INTERVIEWS

The Executive: William E. Simon

William E. Simon, deputy secretary of the Treasury and head of the Federal Energy Office has worked in one of the most demanding jobs in the federal government since last fall when he became "energy czar" after the Arab oil embargo turned a fuel problem into an energy crisis. Simon's assignment was to fashion emergency fuel allocation and conservation programs that would get the country through the winter and to begin to develop a long-term policy that would ensure American energy self-sufficiency to meet new world conditions. It is too early for a verdict on his overall performance, but Simon seems to have received a better press and made fewer enemies than might have been predicted. The consensus is that his strong points are drive and decisiveness, a weaker point, organization.

Simon, 47, came to Washington as number-two man in the Treasury from a successful career with Salomon Bros., a Wall Street bond firm, bringing a reputation as a prodigious worker. He was recruited into the second-term Nixon Administration by Treasury Secretary George P. Shultz. Following is the transcript of a 21 March interview with Science.

Q: You've been energy czar for 4 months. Most of your visible activity has been devoted to fighting brush fires. Do you think that it's possible for an administrator to develop an intermediate-term program—the 1980 program—under these circumstances?

SIMON: Absolutely. I think if you'd been in the midst of the brush fires, as you call them, you'd have thought some of them were forest fires. They really obscured a great many of the areas we've been very involved in. Now while my visible time, a good portion of it, has been spent in testimony and organizing an infant agency at a time of crisis, with the embargo and the gasoline lines and policy meetings, and etc., we have had a staff that has proceeded on our two all-important projects in Project Independence. First, in the new energy ethic, conservation. Second, bringing on additional supplies to bring the game plan forward. We commenced about a month ago the integration of the Federal Energy Office into the economic mechanism of government, which, if you know government, is an extremely important step. Economic policy has traditionally been set by the Secretary of the Treasury, the head of OMB, and the head of the Council of Economic Advisers, Herb Stein. That was the troika, and I sat on the troika as Deputy Secretary of the Treasury. I sat in on the meetings; the Secretary was chairman of that. Now we have started another group to deal with energy. We have added FEO, the Council of Economic Policy, and the chairman of the Cost of Living Council. Now this is the group that is going forward to ascertain the real costs of Project Independence and the game plan for the energy effort.

Q: That leads into the second part of this question. Before we enjoy the developments of the 1980's, we must live through this decade. Has your experience in the past 4 months in the pressure cooker given you any sharpened perception of where the priorities really are and what is possible and what is likely in Project Independence?

SIMON: Well you see when you talk about the past 4 months, I've been involved in energy in government for 16 or 17 months. I was chairman of the oil policy committee before I assumed the "czarship." I did have some knowledge of ongoing work in this area before the 4-month crazy period commenced. And sure it's giving me firmer opinions, although we don't have the firm economic costs I spoke of a minute ago. Number one, it is quite apparent that the first part of Project Independence, the conservation ethic, the reduction of demand, is eminently attainable. We most certainly have a great deal of waste in our energy utilization in this country. Two, we know we have an existing state of the art with measurable costs of drilling the outer continental shelf, of drilling the North Slope, [of building] the Trans-Alaska Pipeline, the regeneration of the coal industry. We have pretty firm numbers on dollar and cent costs per equivalent barrel of oil—understanding at the same time that it's not only the economics of the coal issue, it's also labor, environment, strip-mining legislation—many problems to be dealt with—and this of course is what we're dealing with. We also have quite firm costs as far as nuclear energy is concerned. One of the major problems in the nuclear area sits right here in Washington and it's the government. It takes Japan 4 to 4½ years to build a nuclear plant, it takes us 10 to 11. Why? Primarily because of the United States government—5 to 7 years to get it through a regulatory agency, and then it's blocked on siting and environment. Well, we've got a siting bill on the Hill, 1 of the 17 pieces of legislation that's languishing there now, which will help correct this. We're streamlining the regulatory system. [I've been] addressing myself to the existing state of the art and we begin to move a little bit away from firm costs when we get into coal gasification. Near term numbers, let's say, $1.50 per million Btu's in the first generation of technology and experience and perhaps ultimately less, depending on the price of coal . . . who knew what the price of synthetic rubber would be in the third generation of technology? But these costs must be measured as to the long-term potential price of a barrel of oil, and this is where it really gets a little bit difficult. Oil shale. You've got estimates of $1.18 [a barrel] from Occidental to $8 or $9 a barrel. If [Occidental] is wrong times 4, it's still economic. The point is that we have the technology to do this in situ, whether it's Teller's method or Hammer's method. The only way we are going to know is to try it, try it on a pilot basis. This is going to require government pump money, and we're looking at that right now. And then, of course, we have the solar, the fusion, the more sophisticated forms and that will of course depend on Alvin [Weinberg]* doing his fine work. But this work has been ongoing. As I say, the crisis atmosphere has obscured this work. It will surface now because it will be our most important postembargo effort, the most visible, although not very sexy.

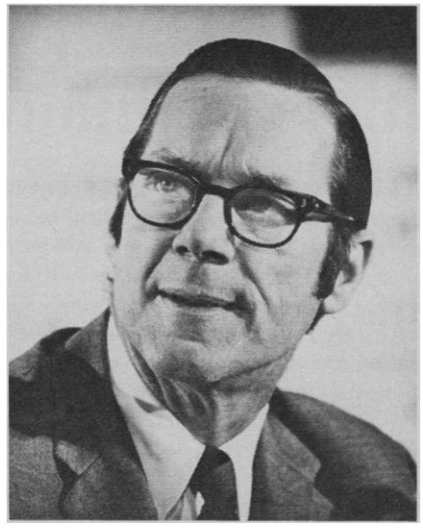
Q: Let us ask a near-term question. . . .

SIMON: I have no idea whether I'm going to the Treasury. That's what they usually ask.

*Alvin M. Weinberg, long-time director of the Oak Ridge National Laboratory, is now serving as director of research and development of the Federal Energy Office. He was present and participated in this interview.

Q: Most of the nation's energy consumption occurs in industry and in public utilities, not in the internal combustion engine of the automobile. We note that your office has released figures concerning the conversion of oil-fired power plants to coal. What other kinds of activities, perhaps less visible, has your office engaged in?

SIMON: It is very difficult for government to issue detailed regulations, perhaps even impossible, but most certainly inadvisable for us, other than in something like lighting standards, which we issued on a voluntary basis because we had no legislative ability to mandate it. But it's too bad because we could have used it. Let's face it, buildings aren't going to change their lighting, because it's expensive.



William E. Simon

Q: What have you done quietly to. . . ?

SIMON: It's not quietly, we've done it publicly. Government cannot mandate specifics for American industry. It's too diversified. Everybody utilizes energy in such a different way, whether it's a fleet of trucks or an office building, or a plant loft—you name it. We asked industry. Secretary Dent and I sent out 45,000 letters to industry all over the country asking them to conduct individual energy audits for their companies. We have had about 15,000 responses from them. I believe GE was the first one back. They were able to cut back immediately on visible waste 10 percent, and 15 to 30 percent has been quite common as far as the replies we've received—in all sorts of ways, just across the board.

Q: There are reports of shortages of material, equipment, and technically trained personnel, manpower needed to push ahead in expanding domestic energy production, in energy research and development. Do you foresee any federal priority system for the energy industry, on materials and so forth? There is said to be a shortage of engineers. Do you think there is a need for a federal manpower training and research program in the energy field comparable in any way to that which was mounted to educate scientists and engineers after Sputnik? Is it an analogous situation?

SIMON: I don't think so. To the best of my knowledge there has been no discussion of emergency training of engineers. We have had many meetings on shortages of materials. The two critical commodities as far as drilling is concerned have been tubular steel and drilling rigs. These have been in extremely short supply. What we need most of all is a well-functioning market. Let's face it, industry in this country responds to the consumer's needs. When they have the orders, they will produce. Those industries that have capacity problems will expand and, of course, that gets into a secondary problem of labor and a tertiary problem of materiel necessary for them to expand. You can ask me how in the world we can build 60 new refineries in this country in the next decade with all of these problems. And that is what John Dunlop [head of the Cost of Living Council] and myself have been working on very diligently, to make sure that these promises of the future can indeed be fulfilled by the capacity of American industry. A more important thing that underlines this whole area is that, with price controls of any sort, industry is not going to spend hundreds of millions of dollars, hundreds of billions that are going to be required if they are not assured of a reasonable return on their investment.

Q: This may be the time to ask about the shape of an energy policy that must deal with thousands of industry decisions on investment, on employment, that have to take into account future prices for the products, for energy costs, and so forth. You're embarking on a period when the energy project, Project Independence, and its successors can't be thought of in terms of the space program and the Manhattan project, where you had a defined goal, where you let federal contracts and so forth. Now you're dealing with the economy at large. Have you begun to come to grips with the whole matter of guaranteed prices . . . ?

SIMON: What is the role in government? That's what you're asking. Is it one to remove the obstacles from industry? Well, I happen to think it is, to be helpful, and all of our legislation that we have on the Hill today removes obstacles from industry doing what they could do to bring on the ability for self-sufficiency, allowing the market and normal incentives to take care of this and private industry will respond to this.

Q: And do you think that in the budget this principle is followed at this stage with the $800 million in supplementary funds?

SIMON: You're talking about research and development. There are certain areas that we cannot expect private industry to participate in if the economics as we discussed before in oil shale are as questionable as they obviously are. It is going to require government seed money, government-industry partnership.

Q: Synthetic fuels are a good example.

SIMON: Exactly. We have proposals from private industry on joint ventures on coal gasification and oil shale. I think that we should carefully draw up programs and indeed pursue them. I would expect that when these plans are drawn that I'd go before Congress and ask for the money to do this.

Q: But you obviously don't see an energy protectionism growing up—where government would insulate, encourage, give inducements and so forth and in a sense financially manage the energy . . . .

SIMON: If you were asking an absolute question, I'd say, no. But you're not. What you could be saying is, What could happen 10 years from now or 20 years from now after people have invested these hundreds of billions of dollars in $10 a barrel oil and the Arabs decided to sell it at 4 or 3 or whatever it was? How in the world do you protect this investment? There are several ways it can be done. Two major ways. One, it can be done through a competitive, guaranteed buy-back on the part of government for national security storage of the synthetic crude. Two, it could be done through our license fee or a quota system. I happen to favor the license fee system, which would make sure that imports from abroad would not destroy this. But I think what's critical as far as the economic considerations is to be sure that we don't encourage what may be uneconomic bringing on of alternate sources.

WEINBERG: I'd like to inject a point about research and

development there. Project Independence, which was launched partly to ensure us against politically instigated economic blackmail, is going to incur certain costs—economic, environmental, social. A prime aim of our R&D is to reduce these costs.

Q: There is a bugaboo, at least in the minds of a lot of people. What about the fears that the energy shortage will be solved at the expense of the environment and the health of the public? You must be aware of the report that the Administration is considering asking [that] the National Environmental Policy Act [NEPA] be suspended for projects relating to energy, particularly coal. How do you see a balance being struck?

SIMON: Well it isn't a matter of suspension. It is a matter of postponement for a reasonable period of time until we can get Alvin's research and development program working so we can bring on the coal supplies that are needed. We're not talking about doing away with the Clean Air Act or NEPA. We're talking about the ultimate compatibility of energy in our environment, which is infinitely attainable. I think that there is some strong feeling down here that we attempted to implement the standards of our new environmental laws too quickly. As a result, it should be postponed for a reasonable period of time to allow industry to adjust to it in a little more gradual fashion.

Q: It's widely acknowledged that an era of relatively inexpensive fuel and food is ending in this country and in the world. The effects on the less-developed countries are likely to be very serious. In this country, if the market mechanism is simply left to transmit the impact of the higher costs, the living standards of a substantial portion of the population will be seriously eroded. Do you see the government coming to terms with this problem?

SIMON: [Your question implies] that allowing the market to work means higher prices. It doesn't. Now you go back to the experience a year ago, to the controls on meat. Controls were lifted, the prices went down. When the market is allowed to function, and as we bring on the additional supplies of energy, the price of energy is going to come down, too. The only way we are going to see reasonable costs in this country for our consumers, is when we have the ability for self-sufficiency or close to it. World demand is responding right now; it's reduced the price explosion in December resulting from the actions of OPEC [Organization of Petroleum Exporting Countries] nations. I would suspect we've seen highs as far as world prices for petroleum are concerned. They can for a time keep [prices] high by cutting production, but that presents other problems which I guess we don't have to go into right now. We have been the greatest agricultural producer, with the greatest technology in this area, of any nation in the world. For years we have had government supports and set-asides and other programs that were very harmful to this mechanism, and we are planning this year—obviously, it depends a great deal on the good Lord and the weather—that we're going to have the greatest harvest in history. At that point, as these additional supplies are brought on, the prices come down.

Q: Is my basic assumption erroneous? Is the period when food and fuel was relatively inexpensive not necessarily over? Is it possible that food and fuel costs in the budget of the average factory worker may return to '60's levels?

SIMON: I wouldn't know. I don't have a crystal ball. I would doubt sincerely that petroleum will go back to those levels again. But food; you will see food go up and down, depending on weather and worldwide demand. Last year was an extraordinary year, a horrible weather year. The horrible weather in Russia which precipitated the massive [Russian] purchases of wheat which created a shortage, which of course is still much criticized. For our agricultural products, you know, are what makes our dollars so strong. We can argue this round and flat. But it seems to be common sense that this is what is going to offset our higher fuel costs. This is the function in a free world economy where there is free trade, which at present we don't have, but we're working hard to negotiate.

Q: Suppose there were to be a synthetic fuel program, at what scale of magnitude would you initiate it? How many examples?

SIMON: Basically that would depend on which synthetic we're talking about and what indeed would prove the economics in the oil shale area; I would think we'd have to produce about 50,000 barrels a day.

WEINBERG: Of course, there are other possibilities—to move aggressively on several 50,000-barrel-a-day shale plants or equivalent high-Btu gas plants.

SIMON: But this is a definite possibility. I would not put that to bed. And I would say that we could use both systems, that for a specific project three or four oil shale plants, and at the same time be using a fee system to protect the needed investment in this country. *If* it was needed, and that is an "if."

Q: In spite of substantially higher prices, oil production in the United States is actually running less than a year ago. When do you think we will see substantial increases in production?

SIMON: Well, production is maybe 2 percent lower than a year ago. Production peaked in 1970 and sort of leveled off and started a very slow decline. It takes about 3 to 4 years to finally get a new discovery on line. Secondary and tertiary recovery does not take that long; within a year we could have that, stripper wells, which, of course, we're bringing on stream with the new economic conditions. The outer continental shelf is being held up right now with some environmental problems which we hope will get taken care of within a month. And if leasing commences, the major discoveries which one might look at would be 3 to 5 years away before they get to gasoline stations. And the same goes for the Trans-Alaska Pipeline, which at the earliest will be completed at the end of '77, early '78, bringing in at first 500,000 barrels a day and then graduating to 2 million barrels a day. Perhaps it can be looped, they say, to bring in 2½ million barrels a day. This of course would precipitate greater exploration on the North Slope, and that again would require another pipeline. So you're talking 3 to 5 years as far as significant new gas and oil discoveries to reach the marketplace.

WEINBERG: I feel a little more optimistic. One of the actions being proposed is to go into some existing oil fields and pump harder. Quite a few of the oil fields are now running at less than the maximum efficient rate.

SIMON: Well, I'll tell you their maximum efficiency rate is a much-debated question in some of those oil fields. They had a very bad experience in Louisiana in 1967 [at the time of the] Middle East war and the last cutoff, and they increased production in a lot of these fields and they damaged the wells irreparably. So the short-term expedient turned out to be very counterproductive for long term. I wouldn't be optimistic about getting that much more from MER [maximum efficient rate]. What you could get, you know,

may be another half-million barrels a day, even a million barrels a day—Boy, is that optimistic—in a shorter period of time through secondary, tertiary recovery, and maybe a little increase in the MER. But, in talking to the state regulatory agencies whom I've talked to, that's a sticky issue, isn't it?

WEINBERG: Well we've had a meeting with a bunch of fellows who were actually in the oil fields last week, and I must say they were rather more optimistic than I expected them to be.

SIMON: I'd be in favor of it.

Q: Now as I see it, there are certain oil products that are easier to substitute for than others. There's been quite a dramatic decrease in the consumption of residual oil in comparison to last year. On the other hand, the recent experience indicates that it's not so easy to cut down on the consumption of gasoline.

SIMON: It's easier than some people make it out to be.

WEINBERG: If you just don't have it, it's easy.

Q: Well yes, but that produces some pretty profound social tensions. Is there any program designed to substantially increase the yield of gasoline from crude oil?

SIMON: Well, the crackers, as far as the refineries are concerned, are designed really to maximum production of gasoline in this country, and they produce at about [the] 48 percent level. I would approach it from the other side—that what indeed is going to happen is that the consumers are indeed going to buy more economical automobiles and Detroit is going to respond by making more economic automobiles. And that goes right up to the Cadillac. You're still going to have a Cadillac, but I'll suggest that 2 years or 3 years from now your Cadillac is going to look like a Mercedes. And it's going to be as economic as a Mercedes—16, 18, 20 miles to a gallon. It'll be a better automobile than Cadillac makes today because it will be smaller. It'll be just as expensive. And you're going to see that in every line of the automobile.

Q: Well I buy that, but there's a time constant, that is, the average inventory of 100 million automobiles; we can replace that inventory at a rate of say 11 million a year. Many years go by before we really level down.

SIMON: Yes, but your real gas-burners, of the 100 million, I would suggest are all concentrated in just a couple of years. And people are still going to want those automobiles. They should have the freedom of choice if they wish to pay for it. I think that building more refineries, that is where our added gasoline production would come from—additional refinery capacity. Preembargo, we had upwards of 4½ million barrels a day announced as new and expanded refinery capacity in this country. And this is the answer to the problem, and that would take care of it. Of course it will take a long time to build those refineries. It takes 3 to 5 years to build one. That's once you get the siting and environment problems out of the way and of course get a stability of supply, an assurance of feedstock, the crude supply. And postembargo, I would assume that now this is going to start up again. That's the combination you need. I think if you'll look back in history you'll see that refinery capacity goes in spurts. We have excess refinery capacity, then it falls behind, then there's a spurt and it shoots ahead. We will close the gap, even though it's going to take longer to catch up this time because of the demand explosion of the last few years. Today we have refinery capacity of 14 million barrels a day. Last year we consumed 18, and it will be 19 to 19½ this year, so that's quite a gap. But that's the way you solve the problem.

Q: Many of the functions of industry, using energy, simply use heat and it's heat that could be supplied by coal, could even be supplied by nuclear energy.

SIMON: Some of the steel mills make ingots which are flaming hot, and they simply wheel them through the plants and that's what heats the plants physically. And there's part of this energy audit that I told you about. Saves a tremendous amount.

Q: I was going to make the remark that people at the American Petroleum Institute told me that 10 percent of the energy of crude oil is used up on providing heat in the refining process. Possibly a little use of coal . . . .

SIMON: Of course this is part of our Clean Air Act. We are going to attempt to use coal for a period. We'll need strip-mining legislation. We'll need additional coal. We can promise all the coal, but it doesn't get it mined. People aren't going to spend hundreds of millions of dollars again for a 6-months or 1-year variance.

Q: This is a looking-for-the-Achilles-heel kind of question. Is it sound policy to count on developing major new sources of energy in a relatively short period, when progress, for instance in the nuclear field, has been chronically delayed by technical and environmental problems? How much in Project Independence depends on a wing and a prayer, so to speak? How much of the new stuff is sure, how much is hypothetical?

SIMON: Of course I addressed that right at the outset when I talked about the unknowns. As far as the existing state of the arts is concerned, the costs are well known, technologies are well known, always being improved as far as secondary and tertiary recovery is concerned. And there can be significant improvement. Now, there again, the economics are in place. Coal, exploration of oil and gas, nuclear, they are known.

Q: Do you feel that the program that should get us out of the woods in the intermediate period is not dependent on a rapid development of technology?

SIMON: No. But the oil shale area is going to require judgments on the costs, and this is what we're assessing.

Q: The last one I have is whether your experience of the last several months has changed your attitude toward the general conformation, the general structure, of a viable energy policy administration.

SIMON: Absolutely not. If anything, my experience has strengthened my opinion as to the need, the crying need, for one energy organization in the federal government.

Q: With a separate research agency?

SIMON: The ultimate goal should be to have a department of energy and natural resources with a senior man—if you wanted me to draw an organization chart, I can—a secretary in this department and two or three undersecretaries. And one of those secretaries would be in charge of the research and development programs and he would be knowledgeable as to the policy and implementation, and conversely so would the policy-makers be cognizant of what was going on constantly in the research and development. The danger that some people see in this is that the research and development arm, if indeed it were included in this agency, would constantly be called upon for short-term measures. I don't happen to agree with that at all. I think the short-term measures could be addressed within the self-contained units of the organization. Just as we have addressed the short-term problem here without obviating all of our other, more important roles.