



# mission possible

by Shyam Saran

The Sun has long been recognized as the primal source of all energy on Earth. In an ancient civilization like India's, it has been worshipped as a god who bestows life-sustaining heat and light to all living beings. Sunlight is locked up as usable energy in fossil fuels and carbon, but these are finite and are being rapidly depleted. Yet the Sun's direct energy is inexhaustible and constantly renewable. The energy in sunlight that reaches our earth in just 40 minutes is equivalent to current global energy consumption for a year — and what is more, solar energy in itself is totally free.

India has significant advantages it can leverage in promoting solar energy as an alternative and renewable energy source. Firstly, the intensity and duration of sunlight available on its landmass is relatively greater than in many other heavily populated regions of the world. Just 1 per cent of India's land area can meet its entire electricity requirements up to 2030. Secondly, the country's very size permits a rapid build-up of capacity to levels that can allow significant economies of scale.

Another factor adds to the attractiveness of solar power, even at current technological levels. India's peaking power requirements during the daytime hours provide a virtually precise fit to the availability of solar power through photovoltaics.

The Prime Minister of India launched the country's first National Action Plan on Climate Change on 30 June this year. Among the eight National Missions which form the substantive content of the Plan, the National Solar Mission has been given pride of place. This fits in very well with the Plan's basic thrust, which is to bring about a strategic shift from India's reliance on fossil fuels and conventional sources of energy to a progressively greater use of renewable sources of energy. This would serve the country's quest for energy security as well as help meet the challenge of climate change.

India is now in the process of elaborating its National Solar Mission into an ambitious but actionable project. We are looking at what could be realistic targets for the year 2020, and for 2050, given both the advantages we possess

and the constraints we face. Different currently available technologies, such as solar photovoltaic and solar thermal, are being evaluated for their suitability in different applications. A regulatory and incentive framework is being evolved to provide a predictable and efficient policy framework that could, with a modest investment, trigger large-scale development of solar energy. The objective is to use any government support — whether in the form of capital subsidy or feed-in-tariff — as a temporary and declining charge on government, so that the industry becomes viable as quickly as possible. We are studying the experience of other countries which have initiated similar plans to promote solar energy and are exploring opportunities for mutually beneficial collaboration with several partner countries.

India wishes to become the leading solar nation of the world, in terms both of the scale of its application and of focussed research and development (R&D) work. Our objective is to promote technological innovations and improvements in existing technologies. This would bring costs down and increase efficiency. At the same time, we are trying to create a well-funded R&D network that could explore cutting-edge technologies with a view to making solar applications as user-friendly and convenient as possible. The focus will be on cost-effective, environmentally friendly storage technologies, which would enable solar power to be stored and used as and when required.

India has a very comprehensive science and technology network and a significant number of world class research institutions that could be mobilized for this. Nevertheless, the ambitious nature of the programme we envisage would also require a plan for building human capacity. This, too, is being prepared as part of the National Solar Mission.

India believes that the promotion of renewable energy — particularly solar energy — could play a significant, and perhaps even decisive, role in meeting the challenge of climate change. Its merit lies in the accompanying benefit that it also advances energy security. We need a truly collaborative effort, publicly funded, on a global scale, to accelerate the diffusion of existing solar technologies. We also need to explore technological innovations aimed at achieving more radical solutions, especially in solar energy storage.

The current economic and financial crisis has demonstrated the willingness of countries to inject billions of dollars of public funds to rescue their economies. A modest part of these public funds could also be mobilized to fund a global campaign to promote solar energy. This would create new industries, new jobs and encourage technological innovation. It could become part of the solution to the economic crisis, and not, as it currently appears, its casualty. 