Climate Change, ethics and the economics of the global deal

Sir Nicholas Stern , 30 November 2007

Targets and trading must be at the heart of a global agreement to reduce greenhouse gas emissions, according to Sir Nicholas Stern delivering the Royal Economic Society's 2007 annual public lecture today, ahead of next week's world summit on climate change in Bali.

The problem of climate change involves a fundamental failure of markets: those who damage others by emitting greenhouse gases generally do not pay. Climate change is a result of the greatest market failure the world has seen. The evidence on the seriousness of the risks from inaction or delayed action is now overwhelming. We risk damages on a scale larger than the two world wars of the last century. The problem is global and the response must be a collaboration on a global scale.

Rich countries must lead the way in taking action. That means adopting ambitious emissions reduction targets; encouraging effective market mechanisms; supporting programmes to combat deforestation; promoting rapid technological progress to mitigate the effects of climate change; and honouring their aid commitments to the developing world.

Next week the world gathers at Bali for the meeting of the Conference of the Parties of the United Nations Framework Convention on Climate Change. In thinking about global action to reduce greenhouse gas emissions, we must invoke three basic criteria:

- Effectiveness: the scale must be commensurate with the challenge – which means setting a stability target (or its equivalent in terms of an emissions reduction path) that can keep the risks at acceptable levels.
- Efficiency: we must keep down the costs of emissions reduction, using prices or taxes wherever possible.
- Equity: the problem is deeply inequitable with the rich countries having caused the bulk of current stocks of greenhouse gases and the poor countries being hit earliest and hardest – which means that the rich countries must take the lead.

What should the main elements of a global deal look like, what sort of a deal should it be, and how should it be built and sustained? My proposal is for a six-point programme with two groups of elements, the first three concerning targets and trading:

- First, the overall targets of 50% reductions in global emissions by 2050 (relative to 1990) agreed at the G8/G5 summit in Heiligendamm in June this year are essential if we are to have a reasonable chance of keeping temperature increases below 2 or 3°C. While these targets involve strong action, they are not over-ambitious relative to the risks of failing to achieve them. Fixed quantity targets are crucial for the management of risk. Within these global

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targets, even a minimal view of equity demands that the rich countries' reductions (direct or purchased) should be at least 80%.

- Second, there should be substantial trade between countries, including rich and poor countries, in greenhouse gas emissions. This will promote efficiency – in other words, the cheapest ways of achieving cost reductions. At the same time, the flow to poor countries will help them cover their costs of greenhouse gas reduction, thereby giving them an incentive to join a global deal. Trade in emissions reduction has a double benefit: efficiency and glue for a global deal.
- Third, there should be a major reform of the Clean Development Mechanism, a Kyoto mechanism that allows developing countries to sell emission reductions, but does not penalise them for emissions themselves (a 'one-sided' trade mechanism). This is much too cumbersome for the scale required and omits key technologies. In the next stage, its successor should be based on sector and technological benchmarks against which reductions can be measured. In this way, it can move to 'wholesale' and build confidence in a flow of private sector finance to developing countries to help build low-carbon economies that can grow strongly. Demonstrating the viability of these flows is crucial to any acceptance, eventually, of overall targets by developing countries.

The second group of proposals for the global deal involves public funding:

- Fourth, there should be a coherent, integrated international programme to combat deforestation, which contributes 15-20% of greenhouse gas emissions. For $10-15 billion per year, a programme could be constructed that could stop up to half the deforestation.
- Fifth, there needs to be promotion of rapid technological advance for mitigation. The development of technologies must be accelerated and methods found to promote their sharing. Carbon capture and storage (CCS) for coal is particularly urgent since coal-fired electric power is currently the dominant technology round the world and emerging nations will be investing heavily in these technologies. For $5 billion a year, in terms of feed-in tariffs (which could be reduced as carbon prices rise), it should be possible to create 30 commercial scale coal-fired CCS stations within seven or eight years. Unless the rich world demonstrates, and quickly, that CCS works, developing countries cannot be expected to commit to this technology.
- Sixth, rich countries should honour their commitments to 0.7% of GDP in aid by 2015. This would yield increases in flows of $150-200 billion per year. The extra costs developing countries face as a result of climate change are likely to be upwards of $80 billion per year and it is vital that extra resources are available for new initiatives. Adaptation to a changing climate is part of good development and is not separate from it.

This programme is one that can be built if rich countries take a lead in Bali on their targets, the promotion of trading mechanisms and funding for deforestation and technology.

Within different countries, there will be different choices of instruments – such as taxes, trading and standards – and different technological mixes. In all countries, there is scope for energy efficiency, which both reduces emissions and saves money. But trading must be a central part of the story because it can provide the international incentives for participation, and promote efficiency and equity, while controlling quantities of emissions.

With leadership and the right incentives on carbon finance and technologies, developing countries will join. The starting point is deeply inequitable, and developing countries feel this inequity very strongly. Poor countries will be hit earliest and hardest by climate change, but rich countries have created the bulk of past emissions and thus the stock of greenhouse gases. Currently US emissions are more than 20 tonnes of CO_2 equivalent per annum, Europe 10-15 tonnes, China 5 or more tonnes, India around 1 and most of Africa much less than 1.

For a 50% reduction in global emissions by 2050, the world average per capita must drop from 7 tonnes to 2-3 tonnes. An 80% target for rich countries would bring equality of only the flow of emissions around the 2-3 tonnes per capita level. In fact, they will have consumed the big majority of the “available space in the atmosphere”. Notwithstanding this great inequity, developing countries know they must be strongly involved in global action.

The building of the deal and its enforcement will come from the willing participation of countries driven by the understanding of the people that action is vital. It will not be a “wait-and-see” game as in World Trade Organisation talks, where nothing is done until everything is settled. The necessary commitments are increasingly being demonstrated by political action and elections around the world. A clear idea of where we are going as a world will make action at the individual, community and country level much easier and more coherent.

These commitments must, of course, be translated into action. There is a solution in our hands. It will not be easy to build. But the alternative is too destructive to accept. Bali is an opportunity to draw the outline of the common understanding or framework, which will both guide action now, and build towards the deal.

The last few years have seen a deepening understanding of:

- Climate change and particularly the risks the world faces – see the fourth assessment report of the International Panel on Climate Change published this year, and summary document two weeks ago.
- The challenges of adaptation that the developing world faces – see the United Nations Human Development Report published this week.
- The scale of the response required in terms of reductions of greenhouse gas emissions and the economic and technological instruments that can support and drive these reductions – see the Stern Review on the economics of climate change.
- Business too is becoming clear about what is necessary, as demonstrated in this week’s publication on climate change from the UK’s Confederation of British Industry.

This understanding is increasingly reflected in public demand for responsible action and in country after country, this is being demonstrated in the political and electoral processes. It is public demand that will promote and sustain action at the individual, community, national and international levels.

This is a problem that is global in its origins and global in its impacts. Action is urgent if we are to avoid the stocks of greenhouse gases building to levels that involve unacceptable risks. Because this is a flow-stock process – we can control only the flows of greenhouse gases and once the stocks are there, they are very difficult to remove – any delay will build up stocks making subsequent action to stabilise at acceptable levels much more costly.

Price mechanisms for greenhouse gases will be central to correcting the market failure, but the urgency and risk of the problem and inertia in behaviour imply that policy must go further. This means bringing forward technologies, deepening an understanding of what responsible behaviour means, overcoming other market failures that inhibit energy efficiency and innovation, and combating deforestation. We now have fairly clear idea of what to do and how to do it.

My six-point programme satisfies the requirements of effectiveness, efficiency and equity. It would allow all countries of the world to pursue their development aspirations via low-carbon growth. The necessary greenhouse gas reductions would cost around 1% of world GDP per annum over coming decades.

These costs are fairly modest relative to world wage differentials and medium-term exchange rate movements. For the most part, they do not raise serious issues of competitiveness; where they do they can be handled directly. On the other hand, new technologies can create great opportunities and provide impetus for new growth. Low-carbon growth is the growth strategy. Weak action will eventually stifle growth.

The costs of action are a small price to pay for the grave risks it would avert. The world would thereby greatly reduce the additional future expenditures necessary on adaptation, although substantial extra expenditure in both rich and poor countries would be unavoidable.

Topics: Energy
Tags: climate change, emissions, greenhouse gases

Comments

Stern is mistaken to think binding targets will work

Submitted by petergallagher on Mon, 12/03/2007 - 01:14.

I'm reluctant to quarrel on economic grounds with an eminent economist. I think, however, Stern has got it wrong because we've just no reason to think that targets will really work to distribute responsibility for mitigation outcomes in a multilateral agreement. The 'incentive compatibility' problem with this use of targets is likely to be a fundamental flaw in the case of climate negotiations.

A more detailed criticism here

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