

**Remarks at the opening of the
Tenth World Renewable Energy Congress and Exhibition
Glasgow, 19-25 July 2008**

K.R. Sreenivasan
*Abdus Salam Research Professor and Director
International Centre for theoretical Physics, Trieste, Italy*

At the Florence Congress organized by Professor Ali Sayigh two years ago, I had a similar opportunity to remark on the energy needs of the world and the sources available.

As a non-expert, my conclusions then were four-fold: first, we are not moving fast enough for paradigm shifts in energy consumption to occur worldwide by 2020, and that at least part of the reason is technical; concerted political will *and* technical skill will be needed to gain control of the situation even by 2050; without this concerted action, the progress being made in countries like Germany will not touch the rest of the world; second, no single solution can meet the energy crisis that has befallen us, and so we have to embrace several solutions all at once; third, a critical part of our strategy should be conservation, without which sensible solutions will be impossible; and, finally, in the quest for prosperity, the emerging economies of the world are unfortunately following the path of the industrialized countries without learning from the mistakes of the latter.

Most of these conclusions can be restated without the retrospect of the two years making any difference. The cost of oil has more than doubled since then, yet our society as a whole has not yet made commensurate adjustments. That nearly everyone agrees on the need for such adjustments only underlines the difficulties of changing the paradigm, and the pains of a drawn-out transition.

The slow rate of progress is frustrating and it is not always clear as to what role an institution like ICTP, organized under an agreement among UNESCO, IAEA and the Government of Italy, primarily to study and disseminate basic physical and mathematical sciences, can do. To guide us, ICTP and WREN (The World Renewable Energy Network) had convened in early part of 2007 a meeting of some 30 of the world's experts on renewable energy. At my request, the experts prepared the following statement, which I wish to share.

Some of those experts are present here. Unfortunately, I cannot name them for lack of time, and have to be content with thanking them anonymously for their work. I speak, in some sense, for them as well. They said as follows:

"The scientists and other specialists on renewable energy, meeting under the auspices of the International Centre for Theoretical Physics (ICTP) and the World Renewable Energy Network (WREN), wish to promote education, research and innovation in the provision and use of renewable energy technologies.

Both our organizations are well-established networks of specialists with particularly strong links to, and between, developing countries. We view with the greatest concern, the absence of effective policies and measures to promote and accelerate economic and social development, without causing further and faster deterioration in the environment around us. We share the concern that over 2.5 billion people still rely on traditional biomass, that over 1.6 billion people still exist without electricity, and that current development pattern continues the rapid growth of fossil fuel use, and its associated greenhouse emissions. We note that, despite the huge potential in harnessing energy from renewable sources (especially great for solar and marine systems, but substantial opportunities exist also for biomass, wind, geothermal and small hydro), new renewable energy resources still account for 2.5%

of world's primary energy use. Take modern biomass away from this figure, and renewable energy only accounts for half a per cent of use.

Our two organizations, their members and associates, can do little by ourselves to improve the quality, or raise the speed, of effective policy making, and decision taking. But we do believe that the nature of our two organizations, together with other collaborating institutions at international, regional and national levels can make an effective contribution, drawing on our acknowledged roles and experience in education, research and innovation to the following:

- raising the awareness at all levels in our societies, of the real nature of challenges that we face in social and economic development, environmental threats from the local to the global, the urgency with which these challenges and threats must be met, and the roles which renewable energy sources and technologies could, and should, play in meeting them
- providing education and information relevant to these challenges and threats, and the potential for renewable energy sources and technologies to resolve them
- drawing on the available experience and knowledge, to inform others of policy frameworks, measures, administrative institutions, technologies, partnerships and financial mechanisms that are most likely to promote and accelerate the successful use of renewable energy (while avoiding the presumption that "one size fits all")
- encourage the development of markets in renewable energy R & D, innovative financial mechanisms, and the exploitation of cost reduction opportunities
- promote private/public partnerships to accelerate the penetration and use of those renewable energy technologies that are best suited to local conditions, including both those with early reliable potential (such as wind and modern biomass) as well as the more distant, but huge potential, of concentrated solar and ocean thermal (with efficient long-distance transmission)
- promote better and more effective communication between institutions, businesses and individuals who are active in the promotion of renewable energy
- expand innovative and effective programs – conferences, seminars, lectures, research exchange – relating to renewable energy
- where appropriate and feasible, collaborate with other ongoing initiatives and institutions, in order to accelerate the effective use of renewable energy."

Since the time these statements were made, ICTP has gone forward with efforts in liaising with G8 countries and others, and it is possible that we will see some modest results. Perhaps there are signs for optimism on the political scene in recent years. In a broad sense, this Congress is itself a quest to fulfill the aspirations just expressed. I am pleased to be part of this Congress and hope that it produces concrete results. In that direction, I wish to close my remarks with a plea and an observation.

My plea is this. As with climate change to which renewable energy is intimately tied, the scientific conclusions of this Congress will have political overtones. Clearly, we should separate technical issues from political ones, and one should neither exaggerate nor understate the complexity of the technical issues involved. We should, however, not hesitate to draw up an independent action statement. I hope that this Congress will produce such an action statement. Without efforts in this direction, the urgency does not seem to reach the consciousness of decision makers. To confirm this feeling, I make the following observation: If you read the latest declaration coming from the G8 countries, issued less than two weeks ago, you will find that it goes on about climate change and the need to reduce greenhouse gases, but does not make the explicit commitment to replace fossil fuels by renewable energy. A rough statement to that effect appears later in the text, more as an afterthought. Climate change and the need to reduce greenhouse gases is the prime thread of the

declaration, but the action on renewable energy as the mitigating factor, to the extent that it is present at all, comes as a secondary note. Not surprisingly, if you Google renewable energy, you will find only a third as many entries as for climate change. I hope the emphasis moves to renewable energies as a primary issue in its own right, and that things will be looking up by the next Congress at Abu Dhabi.

Thank you for your attention.