

DR. SOCOLOW: THIS IS THE SAME SLIDE THAT
16 YOU SAW AT WHATEVER TIME WE STARTED, AT 8:30, WHICH
17 REMINDS YOU THAT WE'RE IN THE SECOND PAIR OF TALKS
18 THAT I AND THE PROGRAM COMMITTEE GENERATED TO PRESENT
19 WHAT I'M CALLING NOW THE ACTION AGENDA. IT IS THE
20 TOUGHEST PART OF THE MEETING INTELLECTUALLY, I THINK
21 FOR ALL OF US.

22 GEOENGINEERING IS HERE AS A DEBATABLE
23 PROPOSITION, AND IT'S INTELLECTUALLY CHALLENGING TO
24 THINK OUR WAY THROUGH, AND WE ARE ALL IN THIS ONE
25 TOGETHER. IT'S NOTHING I'M SAYING, LOOK FOR A WAY TO
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1 GET INVOLVED. WE ARE ALL INVOLVED. WE'VE GOT A
2 PUBLIC THAT'S GOING TO WANT A LOT OF HELP IN THINKING
3 THIS THROUGH, AND I THINK WE HAVE TWO SUPERB TALKS TO
4 HELP US UNDERSTAND WHAT IT IS THAT WE HAVE AHEAD OF
5 US.

6 SO I WANT TO FIRST SAY, FIRST OF ALL, THAT
7 WE HAVE TO BE IN THE MENTALITY THAT WE WANT TO SOLVE
8 THIS CLIMATE PROBLEM, USING THE PHRASE "GETTING TO
9 YES." WE HAVE TO WANT THE SOLUTION TO WORK. IT
10 CAN'T BE ENOUGH TO IDENTIFY WHAT'S WRONG WITH THE
11 STRATEGY AS IT IS FIRST PROPOSED. AND THAT APPLIES
12 TO EVERYTHING WE'RE TALKING ABOUT. AND WE'RE ALL
13 USED TO FINDING A REASON WHY SOMETHING IS NOT GOING
14 TO WORK AND THEN STOPPING.

15 WITH WHAT CHANGES WOULD THIS STRATEGY
16 BECOME ACCEPTABLE? HOW MIGHT WE GET FROM HERE TO
17 THERE?

18 MAYBE THE PROBLEMS ARE IN TECHNOLOGY THAT
19 CAN BE FIXED BY BETTER TECHNOLOGY; THEY'RE
20 ENVIRONMENTAL, AND THEN AN ENVIRONMENTAL ASSESSMENT
21 MAY HELP. WE'RE REALLY WORRIED ABOUT HOW TO RUN
22 SOMETHING. GEOENGINEERING IS A MAJOR GOVERNMENTAL
23 CHALLENGE.

24 I'M THINKING ABOUT HOW TO FRAME
25 GEOENGINEERING. IF THE WORK AT IPCC TAKES

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1 ENGINEERING ON, WHERE DO THEY TAKE IT ON? IT'S A
2 LITTLE BIT PLAYFUL, BUT FOR SOME PEOPLE, IT'S AS
3 EXCITING AS SCIENCE.

4 WE MIGHT JUST SAY THIS IS THE ONLY WAY WE
5 WANT TO THINK ABOUT GEOENGINEERING RIGHT NOW, IS TO
6 ASK ABOUT HOW IT WORKS WITH ABSOLUTELY SOMEHOW AN
7 AGREED-UPON BOUNDARY LINE BETWEEN THAT AND ACTUALLY
8 DOING IT AND HAVING A LOT OF FUN UNDERSTANDING IT AS
9 SCIENCE.

10 WE COULD, IN SOME VERSIONS OF
11 GEOENGINEERING, PUT THIS IN THE ADAPTATION CATEGORY.

12 ONE OF THE THINGS THAT I FIND MISSING FROM
13 THE WORKING GROUP II MENTALITY IS THE ENGINEERING
14 THAT SAYS, IF THERE IS OVERALL MORE RAINFALL BUT
15 THERE'S LESS RAINFALL IN SOME PLACES AND MORE
16 RAINFALL IN OTHERS, THAT'S A CIVIL ENGINEER'S DREAM.
17 BUILD CANALS TO PUT -- YOU GOT OVERALL MORE RAINFALL,
18 SO YOU BUILD A LOT OF CANALS. THAT'S A KIND OF
19 GEOENGINEERING MENTALITY. LET'S GO OUT AND GET IT

20 DONE. AND IT'S VERY DIFFERENT FROM THE WAY WORKING
21 GROUP II THINKS ABOUT THINGS RIGHT NOW, BUT IT COULD.
22 WORKING GROUP III, IT'S ALBEDO
23 MODIFICATION, WHICH IS WHAT DAVE KEITH IS GOING TO
24 TALK ABOUT. IT'S KIND OF A MITIGATION IN THE SENSE
25 THAT IF WE THINK ABOUT THE FORCING IN WATTS PER

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1 SQUARE METER AS WHAT WE'RE TRYING TO MANAGE, AND
2 TRADE OPTIONS THAT DO THAT, WELL, IT'S JUST ANOTHER
3 FORCING OPTION. LET'S BRING IT ON, LET'S LET THE
4 MARKET WORK, BRING IT ON.

5 BUT MAYBE IT'S WORKING GROUP IV, WHICH IS
6 LIKE JULIO'S BIG YELLOW STAR, THERE ISN'T ANY.

7 THERE IS SOMETHING NEW HERE: HUMANITY'S
8 PROPER RELATIONSHIP WITH THE NATURAL WORLD IS AT
9 ISSUE. WE HAVEN'T THOUGHT ABOUT THESE KINDS OF
10 THINGS AT ALL. THEY SEEM TO US QUANTITATIVELY
11 DIFFERENT. WHOA.

12 SO LET ME CONCLUDE WITH THIS SLIDE, AND
13 THEN WE'LL HAVE OUR SPEAKERS. THE MORE WE FEAR
14 CLIMATE CHANGE, THE LESS WE CAN ALLOW OURSELVES TO BE
15 SQUEAMISH ABOUT LESS-THAN-PERFECT SOLUTIONS; HERE, WE
16 AS THE PROFESSIONAL COMMUNITY IN THIS ROOM, BUT ALSO
17 THE GENERAL PUBLIC, WE WILL FIND MORE INTEREST IN
18 THINGS WE THOUGHT WE WOULD BE ABLE TO RULE OUT THE
19 MORE WE SCARE OURSELVES AND SCARE OTHERS.

20 AND THAT'S WHAT'S GOING ON NOW. YOU'VE GOT
21 THESE PEOPLE IN BALI THAT ARE GOING TO GATHER IN A
22 FRAME OF MIND, AS "TIME" MAGAZINE PUT IT, THAT WE
23 SHOULD BE SCARED, REALLY SCARED.

24 HOWEVER, WE MAY DECIDE IN SOME SITUATIONS
25 TO FORGO THE CURE THAT WE JUDGE TO BE WORSE THAN THE
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1 DISEASE. USING ANOTHER ANALOGY, WE MAY DECIDE THAT
2 BUYING MORE THAN A CERTAIN AMOUNT OF INSURANCE IS
3 EXCESSIVE. WE WILL PREFER THE DISRUPTION OF CLIMATE
4 CHANGE TO THE DISRUPTION ARISING FROM AVOIDING IT.
5 IT'S VERY NICE TO SAY 2 DEGREES C, BUT WHEN WE'RE
6 HONEST, WHEN WE UNDERSTAND WHAT IT ENTAILS, MAYBE WE
7 ACTUALLY SAY IT'S NOT THE RIGHT POLICY.

8 SO WE HAVE A BIG CHALLENGE IN
9 GEOENGINEERING, AND YOU'RE GOING TO HAVE TWO
10 WONDERFUL TALKS: ONE FOCUSING ON THE ATMOSPHERE, ONE
11 ON THE OCEANS.

12 DAVID KEITH, AN OLD FRIEND OF MINE, STARTED
13 IN ATMOSPHERIC SCIENCE WITH JIM MCCARTHY AT HARVARD,
14 WAS DESIGNING INSTRUMENTS FOR AIRPLANES, VERY MUCH A
15 PART OF YOUR WORLD. HE BECAME INTERESTED IN PUBLIC
16 POLICY, AND HE RETOOLED OR ADDED TOOLS AT CARNEGIE
17 MELLON, AND HE'S NOW ONE OF THE MOST INFORMED PEOPLE
18 IN CANADA ABOUT THE CLIMATE AND ENERGY PROBLEM AND
19 ONE OF THE MOST VERSATILE PEOPLE I KNOW.

20 I'LL INTRODUCE DAVID KARL LATER.
21 HERE'S DAVID KEITH.
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