success can be measured. It's no good to have four out of five, or even nine out of ten. We have to aim for a virtuous circle of morally sound principles and practices. We are reaching a threshold from which there will be no return. If we do not hold our politicians accountable for their decisions; if we do not improve energy efficiency; if we do not bring immediate and serious investment in renewable energy – if we are not prepared to do these things, we may not have a world left protecting before very long. There is no time for further excuses, postponement, or procrastination. This is a time for courage and leadership, and for positive and immediate action.

In October of last year, Barack Obama called climate change “one of the greatest moral challenges of our generation”. Our lives and the lives of our children and their children are at stake. We have allowed Bush to hold our future to ransom. We have run the risk of condemning future generations to the ravages of global warming. Setting America on the path to oil independence must be the focus of the next few decades. If we do not act now, the battle will be lost.