

University Research and Education Programs on Renewable Energy: The Sun Grant Initiative

Kevin D. Kephart

Americans are becoming increasingly aware of the needs for national energy security. Consequently, state and federal agencies are stepping up efforts to develop renewable energy systems that are sustainable and minimize negative environmental impacts. Many people recognize that agriculture has a role in addressing the nation's projected energy problems. Increased involvement of agriculture in production of non-food products raises many issues that will expand research and education from agronomists and environmental scientists. A joint study by the US Department of Energy and US Department of Agriculture (USDA) estimates availability of 1.3 billion tons of lignocellulosic feedstocks annually for conversion to energy. Additionally, these resources will be used to produce biobased products such as composites, lubricants, and construction materials. Public research and education has an important role to play as a massive re-design of our energy system develops. One effort in this regard has been underway since early 2001; the Sun Grant Initiative.

The Sun Grant Initiative was authorized by Congress in January 2004 to broaden the role of land grant universities by implementing new programs on renewable energy and biobased industries. The missions of the Sun Grant Initiative are to (1) enhance national energy security through development, distribution and implementation of biobased energy technologies, (2) promote diversification and environmental sustainability of America's agriculture through land-grant based research, extension, and education programs in renewable energy and biobased products, and (3) promote opportunities for biobased economic diversification in rural communities.

Regional Sun Grant centers include Oregon State University, South Dakota State University, Oklahoma State University, the University of Tennessee, and Cornell University. The regions will emphasize integrated research, and educational programs on ag-based renewable energy and biobased industries.

The Sun Grant Initiative has developed recently to a program with support and engagement with three federal agencies. Funding through USDA Cooperative State Research, Education, and Extension Service (CSREES) has been the foundation for establishing awareness during the initial years. Support from the US Department of Energy—Energy Efficiency and Renewable Energy (EERE) has resulted in research on feedstock production, conversion technologies, educational programs, and gathering information to support policy development. Lately, funding through the US Department of Transportation will launch Sun Grant research and education programs in each region.