

The economic costs and ineffectiveness of the Kyoto protocol

The Kyoto protocol has been adopted by the governments of the various signatory countries as a vital solution to global warming. It aims to reduce man-made emissions of greenhouse gases, which are seen as the main cause of global warming and are present in all productive activities. However, despite enthusiasm for the protocol among environmentalists, politicians and pundits, it is a very risky solution, considering its disastrous economic consequences on our quality of life and the likely insignificance of its impact on the climate.

The demands of the Kyoto protocol

The Kyoto protocol was adopted back in 1997 but came into effect only in February 2005. It involves mostly the developed countries and those in transition to a market economy, requiring the application of tax and regulatory measures as well as the political organisation of a greenhouse gas emission rights "market".¹ The explicit goal is to reduce the concentration of these gases in the atmosphere, thereby putting an eventual end to global warming.²

Over the period from 2008 to 2012, the protocol requires participating countries³ to reduce greenhouse gas emissions *collectively* by 5.2% compared to the 1990 level. Based on energy choices, the history of past emissions or the international negotiations that resulted in the protocol, not all countries are obliged to reduce their greenhouse gas emissions in the same proportions. Sweden, for example, is allowed to



increase its emissions by 4%, whereas other countries, such as Germany or Denmark, must cut their emissions sharply (-21%). France, with its intensive use of nuclear energy, can keep its 2012 emissions at 1990 levels.

In terms of meeting goals, the situation also varies considerably from one country to another. Some countries are already far in excess of the greenhouse gas emissions allowed under the protocol. Spain, for example, pledged to attain an emissions level only 15% higher in 2012 than in 1990, but its emissions were already up 36.8% in 2001.⁴ On the other hand, some countries have more than met their goals. Sweden is the perfect example, with CO₂ emissions in 2001 down 28.8% compared to the 1990 level, whereas the protocol allows it to increase its emissions by 2012. But this range in the performances of various countries merely reflects the unrealistic nature of commitments made against a recent backdrop of sharp rises in emissions in certain countries, such as Spain and Ireland.

The negative effects of Kyoto

It is important first of all to note that global warming is not a catastrophe for all of humanity. Presenting climate as a collective good⁵ does cause

* The IEM wants to thank M. Ian Clark, professor in isotopic hydrogeology and paleoclimatology at the University of Ottawa (Canada), for his contribution to this economic note.

¹ On the nature of legal and economic threats, see Yves Petit, *Le protocole de Kyoto - Mise en œuvre et implications*, Presses Universitaires de Strasbourg, 2002. The text of the protocol may also be consulted, at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>

² On global warming and the various measures for countering it, see the official reports available on the splash page of the site of the Intergovernmental Panel on Climate Change (IPCC, 2001), available at www.ipcc.ch

³ More precisely the so-called Annex B countries (western countries except the United States, Russia and eastern Europe).

⁴ These 2001 figures from the United Nations Framework Convention on Climate Change (UNFCCC) can be found on sites including <http://www.manicore.com/documentation/serre/negociations.html>

⁵ A good is collective when everyone can enjoy it with no possible exclusion. See Roger Guesnerie, Paul Champsaur and Alain Lipietz, *Kyoto et l'économie de l'effet de serre*, Rapport du CAE, La documentation française, 2003.

people to regard global warming as bad for everyone. But warming is defined by higher average temperatures. This may actually mean that certain regions turn cooler while others get warmer, scientists say. For example, average warming may go together with cooling of the North Atlantic region.⁶

Warming will thus not be experienced everywhere on earth. But even in places where the temperature is clearly rising, there will be beneficial effects. Global warming may cause the destruction or non-replacement of infrastructure and real property in some regions, due in particular to a rise in sea level. In other parts of the world, however, it will boost agricultural productivity and reduce the incidence of sometimes deadly cold-related illnesses (flu, pneumonia, etc.).⁷ Applying the Kyoto protocol, even if it turned out to be effective, would lead to a loss of well-being for entire societies that would otherwise benefit from global warming.

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The Kyoto protocol relies on governments applying tax and regulatory measures that require companies to emit lower volumes of greenhouse gases. This would raise production costs and result in lower earnings for greenhouse gas-generating activities. An emission rights "market" created by the Kyoto protocol would reduce earnings further. Because the purchase of emission rights involves an additional cost, profitable production will be lower. These rights risk becoming increasingly expensive as time goes on since the aim of the protocol is to reduce greenhouse gas emissions.⁸ Accordingly, we can expect the quantity of emission rights to remain low so as to increase the cost of using technologies regarded as "dirty".

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Companies will find these rights increasingly hard to purchase. With the restraints imposed by the Kyoto conditions, some companies

will be unable to bear losses from investments with no payback and costs required by new spending on "clean" technologies. Added to this are the costs resulting from the fact that resources diverted to meet the protocol - several hundred billion dollars a year - will not be available for companies to invest, or individuals to spend, on other more beneficial projects.⁹

It is important to note that the Kyoto protocol will have a brutal effect on our way of life. By raising production costs, it will penalize activities that emit greenhouse gases. Activities suspected of contributing directly or indirectly to global warming are everywhere - in heating and cooling, energy production, the manufacture of various raw materials (plastic, steel, etc.), the processing of products, or powering our many electrical devices (lighting, computers, household appliances, etc.). The scope of these activities is evident in our weekly shopping trips and helps us understand that Kyoto, by increasing the prices of all goods involving the production of greenhouse gases, inevitably reduces our purchasing power and quality of life.

Environmentalists say the scope of sacrifices that may lie ahead hardly matters and the Kyoto protocol at least has the merit of stopping global warming. But nothing is less certain.

Kyoto's ineffectiveness in dealing with climate

The first doubt regarding Kyoto's effectiveness comes from uncertainty as to the causes of global warming. Even if it turns out to be true, something that is being challenged,¹⁰ there exists no scientific consensus on the belief that a significant share of global warming is due to human emissions of greenhouse gases. Some researchers say warming may result mainly from greater solar activity. They have shown in particular that our planet's warming and cooling cycle matches the solar activity cycle with a small lag (see Figure. 1).

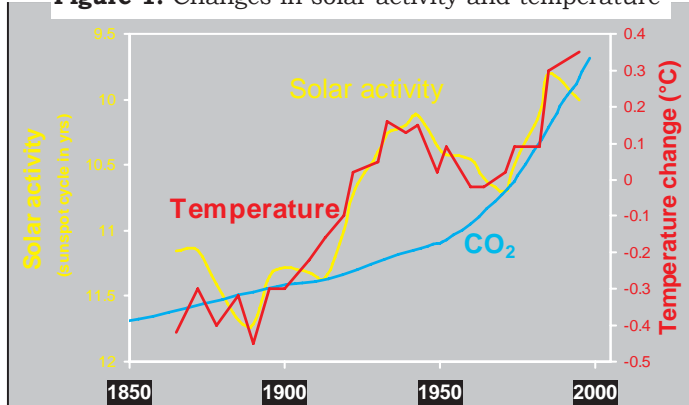
⁶ See *Sciences & Avenir*, No. 708.

⁷ See Björn Lomborg, *The Skeptical Environmentalist*, Cambridge, 2001.

⁸ The recent drops in the price of a tonne of CO2 provide no reason to believe that the protocol will not add heavily to firms' costs over time. In the period from 2008 to 2012, the protocol will impose increased vigilance by the authorities to limit emissions. Consequently, if the rights are not expensive enough and enable firms to keep on increasing their greenhouse gas emissions, the market regulatory authorities can be expected to reduce substantially the quantity of emission rights. Scarcity of rights cannot fail to send prices higher.

⁹ Incidentally, this may lead indirectly to Kyoto reducing spending on humanitarian projects.

¹⁰ Although information provided by the mass media often suggests the contrary, a scientific consensus no longer exists at present on the reality of global warming (and much less on the scope of this warming). For writing that stands apart from this consensus on warming, see works including Peter Singer, *Hot Talk, Cold Science: Global Warming's Unfinished Debate*, The Independent Institute, 1998.

Figure 1: Changes in solar activity and temperature

Sources: Ian Clark, "Is Kyoto Necessary?", November 2005, available at <http://www.iedm.org/uploaded/pdf/ianclark1105.pdf>.¹¹

The Kyoto protocol obviously has no influence on solar activity. If it were, it would be completely useless to bear the sacrifices it imposes on us in reducing human emissions of greenhouse gases, which may not be the main cause of global warming. With the precautionary principle being raised ceaselessly, it could be applied to the Kyoto protocol itself by deferring its implementation, considering the uncertainties as to its effectiveness.

Moreover, even if greenhouse gas emissions were truly responsible for global warming, long-term forecasts of the Kyoto protocol's impact confirm that it is ineffective. Many scientists say the protocol, in force until 2012, will have no impact unless it is extended or supplemented by other restraints.¹² But even if the greenhouse gas emission ceilings set by the Kyoto protocol were to be extended, the temperature in 2100 would be only 0.15°C lower than without Kyoto, according to Australian geophysicist Tom M.L. Wigley.¹³ This difference would correspond to a temperature 1.92°C higher in 2100 than in 1990, a variation that would be reached six years earlier - in 2094 - if nothing were done. In other words, the Kyoto protocol would merely delay global warming by six years (see Figure 2).¹⁴

¹¹ The work of Canadian paleoclimatologist and professor Ian Clark is based on studies including P. Thejll and K. Lassen, "Solar forcing of the Northern hemisphere land air temperature: New data", *Journal of Atmospheric and Solar-Terrestrial Physics*, 62, 2000, pp. 1207-1213, and K.S. Carslaw, R.G. Harrison and J. Kirkby, "Cosmic Rays, Clouds, and Climate", *Science*, 22 November 2002, pp. 1732-1737.

¹² See Guesnerie, *op. cit.*

¹³ Tom M.L. Wigley, "The Kyoto Protocol: CO₂, CH₄ and Climate Implications", *Geophysical Research Letter*, 25 (13), 1998, cited in Lomborg, *op. cit.*

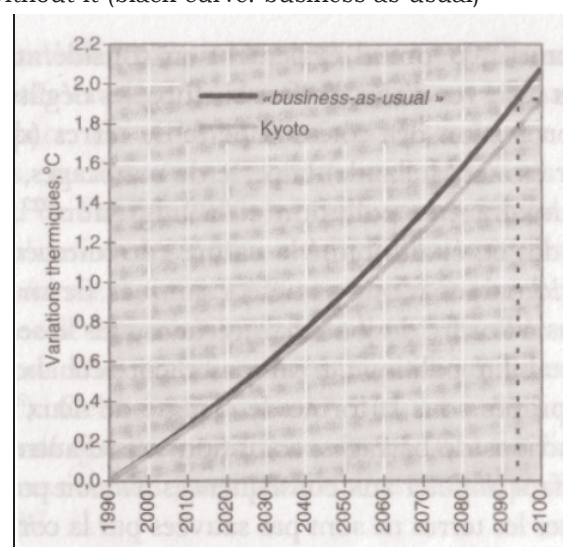
¹⁴ These forecasts based on research are cited in the book by Lomborg, *op. cit.*, Chapter 24. They are also found in the work by Tom M.L. Wigley, *op. cit.*

Looking beyond disputes over numbers and uncertainties over the pertinence of forecasting models, an economic observation considerably strengthens the hypothesis that Kyoto's results will be insignificant. The protocol applies at present to a limited group of countries, those that are industrialized or in transition to a market economy.¹⁵ As a result, with factors of production costing more due to the higher price of emission rights (and of tax and regulatory restraints), many firms that come under the protocol will simply move their production to countries that are not covered by it. Worldwide greenhouse gas emissions will not be reduced: rather, the sources will simply be transferred to countries that do not come under Kyoto.

The insignificant impact of the current Kyoto protocol has led some environmentalists to suggest a "Super Kyoto" that would involve reducing greenhouse gas emissions far more sharply during this century. This solution is not viable, however, considering the substantial costs that the current protocol is already imposing on economies.

A broadened Kyoto protocol deters development

A number of scientists are suggesting a "market" for the right to pollute that would be extended to developing countries. In principle, this would encourage producers in these countries to seek less polluting procedures. But inevitably, this would broaden the restraints they would face, affecting the profitability of their companies.

Figure 2: Global warming with the Kyoto protocol (grey curve) and without it (black curve: business as usual)

Source :
LOMBORG,
2004, p.
504.

¹⁵ See Annex B of the Kyoto protocol, available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

Moreover, organizing this market is not very realistic. The governments of developing countries remind us that the developed countries based (and continue to base) their economic growth on activities with heavy greenhouse gas emissions. People in developing countries also wish to benefit from these activities with their high growth potential. In this context, there is little chance that developing countries will accept a "broadened" Kyoto protocol and apply it effectively if it prevents them from enjoying the development opportunities that rich countries benefited from in the past and continued to benefit from today.

In this regard, it is important to remember that, the more economies develop, the more their accumulated capital is substantial and of high quality. Countries with high-quality capital will be better able to resist the negative effects of future global warming than less developed countries. In contrast, imposing measures to curb greenhouse gas emissions throughout the world runs a strong risk of holding back growth in developing countries, where part of the population, through production and economic development efforts, is increasingly able to cope with the vagaries of life (disease, natural catastrophes, etc.). The Kyoto protocol will inevitably reduce their weak purchasing power and their ability to adapt.

"We must at least avoid attributing every virtue to the Kyoto protocol and recognize that public debate on global warming is far from over. Not only is this debate worth continuing, but it should move toward greater consideration of the various aspects and uncertainties concerning global warming and the measures intended to limit it."

Conclusion

The Kyoto protocol exposes participating countries to enormous costs in return for very scarce positive results. It will lead to lower production, higher prices and thus a loss in purchasing power both in developed and in developing countries. Because activities that emit greenhouse gases are involved in the production of most goods and services, higher prices and restrictions that deter production will mean consumers have to accept an unprecedented decline in their quality of life. An eventual broadening in application of the protocol to cover the entire world would condemn countries already in difficulty to chronic underdevelopment.

For all these reasons, we must at least avoid attributing every virtue to the Kyoto protocol and recognize that public debate on global warming is far from over. Not only is this debate worth continuing, but it should move toward greater consideration of the various aspects and uncertainties concerning global warming and the measures intended to limit it.

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