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"The Energy Crisis: Management or Technology?"
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What qualifies me to tell you more than you ever wanted to know about energy? Maybe my boldness comes from a few years on Congressional energy committees, or from the fact that I got to shake James Schlesinger's hand a couple of weeks ago? No, tonight I'm happy to say: I have seen the energy future, and it's name is hope. Bob Hope.

I can see clearly now that I've watched the TV ad for an oil company with energy expert Bob Hope. He's on top of an oil rig. He gives a pitch about how hard they're working to produce new oil. He's a wind-filled prophet for technological progress, new discoveries and energy abundance. It sounds as though you can trust your car to this star--and trust our Nation's energy future.

Actually, though, there's just one small problem with producing our way out of the oil shortage. The unfunny thing about oil is...they don't make it any more. When it's gone, it's gone forever. A more realistic phrase for what's called "oil production" would be "oil withdrawal." Our children won't be able to go over to Hope's house to borrow some of his energy. Here's hoping against Hope...that we will handle our fossil fuels conservatively.

Some of us remember the old Boston Braves. They had a pitching rotation known as "Spahn & Sain and Pray for Rain." Our present energy plan is all too reminiscent of that Brave strategy. You might call it: "Oil & Fission and Hope for Vision." And in the looming energy crisis, the old warning is literally true: without vision, the people perish.

So tonight I'm talking about energy--a complicated crisis in energy. Why me? It is true that I'm on the Senate Energy Committee, and I've studied energy issues in depth. But the basic errors our Nation has made and continues to make on energy can be understood by concerned non-experts. It isn't some abstract theory that energizes me to raise my voice tonight. It's the heart-felt fear that my young children and others will suffer needlessly for today's blunders.

The topic of my choice tonight is "The Energy Crisis: Management or Technology?" I contend that the energy crisis represents a fundamental failure of management. I am confident in the innovative spirit and ability of our scientists

and engineers to respond. I am much less optimistic that we will choose wisely among the mix of technological options. I doubt the ability of our public officials to maximize existing technologies and human capabilities to deal with the energy crisis.

Tonight I will begin with some thoughts on vision and innovation. Then I want to discuss and justify a major federal role in securing America's energy future. After that, I will talk about better managing the two most fruitful fields in our search for energy sufficiency. One is solar energy: the other, conservation. And if I haven't driven all of you out to your car pools by then, I will have some concluding thoughts on communications, consistency and credibility in the energy crisis.

Vision and Innovation

Now I had a little fun at the expense of Bob Hope, but don't think I'm anti-technology. But I am down on technology's uncritical boosters. As I said, fossil fuels are going the way of the dinosaurs that are mixed into them. We need to squeeze the best use out of the oil and gas that is left in order to make the best transition to alternative power.

When Americans have a vision to work toward, we can make great things happen. Just 75 years ago two bicycle mechanics proved that a heavy thing with wings could fly. It's been a decade now since Americans first walked on the moon. We had a President who challenged and inspired us to get there within the 1960's, and we did.

America's past shows a visionary willingness to invest in the future. A hundred years before the Wright Brothers, a daring President and the Congress invested $15 million in real estate. It was the Louisiana Purchase, and it ended up including a lot of states that just happen to have, among other things, a lot of oil and gas. For that matter, long after the rush for Alaskan gold was over, it turned out to have rich supplies of "black gold." But way back when, cynics called Alaska "Seward's Folly."

It's a cliche that there are no more frontiers, and in a sense it is true. But in the case of energy, our very closeness to, and dependence on other nations in this frontier-less age endangers our Nation. We're nowhere near out of the woods on energy issues. Again, we must be pioneers to survive.

But we can't afford to keep our wastful ways and expect a technological "fix" in the nick of time. The super-salesmen of technology have an arrogance about them that Three Mile Island exposed. Three Mile Island was something that couldn't happen and did. It is causing a total reevaluation of what nuclear experts have assured us. It has watered down confi-

dence in "the experts." It should motivate many Americans to get involved in helping to make the energy choices that confront us all, and that's good.

The nuclear near-disaster in Pennsylvania was a special case of vision, and lack of vision. At one point in the Nuclear Regulatory Commission's meetings, Chairman Joseph Hendrie complained, "We are operating almost completely in the blind." Hendrie was speaking of facts. For Pennsylvanians, what is unknown about radiation was part of the fear. It's an invisible, unknown danger. We know that what we don't know can hurt us. So, if there's ever a Hall of Fame for solar energy and other safer, smaller-scale, renewable energy sources, it ought to be near Harrisburg.

We may someday look back thankfully at Three Mile Island, and the way it obliterated a kind of blindness. We may even appreciate the way the Shah of Iran's winter vacation stretched into an endless summer. That fiasco was a case of indecent exposure: it exposed our indefensible reliance on a tightly stretched network of overseas supply that can't withstand surprises.

I'm going to talk about the fundamental responsibility of the federal government in the management of an emerging energy crisis. But let me be clear that I have no Big Business scapegoats. If a modern-day disciple of St. Ignatius of Loyola himself were running Exxon, and other noble Jesuits like Jerry Brown were running the other big oil companies, there still would be no neat solution. If the Arab oil embargo in 1973 and 1974 had ended our daydream of cheap energy, it would have done us a service. They did their part; we have not done ours.

Just as the oil giants are not the basic problem, they cannot provide a simple solution. So I get tired of hearing cheap words about "unleashing" the unbounded greatness of the private enterprise system to conquer the energy crisis. It's a bit like the old call to "unleash" the Nationalist forces on Formosa against the Chinese mainland. This time it's "the moral equivalent of war." but it's still going to need a lot of help from Washington.

If we depended solely on the private sector for technological breakthroughs, there would be an underallocation of resources to innovation. That's because the social rate of return is greater than the private rate of return. Washington also must referee the imperfect market system in energy. The energy market hides costs like environmental destruction, and delayed incidence of disease. And I must say, in passing, that the popular front against environmental standards as "inflationary" is a kind of consumer fraud. Weakened, cheapened anti-pollution standards are like the fast-fix production of

fossil fuels. They are self-deluding systems of deferred payment.

Solar

The federal government, then, intervenes with funding and regulations to allow for these "external" economies and costs. Yet in rightfully assuming its management role, Washington has also created barriers to some energy technologies, and has made them look less commercial than they are right now. Solar energy is a good example.

Every tax dollar spent to subsidize non-renewable, dirty energy sources like light water reactors, breeder reactors and coal is, in effect, a dollar working against solar development. The tax code, research budget, pricing practices and loan programs are crammed with subsidies, both apparent and hidden. The intangible drilling allowance alone has cost the Federal Treasury $20 billion to date. Federal subsidies to favored "conventional" fuels, according to one estimate, exceed $200 billion.

At a recent White House meeting, some of my Congressional colleagues and I urged President Carter to take a basic, businesslike step. We recommended a comprehensive accounting of Federal subsidization of conventional fuels--including nuclear reactors. This is absolutely necessary to determine the true relative cost of solar energy, which has been overstated drastically.

We are anxiously waiting for release of a yearlong Domestic Policy Review on Solar Energy. With it, the President could correct the widespread, wrong-headed notion of solar energy as a spiffy plaything of artsy-craftsy, affluent folks. Solar heating, for example, increased sales by a factor f 10 between 1975 and 1977, when sales reached the quarter billion dollar mark. Congressional delay in watering down and finally passing the National Energy Act was a key factor in leveling solar heating sales in 1978. President Carter knows that the Congress is ready to make solar energy a much bigger budget priority.

I endorse the little Solar Lobby's big goal--25% of America's energy needs supplied by solar power by the year 2000. (This figure includes contributions by other renewables like small-scale hydroelectricity, wind energy and biomass processes as simple as burning wood.) We just can't afford not to make a national commitment to the only energy forms that can be secure and inexhaustible.

The Administration should produce a 5-year plan for solar funding at greatly increased levels. This should protect a logical program of research, development and especially commercialization efforts from foolish tendencies toward false economies. The Department of Energy and the Office of Management and Budget at all levels have pencil pushers who need a strong prod from their leader on solar essentials.

A major program of federal purchases of solar systems will help create economies of mass production and standardization. A Solar Development Bank is needed to help finance individual purchases of these technologies, which suffer because most of the cost is at the front end.

And in case you are still wondering, the only way I can accept decontrol of oil as announced by the President is with a tough windfall profits tax. The proceeds would go to aid poor people's energy needs, and spur the development and commercialization of renewable energy systems.

Conservation

Much of the potential of conservation to ease energy shortages involves non-technological savings in the form of changed usage patterns. The potential for energy savings that are not hatched in a laboratory has been consistently underestimated. It has been mis-managed.

Mobilizing the brainpower and resolve not to waste energy involves a fundamental problem. It has no hard constituency. The public in general benefits from energy conservation. As a former energy bureaucrat put it: "The oil companies and utilities are busy talking up how much they need to produce. But no one's out there wholesaling conservation by the ton and barrel."

One of the ways we undervalue conservation is by failing to look at it as a form of investment that can compete with production as a way to change our Nation's energy balance. Conservation can foster economic growth and jobs, but we don't think of it that way. Everyone speaks highly of conservation, but it doesn't have hard-nosed boosters. And the fault is ours.

Yet it's an especial fault of leaders responsible for managing our resources. It took an Ayatolla to make President Carter remind us to obey the speed limit. While he was at it, the President recycled a Jerry Ford idea from the era of WIN buttons. It was the perfectly reasonable request that, if possible, we spend one day a week riding to and from work by public transportation. Of course, it's easier to wait until crises have exploded in our faces before trying to motivate people, but that's a little too much like just following people."

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Some of you may have read the chapter on leadership in that swell bedside book, Essentials of Management, by Koontz and O'Donnell. It was right after fun sections on motivation and communication. The authors defined leadership as "influence, the art or process of influencing people so that they will strive willingly toward the achievement of group goals." That's a fair statement of leadership, and a fair idea of a missing ingredient in the national effort for conservation.

The distinguished editorial cartoonist, Herblock, recently lampooned the Department of Energy for chauffeured limos and energy waste. The next day the order came down from above that there must be a department-wide cut in energy consumption. Obviously, Herblock let us down by not directing the conservation effort sooner.

Time and again it has been demonstrated that energy consumption is not directly tied to industrial productivity. European nations use their limited energy resources far more efficiently than we do. And yet a recent study concluded that 5 of the 8 most energy-intensive industries actually increased their energy use per unit of output since the embargo! This is a failure of leadership, and even citizenship.

Failures of leadership, of consistency, of communication have a cumulative effect. In the State of the Union address, for example, there was nothing about the energy crisis. And just as things going well have their own momentum, it is also true that Nothing fails like failure. I insist with all my heart that energy represents a crisis for our country, and yet how many of us can say for sure that we consumed less energy this week than in the same week a year ago. It's a crisis in which we share responsibility and consequences.

I hope we will manage better in the future than we have in the past.