



Renewable Energy Education and Awareness

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Editorial

The progress in the utilization of renewable energy is to a large extent limited by the awareness and availability of expertise in research, design, manufacture/fabrication installation and lastly maintenance. Since the modes of efficient and economic means of renewable energy utilization are site specific, no guidelines can in general be given on a national (or even regional) basis and hence reliable guidance/consultation is also a necessity.

It is important that students up to at least high school should be exposed to sources and utilization of renewable energy, particularly those which are relevant to the region. This may be conveniently done by integrating the concepts and practice of renewable energy with class work and assignments in different courses at different levels; field trips are also very helpful. It may be continued at the college level with increasing sophistication; the scientific, technical, economic, social and even international aspects of energy, including renewable energy should be part of curriculum in science, engineering and social sciences (even the legal aspects need to be introduced to law students). The teachers in various disciplines should develop an appreciation of renewable energy, particularly of the aspects, closely related to their disciplines. The participation of renewable energy experts in this exercise of curriculum development and implementation, possibly through professional associations/societies in renewable energy is highly desirable; the initiative may come from school organizations, universities or the professional societies and be encouraged by government grants or philanthropy.

The desirability of an undergraduate degree programme in renewable energy or even energy is arguable. The protagonists cite the need for renewable energy engineers/scientists to provide a holistic view in design/implementation of renewable energy systems at a specific site and choice of a suitable system amongst the various options. The antagonists argue the need for sound training in an

established discipline, so as to have an edge in the related renewable energy option. To my mind there is hardly any conflict in these views; both kinds of scientists/engineers are required. What is needed is a specialization in one or more specific modes of utilization for the renewable energy graduates and for the graduates trained in a specific discipline an appreciation of the many aspects of renewable energy is necessary.

For the running of master's/Ph.D. (Course work) programme a real or virtual school of renewable energy is absolutely necessary; the faculty for curricular work may be drawn from various disciplines in both the modes. As far as thesis work is concerned it may be undertaken with the expert thesis advisor (wherever he is) and supported by the school. The master's as well as the Ph.D. programme should have entry from many related disciplines.

In many countries there is an acute shortage of technicians/mechanics to run maintain and service renewable energy systems/devices. Hence diploma programs in renewable energy should be organized. Energy being multidisciplinary needs technicians with multi skills, appropriate for renewable energy.

Last but not the least is the sensitization of the public, business, legislators and executives to renewable energy issues. The fact that renewable energy and conventional energy should be compared in a level playing field has to be recognized by the society. Comparisons and other decisions should be made on the basis of financial, economic, energy, and energy analyses; this is evident to the renewable energy community, who have in most cases not who have not been able to enlighten the decision makers and general public.

May be it is high time that a periodical devoted to energy education and awareness should be started; the school system alone presents a good marketing opportunity. Other means of mass communication have also to be taken into account.