Tom: And it was really about this issue of the competition between climate change and poverty reduction. In your work at the foundation, are you finding that competition? Are you finding one is driving out the other more, particularly of late? And what are you going to do about it?

Eric: Thanks, Tom. Tom, thanks for doing this.

Tom: My pleasure.

Eric: It means a lot to all of us. At the morning talk, it was almost like it was set up between Al and Bono antipodes of a conversation, climate change versus poverty, the funds, the discussion, the public concept. And it was all about a gas, an atmospheric gas, but I thought it was not about carbon dioxide, I thought it was about oxygen, because it's true that climate change takes all the oxygen out of the room, and it takes all the momentum out of people who spent their life committed working against poverty. And it shouldn't be like that. Not only are the poor in the developing world the greatest victims of climate change, but if we don't grow economic development in the right way, they will contribute as in China and in India to climate change in a way that we won't be able to bring it back. So I can't imagine a better statement. I heard President Clinton say that the growing disparity between rich and poor and the marginalization of poor people, it is unequal, unfair, unstable, and unsustainable. And it contributes to insecurity around the world. We need to be mindful of all these things. The good news I think about our generation is that whether we're ADD or we can parallel process, we've got to be big enough and grown up enough to be able to simultaneously handle more than one threat. So what we're doing about it is we announced five initiatives, two of them are on poverty.

Tom: Go through the five.

Eric: Go through the five?

Tom: Yeah, just real quickly if you would.

Eric: So taking it from poverty first, I was in Africa, many of you were, I recognize your faces, at the TED Conference and there was this big fight between aid and trade, aid and trade. But if you talk to poor people in the developing world, they're not going to say I want more aid, more foreign aid. They say I want a job. I want to be able to feed my family and care for my family, and I want government services that work, education for my kids, health care, electrification, water. So we decided that those were twin halves of the problem of poverty and economic development. So one of our initiatives is to empower people, not just poor people, but starting off with poor people in the developing world, so that they know what public services, government and other public services are available, and empower them to take advantage, to avail of, and have access to

these services. Governments are not bad. We have this illusion that third world governments are corrupt and incompetent. There's some wonderful governments in the developing world, and sometimes they just don't have the tools to deliver what they want to do. So the other half is to try to help governments develop those tools and that draws on Google's technology and our information services. The other initiative in the area of poverty is job creation. And two-thirds of all the jobs in the United States are created by small and medium sized enterprises. You'd think it was the same in the developing world. It's not. Less than 15% of all the jobs in the developing world are created by small and medium sized enterprises. The bulk of jobs now are created by these big large corporations, mostly extraction industry. So if we can fire up the small and medium sized entrepreneur, that's where all the jobs will come from, and we hope to be able to play a role in that. In the area of health, and particularly the area of pandemics and emerging communicable diseases, there have been three dozen new diseases that have jumped from animals to humans in the last 30 years, any one of which under the wrong circumstances could become pandemic, one of which already has, HIV/AIDS is a pandemic, and it jumped from monkeys to humans. We worry about bird flu and SARS, but there's also Ebola, Lassa fever, Marburg, if you chant them in a religious way, all these diseases, you realize something's changed. And so what we're trying to do is to fund early warning systems and increase the availability of good response. And then lastly, what we were talking about this morning, are issues in energy and climate change, which Larry and Sergey are going to talk a lot more about. On the one hand, and I really appreciate, Al, you saying that RE<C captures the imagination of the problem. And what Larry said in the press conference a little bit wonky, but you know, or a little nerdy, I forgot what you said, it was something like that. But it really captures the equation exactly right. Until you can create utility grade electricity from renewable energy at a price cheaper than coal, the coal will be burned. I lived in India ten years. Every lump of coal will be burned unless there's a cheaper way to produce electricity. So we're really committed to that, and I'll let Larry or Sergey or both talk about what we're doing inside of Google to mount an opportunity to create our own one gigawatt renewable energy production facility. The flip of that equation though is, as you said, we have to be able to internalize the externalities of bad health consequences of coal, because that equation only works when it's the right cost, the fully loaded cost of coal and the fully loaded cost of renewables. The last of our climate initiatives is to try to create a world in which not only the coal stays in the ground, but the oil stays in the ground, the petroleum, the gasoline isn't consumed. And that really means electric cars. It might mean temporarily plug-in hybrids, but so long as you plug into a grid that is mostly coal, you do, you get some marginal improvements, but not substantial improvements. If you have a grid which is green and you plug into a green grid in the combination, those two things really deal with almost 50% of all greenhouse gas emissions. So I didn't mean to take so much time, but those are our five initiatives.

Tom: Terrific. Larry, let me start with you. Take us back to your own internal conversations about RE<C, which stands for renewable energy cheaper than coal, why you decided to go into the energy space, it's a big move for Google, and what do you think a company like Google could bring to the goal of one gigawatt of clean power, enough to power San Francisco, that maybe others haven't?

Larry: Yeah, I think we were really lucky to be at the intersection of a bunch of different things. Being in Silicon Valley, we have lots of friends and companies all working in renewable energy area. We also have this sort of relentless demand for people on the internet to do things, so people searching and email and all those things.

Tom: How did that manifest itself? How did you sort of, how did you notice it?

Larry: Well, we now actually have to buy computers to hold everybody's email and everybody's searches on the web, and just huge numbers of computers, and the energy to power those. And we want Google to work. You don't want to go to Google and say oh sorry, we're busy right now. That would be really bad. So we're forced to be very practical about that. And so we've had a team going around building data centers and finding energy and so on, and doing that worldwide because we want our service to be fast everywhere. And because of that, we really noticed we're getting, we have some facilities for example that are close to dams and so on. But a lot of times we're really displacing somebody else who would use that energy. It's not that by building a data center next to a dam, the dam is already being used. Maybe there's not quite as much transmission as there would have been, but it's not that that's such a green way of doing it. And many places you basically see that, we would see in buying a lot of electricity where you get it cheaply it's from coal. And the business side of our company is saying well, let's buy the cheap electricity and make sure our bottom line is good and all that. And we're kind of looking at this like this isn't good, right. Computers are using more and more electricity, people are doing more things with them, and actually the cost of your computing, that's electricity is going up as a percentage. It's actually pretty significant, it might even approach the cost of the computers themselves. And because of that, we said well, why aren't we making renewable energy cheaper than you would get it from coal? That would be the easy decision to make. Say we're going to get it cheaply and it's going to be green. And there's tons of start ups in this space. We've invested in some, we have friends in many different ones, and the problem we had is that all the start ups, they can basically have an incredible business making electricity at ten cents a kilowatt hour. And the reason is there's tremendous demand for renewable energy and we would buy it at a higher price, but you're not going to fundamentally change the game unless it's cheaper than coal. And the problem for a start up, they're looking at it, well, we want to succeed, we can make it at ten cents and succeed, but we really need to make it at three cents to really change the world. And we want those projects that could be three cents to start right now.

And we're willing to take the risk on those things. And obviously if you succeed at one of those things, you're going to have a great business. But it's very rational for a start up to say we're not going to take that risk, we're going to produce it at the ten cents, and we're going to have a great business and we want our business to grow slowly. And our primary goal is not to fix the world, right. Whereas we have a little bit of the luxury of driving some of those projects forward. So I think we saw that there wasn't enough investment in some of those things. And we also, we talked to enough people that if you really push the start ups and the people who are really smart on these things, you say well, do you guys have a way of doing it at three cents? They say yeah, we do. It's a little bit modestly higher risk, but we have a clear path to get there. And we're like well, why don't we get going on that now, what do you need? You need some people and a little bit of money and so on, that's a relatively modest resource.

Tom: Sergey, tell us a little bit about where the initiative is right now. Are you exploring different clean power alternatives? Which ones attract you? Sort of where are they? And what can a Google bring to this that an Exxon Mobile or Chevron can't?

Sergey: Well, just first off, where we are right now. We highlighted three areas of renewable energy that we thought would be good initial focuses, solar thermal, also deep geothermal, and –

Eric: [Inaudible]

Sergey: Right, good point. High altitude ones I should clarify specifically.

Tom: Why those three, Sergey? As you winnowed them down, what -

Sergey: We were looking at the options around at the time. I think there are potentially a few others that could make the cut. If I had to add one I would say photovoltaics. I think these are three that are known into the renewable energy community, but not broadly kind of thought about and well understood. And currently for example, if you look at wind power, the windmills are on par with coal today. Another intermittent power since you can't just rely on wind always being there, but they're already pretty good. We think that it can be even cheaper by using high altitude wind, and we highlighted one company that we're working with called Makani. They use kites at potentially high altitudes to generate. And a kite is much cheaper to make than a big metal windmill. So that's really interesting. If you imagine getting power that cheap, I mean that could be substantially cheaper than coal. The other one, solar thermal is pretty well known. I mean you already see these things with the big parabolic trenches and the solar towers and whatnot. And it's something that it just seems like there's just a little bit of really basic just engineering and development to make that be really cheap. I mean there's no inherent barrier in the way if you kind of, you just need so much mirrored surface

and you can kind of do the math. And the existing companies it's the situation that Larry said, they feel that if they can produce for ten cents, which they take a more conservative engineering route, they'll still have a great business. We want to push them a little bit more saying we're willing to risk these maybe being not quite as 100% guaranteed to pan out, but we want to bring it down to three cents or something like that.

Tom: So just technically how you're doing it, you've found a stable of companies in these different areas and then you've invested in them, so are you starting something –

Sergey: We have done investment in both solar thermal, as well as the high altitude wind. We think that we should have some of these things going on in-house. We don't have the in-house research going on yet, but we are hiring in those areas. And deep geothermal is actually another example of one because there's existing geothermal fuel, look at Iceland or something like that, in those areas that have that, that works pretty well for them, but it's not necessarily dirt cheap, I guess it's kind of dirt cheap literally.

Tom: ____ Iceland.

Sergey: But it's, anyway, there's reason to believe that if you go really deep and actually take advantage of the technology that the dirty industries create in terms of drilling and whatnot, that you can actually have geothermal power be cheap and available almost everywhere around the world. And that's really exciting. That's a little bit farther off, this is where you don't really see start ups because it requires more fundamental research.

Larry: The gentleman from AeroMet I think is here, and they have 400 megawatts of geothermal that they own even. So there's a lot of great work going on in those areas.

Tom: Larry, what, Larry Page, two questions. One is what is it you guys have been an amazing innovation company in the area of search. What's the difference between doing innovation in something like search bits and bytes, and doing innovation in something like energy, which is atoms, molecules, in terms of being able to really do this kind of breakthrough innovation? What's the difference in working in these two areas?

Larry: I don't find it to be that different. I mean we've had a fair amount of work that's gone on just making our data centers efficient and actually a lot of the people and knowledge we've had in pursuing some of the energy related things are those people. Like we're basically borrowing those people a little bit from their day jobs and hopefully Google will still answer your query and so on. And we've had just wonderful people in those areas. I think what you need are people who are willing

to take a new way of doing things and so on, and who know enough about the area to make some progress.

Tom: What's been the reaction of the energy companies, the Exxon Mobiles, suddenly they wake up one morning, they read in the paper that Google is going into the energy business. And these are companies that have historically, Al Gore and I were talking about this on the way over, they're expert at pushing things into the future, and it seems to me you guys actually want to claim the future now as opposed to always keeping the future just ten years out. What's been their reaction?

Sergey: I haven't talked to many of them. I would suspect that their reaction is different depending on which one. Like Exxon, I don't know that would be the same as BP for example. But some of these companies like BP are certainly very interested in investing in these clean technologies. I think we have a little bit of benefit that we don't have with an existing business that we're worried about cannibalizing or anything like that. We bring that to the table. I do want to highlight one important difference between like doing web search and things like that and the energy business or at least web search when we started it. Right now, if you want to prove a success in energy, there's a certain scale you have to achieve, otherwise you can't demonstrate the cost effectiveness of your product. And that probably means putting in $100 million plant or something like that. I mean there's a big bet that at some point you have to make and it takes a lot of capital. And that's, we feel like this maturation of our company that we actually have a fair amount of capital, and we're willing to probably be riskier with it than other companies, like we can take a chance on a data center. I think that puts us in a position to do things that other companies won't.

Tom: I'm going to get to Larry Brilliant in a second, but apropos of that, Larry Page, what's been the reaction of your shareholders?

Larry: I mean I think it's been fine. I think, I mean we stated we would make probably investments, capital investments in hundreds of millions of dollars that would be, that would generate positive returns. And I think we said just what Sergey just said, we'd take some more risk in those, but it would be modest, and we'd still expect them to net out positive. And we're already doing that and of course building out our infrastructure in data centers and so on. So I think that reaction was fine. And in terms of hiring people and really getting these projects going, I mean those are, if we could hire 1,000 people who are really excited about doing this we would, but we're not going to find those people.

Tom: Larry Brilliant, one of the things we talked about at the morning session is I've always had this feeling it's much more important to change your leaders than your light bulbs because leaders write rules, rules shape markets, markets give you scale. But one of the problems we've had, you almost couldn't make this up. And

people don't realize because it was actually badly reported, we just passed an energy bill where we threw out the incentives or we did not include the incentives for wind and solar, and we maintained those for oil, gas, and coal. Mitt Romney just won a Michigan primary in the Republican Party by promising to get rid of the mileage standards just passed by Congress. That is dumb as we want to be. You could not make that up, but we just did that. Now, how do you succeed in this space without taking, pardon the editorializing, but _____ now and I had to get it out, you know. But if you want to know what I really think. But can you succeed in this space--I'm interested in all three of you--without taking more of a political position?

Larry B: So what do they do in law, they say I'd like to incorporate by reference his comments. I'm accused often of being maybe a little rosy eyed, I think, or rosy glasses or whatever the expression is. Where's Bono, he'll help me. The people who have fought against protecting us against climate change, a very, very small percentage of them are bad people. I mean you'd be disingenuous if you didn't recognize that some very small percentage of them are bad people. They have children, they have grandchildren, whether they call it earth stewardship or they call it protecting their kids from using this, they're good people. We have somehow failed to articulate in the most compelling way the urgency of the moment. Let me just take a moment to say when we talked earlier about the conflict between poverty and climate, I think this is an extraordinarily sophisticated audience. But you know, I had a conversation with Mohammed Eunice who has been a friend for 30 years, and think of his whole body of work, five million women who have had loans, all of them have paid it back because of micro credit, moving into telephony. We have a deal with him where the Sava Foundation will do surgery on blind people, and he'll give a micro credit loan to people who are blind. Bangladesh and the rest of the world has benefited from everything he's done, all of which will be washed away if you have a sea rise of three meters. So you can't separate the quest for dignity and fighting against poverty and climate change. And I think that, so he gets it now, Mohammed Eunice gets it, people working in the development world get it. They know that while they want to battle urgently for the hurt that poor people feel today, the two million who will die this year of malaria, they also know that with climate change it will be five or seven million dying every year. We have failed to get that degree of awareness and understanding in Congress and in Senate and in the political leadership. It's our failure. We can't give up on that. So the areas that we're taking aim at I guess because you've got to be focused, we're very interested in internalizing the externalities, the negative health externalities of coal. When you dig for coal, you kill people, miners die, they get black lung disease, they get other respiratory disease. Their children and our children miss school, we miss work for respiratory diseases caused by coal. You only have to be in Beijing for a moment to understand that. So the regulatory issues, the policy issues about how we truly, what's the true costing for coal. It's not just the marginal cost of

extracting one lump of coal. It's what does society pay for it? I liken it to the second hand smoking issue. And that's where I think we can go.

Tom: How do we reframe the debate, though? So you get, Al quoted these numbers this morning of nearly 3,000 questions asked up to now on the Sunday morning talk shows and in all the debates, and three on climate in this election. And as Al said, there were three on UFOs, so climate and UFOs are now equal. What are we doing, what is Google doing, what is the plan to reframe the debate?

Larry B: Well, earlier I think Bono said this would be, maybe Al said, would be the first time that public movement took place in order to raise taxes if we were looking for cabin trade and something like that.

Male: I said that.

Larry B: And I think it's much more compelling to look at what happened with second hand smoking. There was a time, how many of you remember when all the chief executive officers of all the tobacco companies raised their hand and said no, it doesn't hurt, it doesn't hurt anybody at all, I smoke it all the time. We need to reframe the debate. We need to understand the negative consequences of the way in which we are developing our world, and coal is a great example. And that's a role that we can play. We can fund research with credible researchers who will identify all the externalities of coal. It shouldn't be Google saying we don't like coal. It should be here are the best researchers in the world, and we're going to give them grants so they can cost that out. Those are the kinds of things I think we can do far more effective than going to Washington and saying we're Google, you've got to stop digging for coal. That is not going to necessarily have the desired effect.

Tom: Okay. Larry, knowing what you guys know now about the energy business, and how we get to scale, we're going to have an election, we will have a new president. Apropos of that issue, what do you think would be the most helpful thing in terms of your own project that the next president, him or her, decides on day one around the energy space? What would be most helpful for getting your project to scale?

Larry P: I mean I don't know the best possible thing. One thing that I'm very concerned about is transmission. And I just like to tell the story, I went to The University of Michigan in engineering, and like 20 years before I got there they closed their power transmission school. They had a school that dealt with high tension wires and power transmission and that was closed long, long before I got there. And unsurprisingly, that area hasn't advanced that much. And I'm pretty concerned, what Sergey mentioned about wind is very true. The costs of a windmill, the power is competitive with coal now except for transmission, and, sorry, the transmission and the variability. And if you have better transmission, that really

helps you with the variability. There's been studies that show for example Europe could get 90% of their electricity from wind at a cost equal to coal, 90% just from wind at the same cost as coal if they had better transmission. Now it's kind of terrible that there's nobody working on that, right, as far as I can tell, or very, very few people. And even if we did have technologies that were better for the transmission, the ones we have are probably good enough to solve Europe's energy needs. But the odds that they'll get deployed across a wide area like that are probably close to zero without somebody, like a U.S. President or somebody powerful saying we're going to build really good transmission so that we can have better renewable energy and solve some of these problems.

Tom: Give us kind of interstate highway system for the grid.

Larry P: Yeah, right now if you order a transformer, three years is expedited delivery. We know that because we've ordered transformers. So I think in that kind of environment we're not going to see very fast progress on solving these energy issues. So I'd say transmission, we should just assume that we're going to need better transmission. It would be nice to use more energy than we use now and have it be renewable, and we're not going to get any of those things unless we have better transmission, and that's got to be a governmental issue.

Tom: Sergey, other than transmission, what would be yours? What do you think the next president could do that would be most helpful?

Sergey: I think that we want to be on an equal playing field between renewables and coal and dirty energy. I think people kind of under-appreciate right now, they think like well, all these renewables want all these subsidies and taxes on the dirty technologies. But the situation right now is very opposite of that. If you just look at Larry mentioned the pulmonary disease effects of coal, not to mention the particulates of say a lot of our transportation, if you look at, well, the Iraq war, which whether you believe that the U.S. is in there for oil or not, certainly the reason that Saddam had all that military might was because of the oil money that we paid. If you look at things like the costs you put on renewables, the tariffs on Brazilian ethanol right now, because I would today, sure, I'd run my car on Brazilian sugar cane ethanol, but the tariffs make it prohibitive, even though it's the equivalent of like $30 to $40 a barrel in Brazil today. I have friends who have electric car companies and if you look at kind of the regulatory hurdles they have to go through to get their cars on the road, all the crash testing and whatnot, it's true that car companies do all the crash testing on their gas cars, but they don't on the motorcycles, and you know the motorcycles are unsafe. So why not a budding young company can sell a few hundred electric vehicles prior to having to go through all that, which may very well be very safe. And also, none of these car companies are forced to consider the safety of the people that they hit. That's kind of a funny thing, but. So I also having, we've installed a lot of solar capacity on our campus.

Tom: Talk about that a little bit, what you guys have done, what you've learned from your own experience.

Sergey: I think we're up to, we're over 1.6 megawatts, something like that now. And we installed them on the roofs of our buildings, as well as we built carports and things like that. And it's been great, creates shade, it reduces our power costs, it's been a good investment, but there were a lot of hurdles. And most of the hurdles aren't technical and they're not financial, they're just regulatory. By the time you got all the permits to do this, that, and the other, and these aren't, I don't think these are people sort of conspiring against clean technology, it's just by the time you add up all the federal, state, and local government zoning, planning, whatnot, it adds up to a really big burden, whereas, if you kind of use status quo technologies, just plug me into the grid, you don't have to do anything. Somebody just shows up. A friend of mine recently installed fiber to his office building and had to cross little creeks, had to put up posts, and all these people showed up and they had to verify that it would withstand like 200 mile an hour wind or whatnot. And the guy who erected it who normally puts it up for the power company there, PG&E said oh, yeah, PG&E doesn't really have to listen to any of those regulations, I just put up a pole, I don't have to go through any of that. So there's just all these hidden barriers to clean energy today that don't exist for dirty energy, and that's the truth of the world as it stands today.

Tom: Larry Page, one of the things that Google.org is trying to do is unlock entrepreneurship in the developing world as a way of overcoming poverty, and a lot of people have taken a crack at that and it failed. What do you think you guys could bring or are bringing to that initiative that might make it work where others have failed?

Larry P: Well, I think the problems that you have left in the developing world are the really, really hard ones. And I've tried to take a lot of vacation time and travel around there and really understand, try to understand what's going on. And there's been already tremendous work by very many different people, a lot of which are in this room here. So I think we're going to try to do something more. We've been running things like business plan competitions, which I've seen personally some of the results of, and I think the things that I've seen that have been successful in these areas, there aren't like massive amounts of labor. But it's very careful kind of seated attempt to just generate a little bit of knowledge in local people like you should have a business plan, you should think about what you're going to do and then compete about it and talk about it and learn how to do that.

Tom: Talk about that, you started a competition around business plans, talk about that a little bit.

Larry P: I mean that's basically it, you just have a local entrepreneurs, you have a big event, you give out a prize, little bit of money for the winner, which gets the winner the ability to get funding and all those things, and just that whole mechanism until, in Silicon Valley this is what people do for breakfast. They know how to do that. And in Kenya or somewhere they've never seen that before. But once you get that started you get a community around it, you have a few hundred people involved at first and then you've got thousands and so on. I think that's how you're going to make progress is with the local people. And there's some idea that makes sense there and really just growing that and making it happen. And I do think that having a lot of enterprise, I mean there's a lot of things going on in these places, but having a little bit of organized enterprise, having some of the things that we've learned how to do, just getting that idea into people's heads, is really important. You go to these places and you're like well, they don't have any debt financing. I was in Ghana, for example, recently and they don't have any debt financing for houses really. And you're like well, no wonder it's hard for people to buy houses, there's no way to borrow money to buy a house. You can't secure it, right. We've discovered that's an important thing, right. So somehow just getting that idea and then the people there are obviously very capable and they can really run with those things once people know about that and know it exists.

Tom: So when you were made aware of a problem like that, do you then call up Larry and say hey, is there some way we can get either financing to local banks or start our own? What do you do with an idea like that?

Larry P: I mean I think we just try to talk about them. It's not, I mean I think again these are the problems that are really hard that haven't been solved yet, and a lot of people haven't been working on them. And so there's usually ten different things standing in your way. You don't have a body of law, like I don't think the way they do land ownership there for a lot of these countries, you don't really know who owns the land or you don't have clear titles, it's hard to have that based on that. And so you just run into the reason why it's not solved is because there's ten things that need to be done. It doesn't mean you shouldn't try to do those things, right.

Tom: Sergey, talk about what you've learned in China and India in the energy space. You obviously compete in China in the field of search, what do you see going on there that excites you or not about in the energy field?

Sergey: Well, I think primarily in China I'm a little bit stressed out about the energy space. I mean the number of coal plants that are going up there, I mean that's going to be a really big challenge. I think it is important for us to solve the problem in the U.S. kind of unilaterally at first ahead of pushing the developing countries. But I do think that we need to do it quickly before it's too late in those other countries. And I think there is a lot of reason for hope there, too. If I'm

going to drift a little bit further afield to Buton, which my wife and I visited a year-and-a-half ago. And we kind of you do these treks there and we hiked up and you go really high, you get altitude sickness, you're up in the middle of nowhere, and the only people you run into are these yak herders. And they don't really have anything, they just like have a tarp they put over a few rocks. They have their yak, which are wandering around far away, and they only had one piece of technology, which was, well, two. They had a solar cell, and an LED light. And it was the most amazing thing because you trust –

Larry P: They must have a battery also.

Sergey: That's true, they did have a battery, too. Anyway, and you walk around, it's really, you're in a really remote part of the world kind of up in the kind of in the sky. And that's what they have there, and it makes a lot of sense. I mean first they have a legal system where they are trying to prevent deforestation so people can't just chop down trees to create their fire. I mean they do, they're allowed to take some, and they use that for cooking, but they don't use that for their just night light that they need. And it turns out to be really, even though for them I'm sure it's expensive to buy a solar cell, it's still really cheap compared to the alternatives. And I think that makes sense in a lot of places around the world. In Africa, for example, where you don't have the transmission lines, you don't have great roads to transport the diesel fuel and not to mention it's $100 a barrel now anyway, all these places, even at today's photovoltaic prices, it makes a lot of sense to install photovoltaics. And I think you're going to see that trend accelerate because this technology is becoming cheaper and more ubiquitous, and nothing is really improving in the dirty space.

Tom: Larry, do you notice in terms of Google trends, I don't know if you've look at this or if you can, in terms of what are people searching for in terms of solutions, climate change, energy, clean energy, solar? Do you see anything showing up there in Google trends at all?

Larry P: I haven't really looked at that. But I think people are definitely much more aware of these things, and it's hard, I think it's hard for everyday people to know what to do. I mean you have the compact fluorescents and so on. But I think a lot of the changes that need to get made are the bigger issues, transmission and bringing down costs and all those things.

Tom: I want to open the floor. We have so many smart and interesting people here, and Michael Elliott was out there somewhere. Michael, yeah, you had a question and I wanted to make sure you got it. And just please identify yourself, back there.

Mike: Hi, Mike Elliot from *Time* magazine. One of the unexpected, at least to me, themes of the first day of Davos yesterday was a crisis of expensive food that was mentioned by delegates from India, from Africa and from China. And rightly or

wrongly, in many parts of the developing world that's associated with the increasing amount of arable land that's devoted to the production of ethanol. Similarly, Bono just earlier this morning pointed out that in landlocked parts of Africa and other parts of the world, air transport is an essential tool of economic development. I'd just like to ask all of you, how, in practical terms, do you convince people in the developing world that these two great goals of poverty reduction and climate change are not in conflict? How do you convince people that climate change will not be a policy adopted on the back of people who just recently have moved from one meal a day or two?

Larry Page: Can I just say, I feel like one of the biggest problems we have in the world is that people don't realize that technology is the way we solve these problems. So I was giving a talk recently, and we have this great economist who helps out, Hal Varian. And I was saying, well--he's saying basically all the growth in GDP per capita has been to technology, and you can graph it. It's like an exponential--it starts with basically farm improvements, mechanization and mass manufacturing and so on, and the way we're going to get out of problems like that is by having better technology. And if you look at--the US has something like--you have 10,000 people, the equivalent of 10,000 people, helping you every day with the energy use. They're pushing your car, they're carrying your water for you. And if you work out the number of calories you'd have to use as a person to do all the things that you do, it's something like 10,000 people. And in Africa, that number's like one or two or zero, right? And really--it's really not fun to have to carry your water. It would be really nice to have somebody carry your water for you. And the way we're going to solve those problems is by having more energy, not less, and by having it not hurt our environment, the world that we live in, and by having it be a lot cheaper, right? Having more, having it be cheaper, those things are related. The way we're going to do that is with technology. There's no other magic that's going to do it, and that's the way it's always been done. And if you look at the trends, there's been huge, huge advances in all those things.

So I think the way you're going to solve poverty is by having helpers, and energy is a great way to have helpers. The food cost is probably largely based on transportation. The cost of transportation is largely based on the cost of energy. And so you'll solve both those problems at once. You'll solve food and you'll solve energy, and that will help with poverty and starvation and all those things. And the way we're going to do that is we're going to make it cheap and prevalent. And you can dig a hole anywhere in the world and get tons of energy. That would be a great thing, right? Let's go build that.

Larry Brilliant: Can I make a comment?

Tom: Go ahead.

Larry Brilliant: What you just heard from Larry was what, I think, forced me to change my mind about how you deal with climate change, because the logical extension of this faith, I think, in technology and engineering -- and not just faith, but historical record of it -- when we started doing our energy work, we were very interested in renewables, we were interested in government policies, and Larry really challenged us. He said, you can't do it out of a feeling of scarcity, you can't act just out of conservation, because then you won't have economic development, and you will hurt so many people by any kind of an abrupt slowdown or any kind of tradeoff. You're absolutely right about the ethanol issue. They're called chipotle(?) wars now or tortilla wars as people are really rising up against ethanol, for that reason. But Larry says, don't make it into a competition. He says, find a way to make electricity -- not that you have to cut back on it but that you have more than you ever dreamed of, and that you do it at prices less than you ever thought of. And gird your loins, get the engineers [inaudible].

Larry Page: By the way, though, the corn issue is largely a public policy issue.

Larry Brilliant: Yeah.

Larry Page: The reason why the corn's expensive is because we're making ethanol out of it, which we shouldn't be doing.

Larry Brilliant: Right.

Larry Page: And Sergey already mentioned we have 50 percent--we have a 50-cent tariff in the US on imported ethanol and a 50 percent--50-cent subsidy on corn ethanol, so its $1 a gallon, and that's why corn's expensive. It's not because people would otherwise be making ethanol out of corn.

Larry Brilliant: Right, right.

Tom: It is a travesty that it is--there's a 54-cent-a-gallon tariff if you want to import sugar ethanol from Brazil. But if you want to actually import a gallon of refined gasoline from Saudi Arabia, it's only a penny and a half. So from a country in our hemisphere that's a democracy, we have a 54-cent tariff, and from the people who brought us 9/11, we have a 1.5-cent tariff. Al, please.

Al: Yeah, I wanted to briefly comment on Michael Elliot's question. First of all, I wanted to compliment the three of you for the equation, RE<C. I think it's a brilliant and simple clarification of the key moving part in all of this debate. But there's actually a rich and growing literature on the connection between food insecurity in the developing world and climate, and the price of tortillas and the price of other staples has actually gone up more because of the thousand-year drought in--what many people are calling the thousand-year drought in Australia and the effect on yields on the supply side than on the very marginal extra

pressure that comes from renewable fuels. I happen to agree that corn-based ethanol is just a transition dead-end toward cellulosic ethanol and the use of enzymes--enzymatic hydrolysis is what they--it's above my pay grade, but it's, I think, one of the winners on this. But if you look at the map of where the food is to be grown in the developing world, the impact of climate on this is by far the most important issue. The United Nations' development program has put out two reports now. Kevin Watkins, the principal author, says that climate is *the* principal development challenge, and the program for fighting against food insecurity has to take account of climate in order to succeed. And by the way, the trends in agriculture in the developing--the poorest of the poor countries has been monoculture. The reason why, as Larry Brilliant said, the high percentage of jobs is with the large multinationals is because they're replacing the kind of subsistence agriculture with locally grown, appropriate crops with these huge plantations of monoculture that depend upon lots of petroleum, lots of transportation. Wangari Maathai's greenbelt program got its notice for tree planting, but she uses that to educate women, primarily, to go back to the traditional crops that are--and Alice Waters in the United States has been among those who's generated this movement. Food insecurity is one of the principal cutting edges of the climate crisis in the developing world, and solving it is yet another reason why we have to intertwine this with solutions to the climate crisis.

One final point, back to the RE<C. Innovators bringing renewable energy down in cost represents the left-hand side of that equation. The right-hand side of the equation is equally important. The externalities that are not presently reflected in the price of coal and fossil fuels have to be priced into this equation in order to reflect reality, and rather than seeing that as a tax, it should be seen as a revenue swap. That all ought to come back on the left-hand side of the equation and in the form of adaptation not only in the poorest of the poor countries but among the poorest of the poor in the rich countries.

Tom: Thank you. Esther? Oh, I'm sorry, go ahead.

Larry Brilliant: Can I just make a very quick comment? Judy Rodin is here, who runs the Rockefeller Foundation, and she's sort of been our inspiration and mentor. They have a $150 million program, the AGRA program, which is to try to deal with new seeds. Gates puts the most--two-thirds of the money in. That is because Africa never really had a green revolution, not in the way we think of India having had one. And because of climate change, you will see intercurrent drought and floods and salinity as salt is brought from the rising seas over the shores into agricultural land. The situation is so dire that, for the first time in known history, farmers in Andhra Pradesh and in parts of India are committing suicide, because their lands will no longer produce enough calories per _____ to feed their family. So Al is, in my experience, absolutely right. These are twins of the same problem. Climate change makes poverty worse. Poverty, if it does economic development

the wrong way, makes climate change worse. We can't choose sides. We have to be both and.

Tom: Esther?

Esther: Yeah, thanks. I want to add one other thing to this both and. I don't know whether to challenge Larry Brilliant or to ask a leading question of Sergey and Larry. But none of this--if you think the US government is short-sighted, the other governments are so much worse. There's a huge amount of corruption in many of these countries, and it forestalls things. You can have business plans up the wazoo. But now your guy gets his $50,000, and the next thing he knows, the tax inspector comes calling. Or he tries to open an office but it gets closed down because some rich landowner who's related to the nephew of the governor wants to start a shopping mall or something like that. And so in order for the top-down stuff to happen, you just need to go talk to the governments. But for most of the bottom-up stuff to happen, the stuff that's going to create the diversity and the crops and the entrepreneurs and all this economic growth, one way or another, you do have to take on these governments. Please comment.

Larry Page: Well, actually Larry and I have been talking about this issue a lot. I spent some time actually in Ethiopia -- the elections, actually -- with The Carter Center just monitoring the elections, which is really interesting. I recommend it to people. And they have really good systems. You can debate the election there, but they have really good systems now. They have a series of, like, ten rules before they'll go into...

Sergey: It was all Larry's fault, just so you know. He miscounted.

Larry Page: They have a--like, they have--for example, they have, like, ten things they have to have before they'll go into a country to monitor elections. And, for example, the US, I think, meets none of them, by the way, whereas many--most of the countries--newer countries doing elections do meet those. And it's just about accountability. Everybody watches the ballot box getting filled, the ballot box expands. Once they have the ballots, they write the numbers down on the building so anyone can see them. And if you want to make sure that all the tabulations are right, you can just visit all the buildings and count them.

Audience: [Inaudible]

Larry Page: Yeah, you have to count the ballots. Anyway...

Audience: It's not about the elections, it's what people do [inaudible].

Larry Page: Oh, sorry. I was going to transition to that, sorry. I think that--I think elections are an area we can learn from because there's been so much work done by a lot of

great people that there are actually procedures in place now that we know, if we have the following ten things, then we have an election that's probably mostly fair, or we know whether we did or not. And I think we need those set of ten things for other parts of government. So there's great organizations that are trying to do things like just measure--if you're putting money into a school, does it actually get built? Can you see the school, does it have walls, does it have books, and those kind of things? How do you measure that at scale? And so what are the ten things you need to do to make sure, when you gave the money for the school, that they really appear and they have teachers and students and all those things. And I think if we get some of those procedures and rules right for these governments and we get the accountability and the understanding of what's going on, I think we'll make a lot of progress around the corruption side and so on. My brother has a phrase, ISO 9000 for governments. If you go around in these developing countries and you see a factory, they always have an ISO 9000 banner, which is basically this bureaucratic stuff about how--make sure that the stuff you make is really what you claim it is and it's safe and the bolts don't break, and if you build a building out of the nails, they don't--your building doesn't fall down. And we don't have the equivalent for governments, and if we did, maybe that would help a lot. And I think we're talking about that, and Larry alluded to it.

Larry Brilliant: This organization that Larry's talking about, _____, we've given them some money, and they're actually doing surveys of not the input or the output but the throughput of education to see whether kids are actually literate -- not whether the government says they are or the schoolteachers say they are, because parents who are not literate can't gauge the literacy of the education that their kids are getting. So there's really three parts to this. First, I want to say a nice thing about the government of India. They've got three $100 billion programs to address issues of intractable extreme poverty, and one of them is a program called the Right to Information Act. We have one of those in the United States, but this one has teeth in it. If you don't get your grain allotment that you were entitled to, you go to any magistrate and you say, I didn't get my grain allotment. They have 30 days to tell you who touched that grain allotment at every single _____ in the chain, and if any one of those guys doesn't tell you what they did with it, they go to jail -- and they actually make people go to jail. It's an amazing piece of legislation. Likewise, they have a Right to Work Act where the government has allocated $100 billion for people in India who, on average, can--300 million people earn less than $1 a day. So they have offered anyone $1 a day of work for 200 days, $200 a year. But the problem is corruption. The problem is it's the leakiest pipe in the world when you start off with $100 billion in Delhi and you've got to get it to a village or any other place in India. So they've built the best program evaluation system I've ever seen. It's called a social audit. Forget about where the money started or how it gets there. At the end of the day, they bring all of the landless peasants together who are entitled to get this work and get paid, and they pull out the roster and they check the thumbprints on the roster, in front of 2,000 villagers. I attended some of these myself, where corrupt individuals were just put in jail

immediately in front of everybody, and thousands of people cheered because they'd never felt so empowered.

I think these are some of the things that we need to be looking at. There are lots of solutions out there. The other part of it is that I don't think people in Ghana know what the people in India are doing. I don't think there's much of what the UN used to call TCDC -- technical cooperation amongst developing countries. We with our technology and others should be able to spot those things which work in one place and share it with everybody. You can be very optimistic if you go to a social audit in India, I'll tell you.

Tom: Sergey, did you want to jump in on any of this?

Sergey: Yeah. I do have--I think that the US, even today, remains a leader in many ways, and I do think that if the US transitions to clean, I think a lot of these other countries will follow, corruption aside. Now today, I do unfortunately the other countries are leading the US. And if you look at--they may be small example, but Bhutan that I mentioned or Costa Rica or any number of others, these countries are using renewables, they're preserving their environment. They're actually the leaders today. It's a minority. But I think we need to get the United States in the loop, and I think then the majority of countries will follow.

Paul: Could I--I'm Paul Verkuil from Boies, Schiller--excuse me--Boies, Schiller & Flexner, a law firm in New York. Regulatory policy--Al Gore mentioned the externalities issue, and really this is what we need to focus on in the US--you were talking. How does it happen, how can we be optimistic? Well, lawyers, as you know, are designed to make things slow down, or potentially speed them up on the right side. Let me give you some positives. Tom Friedman was pessimistic about where we are here in the US about shifting over, internalizing the costs of coal and oil and gas. But some good examples. Tobacco -- it did happen. It took 30 years from the time we learned the problem until we solved it. This was the Gore Administration, may I say, with your friend Clinton. The FDA did it by regulation, by regulation ultimately did it. Also, seat belts. It took 30 years to get seat belts, to internalize those costs, but it happened. And it can happen here less than 30 years, especially if you have regulatory policy shifts. A big harbinger here is the Supreme Court's decision in *Massachusetts v. EPA*, telling the EPA, indeed, you have the power and you must regulate for gases in the environment.

Tom: Did you have a question?

Paul: You must regulate.

Tom: Did you have a question?

Paul: And my question is, why don't we get Exxon Mobil and all these guys, spend more time with them, win them over to the alternative fuels argument, and get a better lobby than we now have?

Tom: Larry, want to take this?

Larry Brilliant: Well, I think some of those oil and gas companies you can have that conversation with and some of them you cannot. And I have actually been very impressed with BP. Whatever its other problems have been, there is inside of that organization a genuine search for alternatives. I laughed, because it's so easy to be cynical, when they say BP, Beyond Petroleum, but I actually have been very impressed with that. And we have other oil and gas companies that produce deep hydro--deep thermal energy in the US. I don't think that's an impossible quest. There's some people here today, Dan _____ and others, who've been trying to get that conversation going and to keep it going. But I do believe that you're better going around these companies, going to their customers, letting their customers know that if you go down this road you're endangering your children's lives in the future. I think that's a better role for people who are trying to advocate change than--you need help, and customers are a really good group to help you.

Tom: Van Jones--Van, you had a question?

Van: Van Jones, Green for All, Oakland, California. I just wanted to just make an observation. We are thinking about, how do we expand this coalition? How do we get more people to care about buying the good clean stuff and actually more people who want to put the right price on the dirty stuff? And often these conversations become, what's wrong with everybody? Why doesn't everybody get this? Well, I spent the past year--past three months, I talked to 30,000 people about climate change in places like Oakland, Watts, Newark. We talk about poor people in other countries, you mentioned talking about poor people in the developing countries. This is what gets people's attention. If you tell people who already live in crisis about another crisis, they get depressed, okay? You're poor, you don't have a house, you don't have a job, you're scared, and you say here's global warming, it's going to kill everybody, they don't want to join your group, they just don't. And they say it's the end time and Jesus is going to come back and they give up, okay? But if you tell people who live in crisis about the opportunity, they get very excited. So we started telling people about the idea of green-color jobs for their kids, that we could put low-income urban youth to work putting up those solar panels. The President signs a law, the President's not going to put up one solar panel, the President's not going to weatherize one building. Your kid could do that. And we got instant cooperation and support across the board.

So I think what we've got to do is stick to the positive. I do think we're going to have to get the government to help the markets and help the technologies work. Government has to be involved. We need a political movement that includes

everybody. But if we go to people who have crisis and tell them about the opportunity, we can expand this coalition to include the people who need this green wave to lift all boats.

Tom: Van, let me ask you a question.

Van: Yeah.

Tom: If you could ask one thing of the Google founders and Google.org that would help the green-collar movement, what could they do?

Van: Well, I think the most important thing is that these--we tend to have these conversations and I go to a lot of these meetings, and it's all about the technology and it's all about the entrepreneurs, and that's great. But what about the workers? If you go to your--if you have this standard that says we want 3 cents, that's the outcome, and we also want X number of jobs. Tell us how we're going to be able to get X number of jobs out of your innovation and we'll make that a part of what we celebrate. You suddenly have changed this conversation because people aren't just thinking, oh, it's good for the polar bears, they're saying maybe it's good for me and my child.

Tom: Thank you, thank you. Yeah? I'll get to everybody. Over here.

Jeff: Hi, I'm Jeff Jarvis and I just blog at buzzmachine.com. I'm hearing a cultural shift here which goes right after what Van just said and what you said a little earlier, Larry, that so much of the movement tells us what we should not be doing. You were talking about what we can and should do and will do, and I think that's essentially different in the message. It goes back to what you said at the beginning, Larry, about how good a job we're doing getting the message out. So if you take that essential message of saying, okay, there's things we shouldn't do, fine, but there's all these things we can do and should do the technology will bring us. That, I think, requires lobbying for investment, it requires PR to get the people to understand the need for investment, it requires education. How much does that fit into--is that your job or [inaudible] the technology? Where does the lobbying and the information and the education come in?

Tom: Can I just add one thing to that, Jeff, which is a really important point, because Al Gore and I were talking about this on the way over. I don't think people fully appreciate what a number Exxon Mobil did on this debate, because basically what they did is that they made the debate between no climate change and Al Gore. So Al was out here at one extreme and no climate change was here. Well, in fact, Al was actually at the center, and the real debate is between kind of Al and Al, which is Al in the center, or actually much worse climate change, which is what we're now seeing. And that's why I keep coming back to this issue. To name something is to own it. They own that debate still, and what are we going to do to rename it?

Larry Brilliant: Well, it's not just Exxon Mobil, it's not just that issue. The coal industry in the US has just launched a $50 million television campaign, the Coalition for Fair Energy...

Tom: [Inaudible], yeah.

Larry Brilliant: Yeah, Clean Coal(?). Well...

Tom: They're running now.

Larry Brilliant: They don't have a name Clean Coal, they've got a name which sounds like peace, motherhood and God and apple pie. That's what--the name that they've used, but it's not what they're doing. They're trying to persuade people that--just keep using dirty coal for a little while, we'll clean it up. That's really what they're trying to say. And we don't want to--I think that the issues become far more manageable when we deal with issues of getting the information out there. Everybody's got to play a different role. Van can play one role, John Doerr, one of our leaders, plays one role, Al plays a role. I think our role is best played by getting all the information out there in any way that we possibly can, because when everyone has that same amount of information, not everybody, most people are going to make the right decision, and that's what I believe in.

Tom: But what happens when you're up against people whose motto is, do harm?

Larry Brilliant: You--those people have _____.

Larry Page: [Inaudible] have the gigawatts, for example. _____ say we could buy a data center at roughly the same cost as we could get it from coal, we will go do it, and we could invest the capital to do it. You don't have those alternatives. And if you did, everybody would do that.

Tom: So if you build it, they will come.

Larry Page: Yeah.

Tom: Al, go ahead.

Al: I wanted to gently take issue with something you said, Larry. Getting all the information out there and letting people see all the facts and make up their minds, that generally works. I think that's the way the world used to work. I don't think it works that way anymore. And the reason why the tobacco industry was able to continue killing people for 40 years after the Surgeon General's report of 1964 is that they understood that, as against the enlightenment model of putting the facts on the table, seeking the best evidence, having a reasonable debate, appealing to

the rule of reason and letting people make their minds up, they understood the power of strategic persuasion. And they went about it in a very careful, organized and well-funded way, and the memoranda that have come out in these lawsuits that go back 40, 50 years now, make it very, very clear that they knew exactly what they were doing.

Now, the information ecology of modern society, especially in a country like the United States, makes us vulnerable to strategic persuasion campaigns if the other side assumes that all we need to do is put the facts out there, let people make up their own minds, let's have an open debate. That's not--it just doesn't work that way. Just yesterday there was a report on the run-up to the invasion of Iraq, with identified 975 false statements in a concentrated period of time, with the same means(?) used intentionally by the administration. Again, I'll give the same disclaimer I did in the earlier session. I've lost my objectivity, so take it with a grain of salt. But this was a strategic campaign. Now, on global warming, on the climate crisis, Exxon Mobil is only one of those involved. The Southern Company, there are a bunch of them. They spend a lot of money. This current $50 million advertising campaign, they're sponsoring the debates among the candidates, okay? And Exxon Mobil has funded 40 different front groups that have all been a part of a strategic persuasion campaign to, in their own words, reposition global warming as theory rather than fact.

Now, we can bemoan this and we can continue to assume that all we have to do is to get the facts out there and people are capable of making up their own minds, or we can counter it with a strategic persuasion campaign that is based on the truth and get that out there. I have long since come to the conclusion that that's what's needed, and that's when I formed this Alliance for Climate Protection, bipartisan, not endorsing any candidates or any political party but to take them on, goddammit.

Q: I'm _____ from Zimbabwe. We have always tried to make sure when we debate poverty we include poor people in the debates. I want to push a couple of paradigm shifts that are required for there to be no tension between the poverty debate and the climate change debate. The first one is to say there must be, and there is, a business case to address the climate change debate. The second paradigm shift, Africans, poor people, must take responsibility for their own circumstances. In Africa we're moving away from the blame game. We are responsible for the chaos in Africa, must take charge of our lives. Paradigm shift number three: Move away from aid to economic investment. We want investment in Africa. Teach us how to fish, don't give us fish. Paradigm shift number four: Move away from commodity-based economics to manufacturing, to processing, to value addition. That's what we want so that there's no tension between the eradication of poverty and climate change. Paradigm shift number five: [inaudible] from the University of Michigan, the bottom of the pyramid. The economics can't be the same. You need to be creative and innovative around the

bottom of the pyramid -- technology, volume-driven strategies. How you service commerce(?), how you service Zimbabwe, how you service poor communities requires innovation around volume, innovation around technology -- clean technologies, clean fuels -- so that we can leapfrog from the _____ where we are to _____. We need to also make a shift.

I think that we are so much obsessed about national sovereignty. And I want to tell you this, and I've already said my views to Vice President Gore. You can't address what you're trying to do if you're obsessed with national sovereignty. We need a strategic shift from national sovereignty to global sovereignty to collective humanity. What are we doing to move ourselves towards global sovereignty and collective humanity? Thank you.

Tom: Did you guys want to say anything on that?

Larry Brilliant: I would just say one thing about what Al Gore said. First, it's--under any circumstances, it's wonderful having a conversation with you, whether we agree or not. But we do agree, and you know that. We attended a meeting together in Aspen -- in fact, John was there as well -- and it was a very depressing meeting. We'd just seen the latest results of the IPCC, we'd just seen some of the devastating increasing of acceleration of climate change. That meeting--probably if it concluded on two things, it was, one, we needed a tax on carbon. The other, we need a total change in human consciousness. Now, one of those is easier to accomplish that another, but I'm not sure which one of them. And in this debate--and I think your analysis was exactly on, and I so much appreciate your passion. The question, though, is, each one of us has got to find a role that we can uniquely play. You have to look where you stand. What Peggy's(?) got is 100 years of moral credibility to bring to the battle with the Rockefeller family. Somebody else may have analytical capability. Others might really have political power. Some might have scientific excellence or technological competence. I ask each one of us to look at our own assets. Don't do a net worth statement, do a self-worth statement and see how you can contribute what fits you, and what you do may not fit somebody else.

Tom: Oh, I'm sorry, John.

John: This will turn the conversation around a little bit. But if the equation is RE<C and we say that raising C can help accelerate that, and that raising C is -- this is the thesis of the question -- is in policy and politics, I'd like your permission to pose a question to Tom Friedman, who's writing a book about this and is a world expert on politics and(?) policy globally. What's your prescription? How the hell are we going to get the policy to be heart attack serious and to be done quickly and effectively before, as Al has warned us [inaudible]? I think I know about the RE less, the innovation on the technology. It's the policy that...

Tom: Well, I think [inaudible].

John: You've talked about politics and policy.

Tom: I just would say that I think--and Al and I were talking about this in the car over. This is a--I guess I need [inaudible]. This is a really unique problem, which is that historically the environmental movement has really been about stopping things -- stopping pollution, stopping acid rain -- and actually social reform movements historically have been about stopping discrimination against women, stopping discrimination against Blacks. This is a very different challenge. We actually have to have a mass social movement that gets the government to put on a tax, to set a price on carbon. It's an unprecedented thing -- social movement. But I like the way Al's really been talking about it. And I think, again, language is so important that this has to be a social movement for an investment in our future. If it's a social movement for a tax, that's going to be a really hard sell. But if it's a social movement for an investment, and that's really what Larry and Sergey and Larry have been saying, that if we can reframe this, it's how do we invest in our future? Because we can talk about everything here. Without a price signal, you will not have scale. Without scale, you have a green hobby. I like to build model airplanes for a hobby, not try to get a gigawatt of clean energy.

Larry Page: Can I add one thing to that, though? I mean, I think that's well worth doing, getting the C part up, but I do think there's a pretty obvious path to getting the RE part down a lot. And in order to solve some of the development issues, we really need cheaper energy. And so if you just increase C--if you could wave your hands today and increase C a lot, you should do that, but that's actually not the only thing we need to do. Even if you accomplish doing that, you've really missed something important, which is that we really want everybody to have a lot of energy.

Audience: [Inaudible]

Larry Page: Okay, yeah. No, I agree. But I think that if there's one thought I want to leave people with, though, it's that I think the number of people in the world that are trying to make RE really small is very, very small. Like, we could probably fit them all into this room. And that's a really serious problem. If we make that--if we make it go from 100 to 10,000 people, we're going to make a lot more progress.

Sergey: But just to quickly add, I do think we need policy work just to make RE smaller or to not increase it. The tariffs on the [inaudible] is the real issue, the inability to put up windmills because [inaudible] off the coast of Nantucket they don't look so pretty. All those things are real obstacles and we need to get rid of those, too.

Larry Page: Just--our buildings, too. We have to attach the panels to the right building or we can't meter it into the grid and they won't let us connect to it, and this stuff's

garbage. So some of the--I think what Sergey is saying is to get real fast action on these things. You've got to be able to connect stuff to the grid without it taking two years and stuff, and that's a policy issue.

Larry Brilliant: And one small thing, just to remind us what we already know. If you're looking at RE<C, it's all over the world, so you might be able to affect the price of coal by internalizing it in the United States. If you don't affect that formula in China or India, you're really winning a Pyrrhic victory. We have to have RE<C in those countries.

Tom: Peter?

Peter: Just one data point, Al, that suggests maybe you've been more successful than you know. In California, a recent public survey on concern about climate change, four out of five Californians are willing to support strong action on climate change, not broken down by party but by level of knowledge. That is, the four who are supporting it know more than the one who doesn't, and so it really is in part a matter of knowledge. Now, that is in part because of you, because of our Governator in California, who's done a pretty decent job of educating the people of California. So it does suggest that at least some effort at informing the public may actually have some genuine political consequences so that we have a real consensus in California on action. And so I think what you're doing to bring the message to people already is having that kind of impact.

Al: But here's a crucial distinction. What you say is absolutely right, it's the result of a lot of hard work on the part of many, many people. But even though the polls show that increase in changed opinion, here's the bad part of that. When you give the American people a list of 25 issues and you ask them to order them in rank priority order, climate is still not above 23 on the list of 25. So there's a difference between changing opinions and changing the sense of urgency. And that's--we need a strategic mass persuasion campaign focused on getting that up to the top of the list. That happened in Australia, and that's why Kevin Rudd was elected. It needs to be--it needs to happen in the US and elsewhere. And to make it global, that's what Copenhagen is all about. In December of 2009, Copenhagen marks the culmination of the global process where--and that's the policy framework within which RE<C can be locked in globally.

Tom: Please? The lady behind you, I'm sorry. And please identify yourself.

Toshiko: My name is Toshiko Mori. I'm an architect. I'm a chair of a department of architecture at Harvard. And I have this issue about how to represent this information to make the knowledge more accessible to public not only for this country, because the earth may be flat, but I think it's dynamic. It's a very different world now, thanks to all the issues brought up by climate change, poverty issues. We have to come up with a different model to inform the public.

As an architect, we see buildings as organic elements connecting many different dots. Issues are incredibly atomized(?)-- issues of food to poverty to disaster to climate, how--the light bulb to polar bears. It's so diverse. And I think the problem is that people cannot see the whole picture and connecting millions of dots. And what I propose what Google can do with its search engine capability is, can you come up with a dynamic model, simulation model, which may be more visual so that everybody can see when they actually understand, what about this one seed(?) in Africa? How does it affect everything else? And people can see immediately how everything is interrelated. It's a different, different world, and I think that's why we are suffering from this and that's why people don't understand. If you show this model to politicians, they will get it immediately, because it's all about improving the quality of life, and that is common issue globally. And I think this gap of how to disseminate information is missing, and I hope that Google can come up with a very powerful engine and very creative way to deliver dynamic world message.

Larry Page: I think it would be great to have some of that capability in Google Earth, where you could actually see simulations of what's likely to happen and how it affects different people and all those things.

Sergey: We should mention there are already layers in Google Earth that do some of those things. For example, you can look at the effects of sea level change and you can simulate one meter, three meter rise in sea levels, and it's very dramatic, obviously. You can see renewable projects around the world. So we do have some of those pieces already.

Audience: [Inaudible]

Sergey: That's true, we don't have a global simulation that connects it all.

Tom: [Inaudible]. Oh, I'm sorry. And then you [inaudible].

Matthew: Very quickly, Matthew Anderson from BSkyB in the UK. There's one opportunity that I'd also like to add to the table, and that is that each year marketers spend about $.75 trillion on advertising and marketing. That is a huge multiple at 50 million for coal, and the chance to mobilize customer bases is huge. The crisis we have from a consumer perspective is lack of choice. It's very hard to buy products that are exciting that are cleaner. So I really think that, particularly with your relationship with advertisers, which is so important, and your relationship empowering consumers to make choice at that level, you have a wave that's in the trillion-dollar scale. As a young global leader, we've just written a book that has 15 case studies of companies that have cut carbon, increased profit, and now are creating a multiplication factor through their customer base. And I think this is a great new lever that I hope we also embrace, that business has a role to play not

just on big-scale things, not just on telling people to change their light bulbs, but in really accelerating customer choice through the system.

Larry Page: We can have little ads that are green.

Q: _____ from _____. We are in renewable energy. I just wanted to add two points to this important debate about poverty and climate change, and this is because we know that to reduce poverty, we need energy _____. And there are two very important elements. One, there is still 50 percent of the population in the world and probably more in--poor population in villages, and the whole movement from a village to town _____. Everybody in the village, for the same level of living, needs much less energy than when he moves to a slum in a town. So I think this is a point which is very important to address. How do you do it by improving the standard of living in the village? You will need much less energy. Two examples. One example is cooking. Cooking is deforestation. Introducing a solar cooker, which has been tried for at least 40 years, there is a social problem. People in Africa cook at night in the villages. Of course, this is--for the women, it's a _____ problem. But--so you need anthropologists, you need social workers, to convince people to cook during the day. It's not a question of money, it's really not expensive. And the other was mentioned, of course -- seeds -- because they have to cut more trees because they have _____ agriculture. Thank you.

Tom: We have to close it down, so I don't know if you want to answer that or if you guys want to say anything in closing.

Larry Brilliant: Well, first of all, this was a wonderful conversation, and the best part of it is not the people up here, it's the people there. It's really wonderful from this perspective to hear what you guys say and to feel the passion and commitment in the room. I don't think that would have been the case five years ago. So thank you guys.

Sergey: And just one item I'd like to add. We're trying to do our bit and we're optimistic about RE<C and the investments we're making. But this is obviously a global challenge, and there are so many people here and other places doing really great and important work. I don't think that--I think we're really a drop in the bucket, and I really appreciate what everyone's doing.

Larry Page: Thank you.

Tom: Thank you very much.

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