Global Warming

THE COMPLETE BRIEFING

THIRD EDITION

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Realising the Climate Convention Objective

Having decided on a choice of stabilisation level, a large question remains: how can the nations of the world work together to realise it in practice?

The Objective of the Climate Convention is largely concerned with factors associated with the requirement for sustainable development. In Chapter 9, four principles were enunciated that should be at the basis of negotiations concerned with future emissions reductions to mitigate climate change. One of these was the Principle of Sustainable Development. The others were the Precautionary Principle, the Polluter-Pays Principle and the Principle of Equity. This latter Principle includes *intergenerational* equity, or weighing the needs of the present generation against those of future generations, and *international* equity, or weighing the balance of need between industrial and developed nations and the developing world. Striking this latter balance is going to be particularly difficult because of the great disparity in current carbon dioxide emissions between the world's richest nations and the poorest nations (Figure 10.2), the continuing demand for fossil fuel use in the developed world and the understandable desire of the poorer nations to escape from poverty through development and industrialisation. This latter is particularly recognised in the Framework Convention on Climate Change (see box at the beginning of the chapter) where the growing energy needs of developing nations as they achieve industrial development are clearly stated.

An example of how the approach to stabilisation for carbon dioxide might be achieved is illustrated in Figure 10.3. It is based on a proposal called 'Contraction and Convergence' that originates with the Global Commons Institute (GCI),[23] a non-governmental organisation based in the UK. The envelope of carbon dioxide emissions is one that leads to stabilisation at 450 ppm (without climate feedbacks included), although the rest of the proposal does not depend on that actual choice of level. Note that, under this envelope, global fossil-fuel emissions rise by about fifteen per cent to about 2025; they then fall to less than half the current level by 2100. The figure illustrates the division of emissions between major countries or groups of countries as it has been up to the present. Then the simplest possible solution is taken to the sharing of emissions between countries and proposes that, from some suitable date (in the

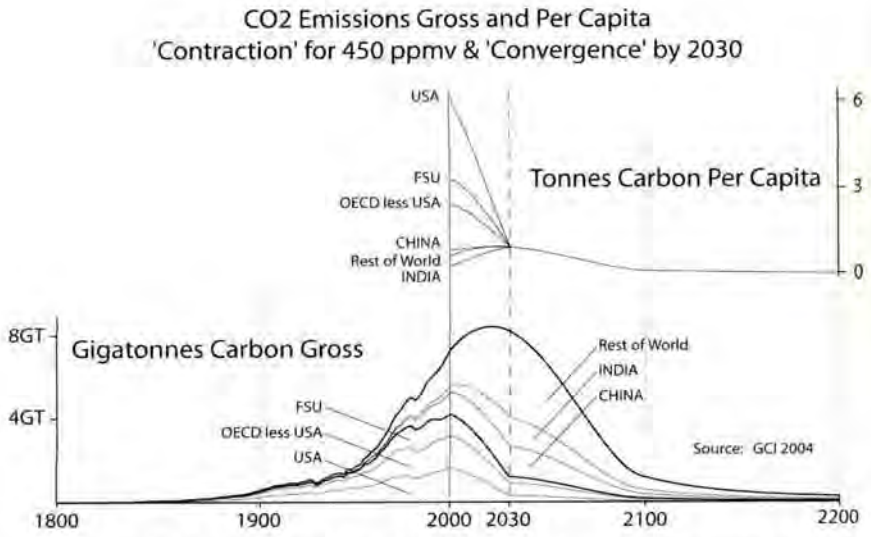

Figure 10.3 Illustrating the 'Contraction and Convergence' proposal of the Global Commons Institute for achieving stabilisation of carbon dioxide concentration. The envelope of carbon dioxide emissions illustrated is one that leads to stabilisation at 450 ppm (but the effect of climate carbon cycle feedbacks is not included). For major countries or groups of countries, up to the year 2000, historic emissions are shown. After 2030 allocations of emissions are made on the basis of equal shares per capita on the basis of population projections for that date. From now until 2030, smooth 'convergence' from the present situation to that of equal shares is assumed to occur. In the upper part of the diagram the per capita contributions that apply to different countries or groups of countries are shown. For OECD and FSU see Glossary.

figure, 2030 is chosen), emissions are allocated on the basis of equal shares per capita. From now until 2030 the division is allowed to converge from the present situation to that of equal per capita shares. Hence the 'contraction and convergence'. The further proposal is that arrangements to trade the carbon dioxide allocations are made.

The 'Contraction and Convergence' proposal addresses all of the four principles mentioned above. In particular, through its equal per capita sharing arrangements it addresses head-on the question of international equity – and the proposed trading arrangements ensure that the greatest 'polluters' pay. Its simple and appealing logic means that it is a strong candidate for providing a long-term solution. What has yet to be worked is how the 'convergence' part of the proposal can be implemented, but then any proposal for a solution will have to address the problem of 'convergence'.

Another example of a pathway to stabilisation during the twenty-first century of carbon dioxide concentration is set out in a study sponsored

by the World Energy Council and published in 1993.[24] An 'ecologically driven scenario' – Scenario C – of global carbon dioxide emissions is described that leads to stabilisation at about 450 ppm (without carbon feedbacks included) – see Figure 11.4. Under that scenario, global carbon dioxide emissions grow by about ten per cent (from 1990 levels) by the year 2050; they then fall by sixty per cent by 2100 (Table 11.2). For the first two decades of the twenty-first century, the World Energy Council provide detailed projections for Scenario C that recognise the requirement for international equity. Up to the year 2020, emissions from fossil fuels in the developing world are allowed to approximately double, while those from developed countries fall by about thirty per cent (Figure 11.5). In 2020, global emissions from developing countries would be sixty per cent of the total for the world compared with about one-third in 1990. After 2020 reductions in emissions in all countries would be required.

As the World Energy Council point out in their report, achievement of such a scenario will be far from easy. It requires three essential ingredients. The first is an aggressive emphasis on energy saving and conservation. Much here can be achieved at zero net cost or even at a cost saving. Though much energy conservation can be shown to be economically advantageous, it is unlikely to be undertaken without significant incentives. However, it is clearly good in its own right, it can be started in earnest now and it can make a significant contribution to the reduction of emissions and the slowing of global warming. The second ingredient is an emphasis on the development of appropriate non-fossil fuel energy sources leading to very rapid growth in their implementation. The third is the transfer of technologies to developing countries that will enable them to apply the most appropriate and the most efficient technologies to their industrial development, especially in the energy sector.