

REMARKS OF SENATOR HUBERT H. HUMPHREY

UNIVERSITY OF MINNESOTA

SOLAR ENERGY MEETING

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I am delighted to be speaking here in Minnesota about solar energy. As many of you know, I long have been an active proponent of the rapid development of solar energy.

It's been a long road and for many years, a lonely one as well. Beginning in 1953, Senator Bible of Nevada and I were responsible for placing and then keeping solar energy research funding in the Federal budget. During the 1960's, in the Senate and then as Vice President, I continued to nurture solar application Research and Development -- R&D which resulted in the development of solar cells which still power NASA's space satellites.

I was especially gratified when Congress enacted my Solar Energy Research, Development and Demonstration Act three years ago.

This effort finally has begun to pay dividends -- in part due to the energy crisis and the resulting abrupt realization that fossil fuels are in limited supply. In fact, the switch of emphasis in Washington toward solar energy has been breathtaking.

In 1973, we spent \$5 million on solar energy. This year, we're spending \$290 million. And next year we'll see perhaps more than half-a-billion dollars devoted to solar R&D.

Three or four years ago, there was no discussion of the role solar energy could play in meeting our future energy needs. It was assumed that solar energy was still a gimmick, an expensive NASA technology which worked, but was unnecessary to meet our future energy requirements.

Now, of course, official Federal projections show solar energy providing up to seven percent of our total energy supply in the year 2000, and 20 percent of our power needs in the year 2025. In fact, every time we turn around, the role expected to be played by solar energy increases.

It is even more amazing to be speaking of solar energy here in Minnesota. In Washington, when people think of solar energy, they think of sunny Arizona, New Mexico or California.

Yet, it is states like Minnesota -- states in the the north with high heating loads and good sunshine -- which will be using more solar energy sooner than states in the southwest.

The reason is simple: Solar energy is especially effective now for space and water heating. And nothern states receive almost as much sun as states in southern latitudes, yet they have much higher heating demands.

A recent Congressional Joint Economic Committee study by the University of New Mexico said that solar space heating would become economical -- across the board -- in Minnesota by 1980 -- long before it generally would pay to use it in the south or southwest.

The establishment here in Minnesota of a regional facility for the Solar Energy Research Institute also would indicate the great potential for solar energy here.

Where does solar energy stand today?

It still is relatively expensive, due in large part to the cottage-industry nature of its manufacturing processes. Yet some solar applications are economical and should be adopted immediately. For example, solar water heaters -- widely used until World War II in the South -- are economical anywhere in the U.S.

Many solar conversion systems for agricultural purposes, such as crop drying and food processing, now are competitive as well, and can replace dwindling natural gas supplies.

But perhaps the most intriguing solar energy prospect is solar cells -- used to produce electricity directly from sunlight.

We have used such cells for 20 years in our NASA space program. In fact, solar cells provide almost all the power used by our satellites.

They are expensive now, just like transistors used to be.

They are expensive because each cell is handled over 40 times in production. The secret to reducing their cost is mass production -- the use of machines to produce hundreds of cells for the same money it now costs to make a dozen by hand.

Studies have shown that mass production techniques can reduce solar cell costs to 25¢ or 30¢ per peak watt -- less than one-quarter the current cost of electricity produced by a nuclear powerplant. So why don't we go all out and use solar cells instead of coal or nuclear powerplants?

Because producers cannot afford to automate production without a large-scale market. But a large scale market won't develop without sizable cost reductions.

How can we solve this "Catch-22" problem?

The answer is simple: Let the Federal Government buy and use a sizable number of solar cells -- say 150 megawatts over five years.

Such a program is called for in the Solar Energy Government Buildings Act, which I have introduced in this Congress. Twenty-nine Senators have joined in sponsoring it.

This bill would launch a program that would create a sufficiently large market to bring costs down. Within 10 years, electricity could be produced more cheaply from the sun than from coal or uranium burned at a powerplant. And it would be cheaper, even if a large storage capability is included.

Finally, this program to require Government purchases of solar cells actually would save the Government money. The savings would be enormous, according to the Federal Energy Agency, with \$3 in reduced fuel bills being saved for every one dollar invested in solar cells.

There are many other applications of new solar technologies like this one that are just being reviewed now. And, despite the impatience I feel at times toward the slow pace of solar energy development projected by President Carter, there is no doubt that he shares my enthusiasm for it.

The President has proposed, for example, that tax incentives be created for the use of solar energy devices or equipment in homes and plants. And I have introduced other legislation to implement that proposal.

The President also has called for a \$100 million program to put solar energy systems in Federal buildings. He has called upon states to exempt solar installations from property taxes. He wants 2.5 million homes to be equipped with solar energy over the next decade.

And, looking ahead, the President has called for legislation to guarantee our sun rights -- our access to the sun -- and to prevent utilities from charging high rates to customers using solar energy. I hope Congress and the states act quickly on these initiatives.

These are important steps. But they are long overdue steps, as well. Because we have no other energy source which compares with the sun in terms of environmental impact or supply, it makes sense to utilize solar energy. And, as energy prices are pushed up by OPEC and technological improvements reduce the cost of solar power, solar energy will become even more economically attractive than it is today.

It is our job in Washington to make sure that solar energy is developed as rapidly as possible. That means we prod the Administration occasionally. But we do this because you and I know that solar energy offers our best solution to the energy crisis.

And make no mistake, we have no choice but to find a solution, and find it quickly!

We cannot continue to rely on foreign nations for 45 or 50 percent of our oil needs. It restricts our foreign policy in a dangerous fashion. And it forces the President and Congress to devote hour upon hour to energy issues while urgent issues like the SALT talks or world hunger receive insufficient attention.

In the final analysis, however, it is those of you here today who will determine the speed at which solar energy is developed.

If citizens respond to the call for less reliance on fossil fuels and greater use of solar energy, then our solar energy programs will be successful. Costs will fall sharply and we will move toward energy self sufficiency -- even energy abundance.

The choice is yours. I hope you will join me in making the correct choice -- for the rapid utilization of solar energy before all our oil and natural gas reserves are gone.

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