THE BROOKINGS INSTITUTION

THE ROLE OF DISTRIBUTED POWER SYSTEMS IN THE U.S. ELECTRICITY SECTOR

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Introduction and Opening Remarks:

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P R O C E E D I N G S

MR. TALBOTT: I see a number of you have your coffee and even a little bit of breakfast. That's a good thing. I'm Strobe Talbott and it's my pleasure to welcome you here this morning for the release of what we think here at Brookings, and our colleagues from the Hoover Institution and the Shultz-Stephenson Task Force on Energy Policy think is a timely and important report.

And we are, of course, honored to have a lot of friends from the west coast here as part of this venture, and particular, the two gentlemen who have provided such an important leadership and support for the task force with which the Brookings Institution and our Energy Security Initiative have been partnering, and I refer, of course, to Secretary George Shultz and Ambassador Tom Stephenson. Welcome, in particular, and thanks to the two of you.

The report, in a nutshell -- and you'll hear a good deal about it during the panels, of course -- seeks to offer some pragmatic, but at the same time, fresh and bold ideas about how to reconcile three goals. One is energy security for this country; two is the sustainability of the environment for our planet, and three is the mitigation of the phenomenon of climate change or global warming.

Particularly, over the last couple of days, we should think in terms of climate change and extreme weather. In fact, I wouldn't be surprised if Secretary Shultz mentioned his own encounter with that latter phenomenon over the weekend. But put together, I think it is safe to say that this trio of issues and the way in which they interconnect is nothing less than the most important issue that the human enterprise faces during the century that has just begun.

And to say just a quick word on behalf of the way we approach it here at Brookings; we have five research programs here covering a very wide array of domestic and international issues, political, economic, social, civic. And there are a couple of issues that we feel are so important that they require the status of what we call all Brookings priorities. And the issue that we're going to be talking about today, the issue that is the subject of the report that we're jointly releasing is one of those all Brookings priorities. But much more to the point, it is an existential priority for all of the international community, which just passed the 7 billion mark, in terms of our population. And our ability to sustain both population and economic growth is going to depend on strongly rethinking some of the questions which are raised in the report and seriously considering some of the answers that are put forward.

Now speaking of energy, you are all -- no matter how much coffee you've had this morning -- about to get a real jolt of energy from George Shultz. This is a subject that Secretary Shultz feels very, very passionately about, as you will here. And I cannot help but draw upon a personal recollection of my experience as a reporter back in the 1980s when I was covering American foreign policy during Secretary Shultz's tenure at the helm of our foreign policy.

The most important thing happening in the world during that period was the emergence quite by happenstance, in many ways, of an entirely new kind of leader in the Soviet Union, and that was Mikhail Gorbachev. We all recognize that in retrospect. Not very many people, including a lot of experts on the Soviet Union recognized it at the time. Ronald Reagan recognized it very early on after Mikhail Gorbachev came to power. George Shultz recognized it very early on, and largely, on the basis of their intuition about Gorbachev as a human being, based on their interactions with him. Now, that has some relevance, I think, although indirect, to the topic that we're going to be discussing today.

Because of President Reagan and Secretary Shultz's understanding and appreciation of what was genuinely new and categorically different and better about Mikhail Gorbachev being a top man in the Kremlin, they saw an opportunity to do two things of epic proportion. One was to find a way of winding down the cold war, and the other was to do something about the sword of Damocles of global thermonuclear war that was hanging over our heads throughout the cold war. And the policies of what I will call for purposes of this observation, the Reagan-Shultz's administration, played a big role in affecting for the better of the wind-down of the Soviet Empire and the wind-down of the cold war.

And, I was in Reykjavik as part of a press pool when Secretary Shultz came out memorably on a Sunday afternoon to tell us how close they had come to doing something of world changing importance. But, while the Reykjavik Summit did not, in and of itself, succeed of establishing the U.S. Soviet goal of eliminating and taking steps to eliminate all nuclear weapons, George Shultz has not quit on that, to put it mildly. He has devoted many of the years since then, and a lot of his energy to the goal of Global Zero which, of course, relates in a number of ways, as some of us were discussing over dinner last night to the energy issue, as well as to the war and peace issue, because there's a very important question of how nuclear energy can be part of the solution to the problem of environmental sustainability and doing something about global warming.

Final point is that Secretary Shultz has, quite some time ago, through a number of his connections -- first and foremost, of course, at his beloved Stanford and Hoover, but also MIT, and now to the great dissatisfaction and pride of all of us Brookings -- through collaboration with us, to apply to the issues that we're going to be talking about today the same passion, commitment, and I will say pragmatic optimism that he has applied to these other important goals of ending the cold war and doing something about nuclear weapons. So, let me now turn the program over to him and thank all of you for being here.

MR. SHULTZ: Thank you, Strobe. I've always been impressed with Brookings, but not so much as with this past weekend. Because we're coming down here for a conference on distributed energy, and Strobe somehow knew -- I don't know how -- that we planned to spend the weekend in northwestern Massachusetts near Williamstown. So, he arranged for this epic snow storm that knocked out the electricity, and we said to ourselves, "Where is our distributed energy? We need it here." You're really remarkable Strobe to do these things. It's a great pleasure to be here and collaborating with you and your colleagues at the Brookings Institution.

You said a word about what you're doing at Brookings. Let me just describe briefly our approach. We're at Stanford/Hoover Institution. We're focused on policy issues but we try to inform ourselves of what's going on. There is a lot going on at Stanford and Berkeley and Livermore by way of research on energy issues of one kind or another, so we're very integrated with the university and our colleagues across the bay, and we try to keep track of that.

And then, we had made a collaboration with MIT and we had a game changer's conference last June with MIT. Susan Hockfield, the President of MIT, brought about 12, I think, MIT scientists to Stanford and we had a comparable number from Stanford and Bay area. And, we focused on five areas and we tried to say to ourselves, "Out of our game changers here, what's going on in the scientific and engineering world in these five areas?" And our plan, Strobe, is to have a second similar conference at MIT. And when we get up some ideas of what's going on and how close are things and what are people working on, we thought we might bring our caravan to Washington and see if we couldn't get somebody in Washington to listen to some scientists talk about what they're doing and why it's important to maintain significant and sustained support for energy R&D.

You don't need subsidies; you don't need loan guarantees, but we need support for the

energy R&D because -- at least from what I have seen in talking with a wide array of people working on this, the game changers are out there. Things are coming and we're going to have a different picture 10 years or so from now, even, than we have now. Not that a lot of the same things will still be of central importance, but they're going to be new things and they're going to make a difference.

In my own case, I got interested in this area almost 40 years ago. I was secretary of the treasury and I was acutely aware of the fact that President Eisenhower, who had reasonable credentials in the national security field thought that if we imported more than 20 percent of the oil we use, we're asking for trouble in national security terms.

So, I'm sitting there in the treasury and all of a sudden, we're hit with the Arab Oil Embargo. They sought to force us to change our policies by denying us oil; didn't work. On the other hand, I sat and I said to myself, "You know, President Eisenhower had a point."

And, in addition to the national security implications, the spike in oil prices made for great difficulty in our economy, and so there was an economic reason there. Well, I remember, at the time, people coming in and talking about things we could do. And, even as -- although I have a degree from MIT, it's in economics, not physics or something -- but even I could see that these ideas people came in with were pie in the sky.

But what happens? Price of oil goes up; people start getting interested in doing something; goes down, everything stops. The Iranian revolution comes; price of oil goes up; people get interested it; it goes down, everything stops. We've been on this roller coaster up and down about four times and it's been a catastrophe, I think. I don't know why we have done it, but we've done it. Now, my hope and expectation is that this time it's different.

The national security issues are much more penetrating. It isn't just security of supply that we need to think about, but it's where the money is going that we and others are paying for this oil. It's going to Iran to help them get a nuclear weapon and so on and so on. But that's not all. We see these convoys going into Afghanistan, and the price of a gallon of gasoline in Afghanistan is some astronomical number but that's not the worst of it. The worst of it is we're losing people in these convoys, and the military is basically saying, "We got to find some way of creating energy where we use it so we don't have to be so dependent on this long tail."

We have at Hoover every year national security fellows, one from each of the armed forces that come for a year. They're wonderful young people there at the --, the Lieutenant Colonel, Colonel Lovalot, and though I've been to Afghanistan and Iraq.

So, last year Commander Slayton -- are you here, Deek? No.

SPEAKER: Not today.

MR. SHULTZ: He's working. Well, he was here last night. Anyway, he said, "I'm a navy pilot and I've flown a lot of missions in Afghanistan. Every pilot knows you can go down. If I go down --" he pulls out of his pocket a little thing and said, "I turn this on and my friends know where I am. The only problem with this is it only lasts 48 hours." He pulls out of his pocket another little thing; unfolds it; three little solar panels. "I use this to recharge my -- that's distributed energy, and without it, it's a life-saving proposition."

I'm a marine, so I follow the marines. The Commandant has put out a really interesting forceful statement saying, "We have to get better on energy in the Marine Corps. We're going to sustain our ability to carry out our missions. We're supposed to be light, quick, ready to go, self-sufficient. And now we have this long tail of oil dependency. Our backpacks are getting heavier and heavier with all this stuff we're carrying. We've got to lighten up." So, they tried to create some distributed energy.

So, I found out that Strobe is a lousy straight man. As I gave him this, he says, "It's very heavy." So, I gave it to a lady sitting next to me and she said it's light, so there you are, Strobe. So you can carry this around with you, and they do in Afghanistan. And there is where you plug it in. So instillation buffs; nothing. There it is; done. Come and charge up your stuff. So the marine corps is getting on the ball. The military are getting on the ball in a big way, because they have to.

You talk to a navy person -- there's Admiral Cullom. Are you here Admiral Cullom?

SPEAKER: He'll be here this afternoon.

MR. SHULTZ: Be here this afternoon. Well, Admiral Cullom comes to our meetings. He's in charge of the navy's effort. Terrific man, and he says, "This is part of our war-fighting capabilities. This isn't something nice to do." He says, "A ship isn't any good unless it can be unstationed. The less time it has to spend refueling, and so on, the more time it can be unstationed." So, they're trying to figure out how -- and I guess they have -- how, if they go less than 12 knots or less, they can somehow go on

electric power, which they generate. It's only when they're going faster that they have to use their liquid fuel. This is the non-nuclear navy. And they're thinking of all kinds of ways to try to use more distributed energy to get where they're going.

So, I left with the idea, when it was proposed -- and Charlie Avenger came out to Hoover for a meeting and we started talking about this -- that we ought to have something that highlights the importance of distributed energy and appraises where we stand, where we might go, what do we have to do to get further along, and stimulates people to concentrate on the subject. And one of the things that has really impressed me in this area is how much can happen once people start thinking about something.

As you go along for years and you're not paying any attention to energy or you're not paying any attention to some subject, and all of a sudden somebody says pay attention, and then you think of all kinds of things, some of them absolutely obvious like for the air force; why put so much paint on your planes? It's just weight and you're carrying it around. Every pound cost you something. And that isn't high science; that's just observation. But I keep telling my wife -- we have a division of labor in our house; she turns on the lights and I turn off the lights.

And one time -- and Steve Becker was here. You'll remember Steven, when we had the big electricity crisis in California, some -- I don't know -- 10 years or so ago. And in our company we travel a lot. But the practice to seem to be -- the corners were more lighten than they needed to be. We dimmed the lights a little bit and we told them, if somebody's not coming in, don't turn the lights on in the office, or when you leave the office, turn them off. I hate to say this in front of Jim Rogers, but we did that and we saved 13 percent of our energy bill, and nobody was put out by it with no inconvenience, no high science, no nothing; just paying attention to a subject. So, let's pay attention to distributed energy. I'm looking forward to the discussion. And I think of this meeting as sort of a platform from which to go forward. A very good book has been produced. Jeremy Carl and our end of it is The Principle Worker and Brookings.

I might say, I was so impressed. You printed this thing over night. What gives around here? I thought Washington -- they couldn't do anything quickly, but this is remarkable. But it's a very good background piece and we'll build on it, but I don't regard this as a sort of a combination. I regard

this effort as we're getting a focus now on this subject and we'll take a certain cut at it today, but then we'll keep working at it and we'll get somewhere. So, thank you very much for coming and I'm looking forward to the panels and going on from there. Thank you. Join the marines and get distributed energy.

(Applause)