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Introduction -- Solar and Wind Energy

Jack L. Boone
Missouri University of Science and Technology

INTRODUCTION

Dr. Jack L. Boone

In recent years the scientific community has begun to explore the many alternatives of using solar energy in terms of solar energy conversion schemes. These, in general, may be classified according to use. We can talk about solar to low-grade thermo residential heating and cooling applications. We can talk about solar to high-grade heat for such applications as steam powered generation and certain high-temperature conversion processes. We can talk about solar to electrical for either residential or for large power production installations; and we can talk about wind to electrical and this would, of course, come in both large and small packages. We can talk about wind to mechanical in terms of storage schemes or for direct use in mechanical energy. Along with these basic conversion processes comes a whole myriad of problems of processing, storage and utilization of energy in its many forms, and perhaps the biggest problem associated with the utilization of solar and wind energy comes in an indecision which comes from results from having too many alternatives. The scientist today is confronted with the task of performing a preliminary cost and value analysis in an effort to justify any system that he introduces, and to me this seems to decribe the current status of many of the solar energy schemes that we are considering. It is hoped that the speakers here today can place some of the solar energy conversion schemes into proper perspective, not only in relation to other energy resources, but in relation to one another.