



Hearing on Title IX Section 9006
US Department of Agriculture

December 3, 2002

Good Morning and thank you for the opportunity to share some observations regarding section 9006. I personally have waited along time to see some merging of my two great interests, Solar Energy and Agriculture. I used to service most of the USDA solar equipment in Beltsville MD and recall working with scientists to develop a solar powered mosquito trap.

SEREF's mission is to provide education to consumers and industry as to what the sustainable applications of solar energy are and how they can benefit all persons in developed and developing countries. We have worked on international markets in the last few years and are now re-evaluating domestic activities. As a former Agricultural Extension Agent I am very hopeful of the future success that Section (006 and (005 can play in the future for rural America and the youth in rural communities.

Job opportunities & small businesses

There are many applications for solar energy to assist rural agriculture and several business opportunities for rural areas to market and sell these technologies.

Unfortunately, due to very energy costs, low rates for electricity, propane, fuel oil and natural gas renewable energy has been avoided in many rural areas. Electric water heaters dominate most rural communities and rural Electric coops generally market these devices directly to their members.

I personally recall a time when every yellow pages in America had several listings under solar energy. These businesses were generally from Rural areas. Solar companies emerged from all over the nation and locally produced solar collector were the standard method of the industry

We believe that among the many useful applications of solar energy the thermal applications are in need of assistance to establish themselves in the marketplace. The applications of solar water heating for rural America make sense and can save our resources for other more pressing uses of energy. The combustion of fossil fuels to generate heat to spin a generator to transmit down a cable to produce heat for hot water

I have been serving as the Industry Liaison to International Energy Agency Task 29 applications of solar drying and am very pleased that this opportunity may assist the US agriculture industries to make further progress in becoming leaders in this application.

Very few crops are produced through modern agriculture that are not harvested and dried as quickly as possible. Fresh vegetables and some fruits may be flash frozen, sealed in inert gas, or freeze dried. Most US Agricultural Products including grains, nuts, fibers, tubers, and herbs, spices and teas are dried prior to final processing. Some of these crops will be dried from 40-50% moisture content down to 10-15% to prevent spoilage.

Generally these crops have been produced and shipped to processing centers, silos, coops and rural business where they are dried with heat and dry air by the combustion of large quantities of fossil fuels. In most cases, due primarily to cost, the fuel is natural gas and combustion is not very efficient, nor is the way in which the moist product is exposed to the drying medium. Drum drying for largely for grains and beans has quite a low efficiency at reducing moisture out of beans or grains. High ventilation rates are required and only a moderate temperature rise is needed to remove moisture if the product is moving and air ventilation rates are high.

The use of solar thermal energy can be readily applied to many agricultural crops in order to reduce fossil fuel combustion however these technologies are additional one time, up front expense to the processing plant. Furthermore the expense of adding solar thermal energy is required when drying /processing is needed and for the remainder of the year it is idle. Ideally several crops would be dried at a given location however that is not currently practical since each producer group seems to process and market their own crop.

Project Size vs. Project number and people impacted

The question of how best to implement a program to motivate rural businesses to test the opportunities in renewable energy is not a trivial question. We would hope that some distinction will be drawn between large projects and small sized projects. There could be some ratio of cost per unit of energy and total energy produced. But the fact remains that smaller projects tend to cost more but are well suited to many rural areas except for the fact that they have initial costs that are greater than conventional energy.

Solar Thermal needs a share

We think it is important to place in the criteria for selection those technologies that receive little other governmental support or subsidy and are practical and proven technologies. In that category solar thermal applications are severely neglected. We believe that solar projects should qualify for 20% of the total grants and or loans. However, we believe that 20 % of that figure should be dedicated to thermal or heating applications.

Loans vs. grants and a revolving loan fund

We would recommend that grants receive the majority (60%) in the first 1-2 years and then after the second year a greater emphasis be placed on loans (60%).

For those loans that are provided we would strongly urge the repayment to be placed in a fund to be loaned again. A revolving loan fund over the period of this law 6- 7 years could continue for many years and maintain a source of funding rather than cutting it off at the deadline.

Non Profit Organizations

I believe that aggregation of small projects by non- profit organizations, coops and groups of farmers and food processors must be considered or else the smaller projects will be too costly and difficult to implement. I believe projects that include activities described in section 9005 and funded with cost shared or others funding should receive some additional credits since this activity was authorized by Congress, but simply not appropriated

A proper combination of grants and loans can help once the technology is considered to be reliable and useful so some level of grants will be needed to prime the pump and promote the advantages. NGO's can assist in this process and can be authorized to distribute and seek grantees to uses these funds.

SEREF has had 25 years of Solar related experience in promoting the use of Solar technologies and would like to continue this role in farming communities across America. Thank you for this opportunity.

Sincerely,

Peter Lowenthal

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