

ANIL RAZDAN

Former Power Secretary, Government of India

It should be clear to us from what we have been discussing so far that the debate on development issues must centre around universal, human-centred development, and not mere development, whether capitalist or socialist. The four E's that go hand in hand for any sustainable development are energy, equity, environment and efficiency. Energy, which is a prime mover of development and poverty alleviation, has to be available, affordable, reliable, and sustainable. Surprisingly, a quote from Mahatma Gandhi, the founder of my nation, is quite relevant. He said, 'the earth has enough resources to meet people's needs, but will never have enough to satisfy people's greed.'

Energy growth in the timeframe of 2006-2030 is expected to be in the region of 1.8% annually, and luckily energy efficiency will also show an improvement of 1.8%. Another positive sign is that some developing countries are doing better than developed countries in this respect. However, the key question for governance is whether energy will drive the environment or whether environment will determine energy use. The present crisis, like any crisis, has come from recklessness and indiscretion on the part of the developed world over the years, and maybe out of ignorance, because everything was going fine until about the 1990s.

Coming back to development, I would say that the key concerns for developing countries like India and a number of emerging economies, and I would say that the definition of 'emerging economy' is not necessarily what IEA has put across, are as follows. Access to energy for many people in the world is limited and skewed. The supply of easily accessible fossil fuel is becoming more scarce, and its distribution is skewed. Energy security and political risks are looming large, as oil is mostly located in volatile areas. Then there is the stark image of climate change.

The per capita consumption of energy, as you know, is highly skewed, and in fact the factor differential is about 1:20 between the developing world and the richest countries in the developed world. You will be surprised to know that 400 million people in India still live without electricity. The Government has come forward with a plan to give a 90% grant to those state constituents who wish to bring electricity to every home. This is particularly true of rural areas. Any system, to be just, must be equitable and just to rich and poor alike, and this means to nations as well as to constituents within a country. Failure to take energy to the have-nots is a sure recipe for unrest and violence, and will make democratic governance, in my view, irrelevant. There are hitherto tribal pockets in India which have been left to live as they always did, but this is not acceptable to them. They want electricity, communications, and modern facilities.

Energy sources are more of an option of availability and affordability than a choice, just as much as food or shelter, particularly for the poorest nations. The reserves to production ratios are about 120 years for coal, 60 years for natural gas, and about 50 years for oil. Coal happens to be more

evenly distributed across the globe, and there are good resources in developing countries, hence the extensive use of coal. Oil is dominant in the Middle East, and there have not been any major discoveries in the last 20 years. Natural gas is a little less skewed, but there are pipeline constraints and LNG transportation costs. Natural gas, in summary, is a fuel for the rich.

I mentioned that all seemed to be well until the 1990s, when the rich continued to bathe and wallow in energy, the poor remained without, and nobody was bothered. Then concerns about climate change showed up at the UN Framework Convention on Climate Change (UNFCCC) in 1992, and the spectre of global warming came up. There was also the principle of common but differentiated responsibility and respective capabilities. This was followed by the Kyoto Protocol in 1997, which kept this principle intact. Some developing countries started moving in the meantime towards development, notably China, India, Brazil and Southeast Asia. They are continuing to grow, and they view the 21st century as their century of opportunity to take their populations out of poverty into decent standards of living.

The IPCC report in 2007, the panel of which was headed by an Indian scientist, shows greater areas of concern, such as a 70% increase in greenhouse gas emissions between 1970 and 2004. CO₂ emissions have risen dramatically, particularly in the 20th century, but two-thirds of the emissions are from developed countries. The carbon footprint of developing countries is just a speck compared with the vast footprints of some of the larger economies. India's share of the annual global emissions of carbon of about twenty eight billion tonnes is about a one and a half billion, and the per capita emissions are one tonne as against an average of 20. One of India's major programmes is to maintain energy intensity at a low figure.

However, when there is pressure not to develop any further and you must choke your supply lines, the rather crude question that is asked in developing countries is who caused the cancer and which organ should undergo chemotherapy. Should it be those who have not yet started using energy, or should it be those who have used energy excessively in the past? Developing countries, in my view, should be allowed to grow and reduce poverty levels while pursuing enlightened policies, policies which democratic and enlightened governments will continue to pursue in a spirit of cooperation.

Technology, in my view, will again provide the answer, and the questions are of cost and affordability. I do not think new technologies can be purchased at the indicated costs by developing countries. The IEA indicated that the mitigation costs would be about USD50 per tonne for the present state of technologies, with about USD200-500 per tonne of CO₂ saved, and investments could vary from USD20-45 trillion. These costs have to be shared with the developing countries, as these countries do not ask for free power, or free energy sources, or free technology. They should only be given the marginal costs of adopting new technology. I think any sane government or administration would use technologies that are more environmentally friendly, and because developing countries stand to lose most from global warming owing to their fragile economies, they need to spend much more on adaptation. There is no talk of this aspect, but only of mitigation. Therefore adaptation, mitigation and financing structures have to be put in place.

A national action plan on climate change has been launched in India which has eight objectives, two of which concern solar and energy efficiency. Others concern glaciers, water etc. What we



need is a global regime for meeting incremental costs related to accelerated introduction of new and cleaner technologies, and a cost reduction in these technologies through locating their manufacture in developing countries, which will give these countries a sense of ownership. However, the products must meet energy, environment and cost targets. We also need to develop smart grids to harness even micro energy production to a usable central pool. Solar, wave energy, thorium and other low carbon energy technologies should receive our attention. We should begin investing heavily in new technology and in carbon fixation and utilisation. The future is there for all of us if we move together with equity, justice and good sense.