

BEFORE THE  
CALIFORNIA ENERGY COMMISSION

In the matter of, )  
 )  
Joint IEPR/Federal Stimulus Program) Docket No. 10-IEP-1I  
Program (Ad Hoc) Committee Workshop)

CREATING THE NEXT INDUSTRIAL REVOLUTION

CALIFORNIA ENERGY COMMISSION  
HEARING ROOM A  
1516 NINTH STREET  
SACRAMENTO, CALIFORNIA

THURSDAY, JULY 22, 2010  
10:00 A.M.

Reported by:  
Kent Odell

## COMMISSIONERS:

Karen Douglas, Chairman

Anthony Eggert

David Hungerford, Advisor to Commissioner Eggert

Jeffrey D. Byron

Laurie ten Hope, Advisor to Commissioner Byron

## STAFF

Suzanne Korosec, IEPR Lead

Larry Rillera, Moderator for all Panels

## PANELS (Via WebEx)

## Panel 1: Policy Perspective

Dorothy Rothrock, Vice President - California Manufacturing  
and Technology Association

Marty Keller, Deputy Director, Small Business Advocate -  
Governor's Office of Economic Development

Bob Hines, Vice President - Silicon Valley Leadership Group

## Panel 2: Business Perspective

Lisa Bicker, President and CEO - Clean Tech San Diego

Gary Simon, Vice President - Sacramento Area Regional  
Technology Alliance

## Manufacturers Reps:

Brian Sager, Vice President of Corporate Development -  
Nanosolar, Inc.

Michael Deck, Chief Financial Officer - Soliant Energy, Inc.

Mike Ryan, President - Green Vehicles Inc.

Panel 3: Financing Perspective

Larry Rillera, Clean Energy Financing Manager - California Energy Commission

Paul Frankel, Vice President - California Clean Energy Fund

Nini Redway, Deputy Director - State Treasurer's Office

Mike Rizzo, Senior Vice President Emerging Business Banking  
Five Star Bank

Roma Cristia - Plant, Assistant Executive Director -  
California Infrastructure and Economic Development Bank

Panel 4: Government Perspective

Brook Taylor, Assistant Deputy Director of Policy and  
Research - Governor's Office of Economic Development

Carrie Rogers, Vice President of Business Assistance &  
Development - Los Angeles County Economic Development Corp

Kelly Pretzer, Director of New Media/IT & Cleantech - Office  
of Economic and Workforce Development

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## P R O C E E D I N G S

1  
2 JULY 22, 2010

10:08 A.M.

3 MS. KOROSSEC: All right. Good morning, everyone. I  
4 think we are going to go ahead and get started. I am  
5 Suzanne Korosec. I manage the Energy Commission's  
6 Integrated Energy Policy Report Unit, and welcome to today's  
7 workshop on Clean Energy Manufacturing in California. This  
8 workshop is being held jointly by our Federal Stimulus  
9 Program Committee and our Integrated Energy Policy Report  
10 Committee. Just a few housekeeping items before we get  
11 started. Restrooms are out the double doors and to your  
12 left, out in the atrium, there is a snack room at the top of  
13 the stairs in the atrium on the second floor, under the  
14 white awning, and if there is an emergency and we need to  
15 evacuate the building for any reason, please follow the  
16 staff out the door and to the park that is kitty corner to  
17 the building, and we will wait there until told that it is  
18 safe to return.

19 Today's workshop is being broadcast through our  
20 WebEx Conferencing System and, so, parties need to be aware  
21 we are recording the workshop. We will make that audio  
22 recording available on our Website a couple of days after  
23 the workshop, followed by a written transcript in about two  
24 weeks. We have a number of presentations today and we will  
25 have an opportunity for Q&A after each panel presentation.

1 We will also have an opportunity for more general public  
2 comment at the end of the day; at that point, we will take  
3 comments from those of you here in the room first, followed  
4 by the folks who are participating via WebEx. For those of  
5 you here in the room, we do ask you to come up to the center  
6 podium and use the microphone so that we can make sure we  
7 capture all of your comments in our transcript, and also  
8 that you give our Court Reporter a business card so that we  
9 can make sure your name is spelled correctly.

10 For those of you joining us through WebEx, we  
11 welcome the 20 or so, I believe, that we have so far  
12 listening in. You can use the chat function at any time to  
13 let our WebEx Coordinator know that you have a question or a  
14 comment, and we will make sure to open your line at the  
15 appropriate time, or read your question to the presenter.  
16 We do ask the WebEx commenters to speak loudly and clearly  
17 on the phone, we are having a little problem with our WebEx  
18 system where it is a little bit hard to hear, so please try  
19 to speak up. We are also accepting written comments until  
20 the close of business on July 29<sup>th</sup>, and the Notice for  
21 today's workshop, which is on the table out in the foyer and  
22 also available on our Website, explains the process for  
23 submitting those written comments.

24 Today's workshop is the fifth of six workshops that  
25 we are holding as part of the 2010 Integrated Energy Policy

1 Report, or IEPR Proceeding. Our first workshop covered  
2 transparency and accountability of ARRA funds for energy-  
3 related projects in California; our second workshop on July  
4 8<sup>th</sup> talked about local, regional and state government energy  
5 efficiency retrofit efforts that are being funded by ARRA;  
6 the third workshop focused on how the Energy Commission is  
7 using its existing AB 118 and PIER funding to help leverage  
8 ARRA funds, to help grow our Clean Tech sector; yesterday,  
9 we focused on various clean energy and workforce training  
10 activities that are going on in California, and the  
11 challenges and expected results of those endeavors.

12 Today, our topic is Clean Energy Manufacturing: what  
13 is the current status, the effects ARRA funding will have on  
14 the status quo, and we will also provide an overview of the  
15 Energy Commission's Clean Energy Manufacturing Program, that  
16 will be providing financial support to businesses,  
17 technology developers, vehicle fleet owners, to encourage  
18 the manufacture of clean energy technologies and fuels. And  
19 we would like to hear from stakeholders on whether that  
20 program is helping, is it doing enough, not going far  
21 enough, and if not, what else do we need to be doing?

22 Finally, in mid-August, we will look at the effect  
23 of ARRA funding on increasing the energy efficiency of  
24 existing buildings in California, consistent with our goal  
25 to achieve all cost-effective energy efficiency in the

1 state, and how those efforts are going to fit into our  
2 future energy policies, as well as future Federal efforts to  
3 stimulate energy efficiency throughout the United States.  
4 More information on that final workshop will be provided in  
5 a Notice that will be posted approximately 14 days prior to  
6 the workshop, with an agenda to be posted a couple of days  
7 before the workshop.

8           Just some very brief background on the IEPR itself.  
9 We are required by statute to provide an IEPR every two  
10 years that covers California's energy markets, energy  
11 supplies, demand, production, delivering distribution, and  
12 market trends, and makes policy recommendations to the  
13 Governor. The report is prepared every two years, in odd  
14 numbered years, and in the intervening years we provide an  
15 update, that is what the 2010 Update is this year. With the  
16 large influx of ARRA funding into the state, the IEPR  
17 Committee has chosen this time to focus the 2010 IEPR on  
18 examining the impacts of that funding - the benefits, the  
19 challenges, and the energy policy implications of this large  
20 investment of Stimulus funding in California's energy  
21 sectors, and how these funds are going to help us achieve  
22 our energy and our environmental goals.

23           Today's workshop will consist of four panels with  
24 presentations by each panelist, followed by an opportunity  
25 for Q&A. Panel 1 this morning will cover policy

1 perspectives and will include the California Manufacturing  
2 and Technology Association, the Governor's Office of  
3 Economic Development, and the Silicon Valley Leadership  
4 Group. Our second panel will provide the business  
5 perspective and will include representatives from Clean Tech  
6 San Diego, the Sacramento Area Regional Technology Alliance,  
7 Nanosolar, Soliant Energy, and Green Vehicles Inc. After  
8 lunch, our third panel will cover Financing Issues and will  
9 include the Energy Commission's Clean Energy Financing  
10 Program, as well as representatives from the California  
11 Clean Energy Fund, the State Treasurer's Office, Five Star  
12 Bank, and the California Infrastructure and Economic  
13 Development Bank.

14           Finally, we will look at Government perspectives  
15 with the Governor's Office of Economic Development joining  
16 us again, along with the Los Angeles County Economic  
17 Development Corporation, and the Office of the Economic  
18 Workforce Development. We will then end the day with an  
19 opportunity for public comments. So, now I will turn it  
20 over to the Commissioners for your opening remarks.

21           CHAIRMAN DOUGLAS: Thank you, Suzanne. We are  
22 excited to be here today. I personally have been looking  
23 forward to this workshop quite a lot. This is the first  
24 time that the Energy Commission has ventured into the  
25 territory of providing funding for manufacturing facilities

1 for the construction or expansion of clean energy  
2 manufacturing in California. We jumped in with both feet.  
3 We are providing programs for both through ARRA funding and  
4 also through AB 118 funding, and we have had to do a  
5 tremendous amount of learning and a tremendous amount of  
6 work to put these two programs into place, but we felt as  
7 though the goals of ARRA and also the goals of AB 118 would  
8 be greatly furthered by our moving forward into this area.  
9 We set up low interest loan programs, our hope and  
10 expectation is that those programs will remain in place and  
11 will be an incentive to help manufacturers locate in  
12 California, expand in California, and improve their  
13 operations in California for a very long time to come, so we  
14 are very excited about this program. We also initially were  
15 concerned, or were worried, or wondered what the uptake  
16 would be for this program. We really did not know when we  
17 launched this program what \$5 million or less, speaking of  
18 ARRA, of low interest loans would mean to manufacturers. We  
19 did not know, given the Federal reporting requirements and  
20 the other requirements coming with ARRA whether we would  
21 have a line around the block, or an empty mailbox when the  
22 solicitation deadline arrived, and we had had enough  
23 conversations with the clean tech community to be confident  
24 that the mailbox would not be totally empty, but when you go  
25 through the requirements that we have, reporting, NEPA,

1 SHPO, it definitely narrowed the field of what we were able  
2 to do, at least with these dollars. We were immensely  
3 pleased with the results, with the interest we saw in the  
4 real applications and the results that we have gotten from  
5 this program. And while that is still underway and we are  
6 moving as fast as we can in our state agency fashion to get  
7 this going, and to get this money out on the street, and  
8 have these jobs appear in California, it makes it abundantly  
9 obvious how much more could be done, and how much need and  
10 demand there actually is out there, and how much benefit can  
11 be created from this relatively small investment and low  
12 interest financing at a time at which we all know that  
13 financing is a major barrier to these kinds of facilities.  
14 So we are very pleased that we ventured down this path. We  
15 want to learn from this experience and we have had to learn  
16 a lot to get to where we are, and we want to be here to  
17 stay, and we really want to keep these programs around and  
18 continue to be able to provide this kind of support. So I  
19 am very interested to hear from all of our panelists today,  
20 and please, let us know what has worked, what is not  
21 working, how could this work better, what are other needs  
22 that are out there that we are not addressing, but maybe we  
23 could address? What do you see as some of the high leverage  
24 opportunities in the state for us to make the clean energy  
25 manufacturing a reality in California. And it is a reality,

1 but for us to keep it going, and to grow as much as we think  
2 we have the potential to grow here. So, welcome, thank you  
3 for being here.

4 Let me introduce everybody else at the podium and we  
5 will have other comments. To my immediate left is  
6 Commissioner Eggert, he is the Associate Member on the  
7 Federal Stimulus Committee and the Presiding Member of the  
8 Efficiency Committee. We had applications in both the  
9 Energy Efficiency and the Renewable Energy Area for  
10 different kinds of manufacturing, and so we are obviously  
11 very interested in both. To Commissioner Eggert's left is  
12 David - what has happened to me -- Hungerford, who I have  
13 known well for many years, and he is Commissioner Eggert's  
14 Advisor. And to my right is Laurie ten Hope, who is  
15 Commissioner Byron's Advisor. Commissioner Byron is not  
16 able to be here, he is, however, in Silicon Valley  
17 addressing a very similar constituency about very similar  
18 issues, probably as we speak. And so he regrets not being  
19 able to be here, but as I told him, sometimes the public is  
20 not necessarily best served by all three of us sitting here  
21 in Hearing Room A when the state is big and there is just so  
22 much ground to cover, and so many people we want to connect  
23 with, and who we want to learn from and talk to. So,  
24 Commissioner Eggert, opening comments?

25 COMMISSIONER EGGERT: Thank you, Chairman Douglas.

1 It is also my great pleasure to be here and I want to thank  
2 all of today's participants taking time out of your busy  
3 schedules, time away from the investment in California to  
4 provide your input and lessons and counsel to us as we  
5 develop these programs. Just to reiterate, I think, a  
6 couple points, you know, we are kind of at the cusp here of  
7 what I think is a very exciting transition in the California  
8 economy. We are seeing investment coming to the state in  
9 the area of clean energy, energy efficiency technologies,  
10 both in power generation and energy efficiency and in  
11 transportation, in particular. I also serve on the  
12 Transportation Committee, which oversees AB 118, and we are  
13 seeing a lot of really excellent activity. And as we are  
14 sort of structuring these programs, manufacturing is a  
15 really challenging arena to play in. I think we have to  
16 recognize that we are as a government partner to the private  
17 sector really a bit player, even though we have tens of  
18 millions of dollars, this is a many multi-billion dollar  
19 sector, and so we really have to think strategically about  
20 how we are going to leverage our investments with the  
21 private sector, and partnership with the private sector, if  
22 we are going to transition these companies into commercial  
23 operations. So, one of the questions I have is also along  
24 the lines of what are the most promising and highly  
25 leveraged financial instruments that we might use to do

1 that. We do have the ability to use a variety of different  
2 grants and loan instruments, even within the loan sector.  
3 We have been having conversations about what types of loans,  
4 what types of lending institutions we should be partnering  
5 with, and how all of those, I think, are still ongoing  
6 discussions that we are having internally as we move these  
7 programs forward. And then I guess, you know, my last point  
8 is just that, you know, if you look at the magnitude of our  
9 policy goals, whether it is our energy or environmental  
10 goals, including climate change, I think most of the  
11 analysis that has been done suggests that we can meet the  
12 needs of those goals while continuing to grow our economy,  
13 but we really are going to have to sort of shift the  
14 trajectory of investment towards clean energy technologies,  
15 towards energy efficiency, towards those types of  
16 organizations and industries that are making the investments  
17 in these new technologies. So, how do we as a state help  
18 facilitate that transition and do it in a way that continues  
19 to sustain a vibrant economy? So, I think with that, I will  
20 turn it back and look forward to the discussion.

21 MS. TEN HOPE: You basically covered my comments.  
22 Commissioner Byron regrets not being here. He is at the  
23 Clean Tech Open in San Jose, very interested in the topic,  
24 dear to his interests and will look forward to reading the  
25 transcript.

1 MS. KOROSSEC: All right, with that, I will introduce  
2 Larry Rillera, who is going to act as our Master of  
3 Ceremonies today, and also our Moderator for all of our  
4 Panels. Larry?

5 MR. RILLERA: Great, thank you, Suzanne. Thank you,  
6 Commissioners, participants. I am very pleased to present  
7 today's different panels, lists and discussions that will be  
8 providing significant perspective on an industry the  
9 Commission is very engaged in growing. With that, let's  
10 jump right into it. Dorothy Rothrock with the California  
11 Manufacturing and Technology Association. Either way,  
12 Dorothy.

13 MS. ROTHROCK: Pretty comfy right here. I just want  
14 to follow your directions. Thanks so much for inviting me.  
15 I appreciate the opportunity to talk to folks that want to  
16 help manufacturing. As you know, I spend most of my time as  
17 a Lobbyist at the Capitol, and it is sad to say that most of  
18 the time is spent trying to get them to do no more harm to  
19 Manufacturing, at least from our point of view. But there  
20 is, at the same time, in the Legislature and elsewhere in  
21 State Government, lots of interest in seeing Manufacturing  
22 grow, so there is sort of, I have to say, kind of a  
23 schizophrenia going on right now because everybody knows the  
24 value of manufacturing, including Clean Tech Manufacturing,  
25 but Manufacturing generally, but yet people are grappling

1 with just how do we get it back at the same time we are  
2 trying to meet all of our other goals? So, I appreciate the  
3 observation, Karen, that you made, that you got a small  
4 piece to provide, but it is a huge industry, it is a huge  
5 sector of the economy, and it will be driven by forces that  
6 perhaps are beyond all of our control, but yet we really do  
7 need to understand them. So, that leads me into what I  
8 would like to do today is just go through some slides that  
9 give you some background and some perspective from our point  
10 of view at the Manufacturers Association, and then, at the  
11 last slide offers up a few things that we think are the key  
12 to Manufacturing, generally, and then maybe in Q&A we can  
13 get more into what Clean Tech is all about.

14 So, the first slide, please, is of course the  
15 Manufacturing drop since 2001. I think Marty is going to  
16 have a little bit more, going back further, but just  
17 briefly, no question about it, we have lost about 635,000  
18 manufacturing jobs since 2001. That is more than we should  
19 have lost. We know that Manufacturing has declined in the  
20 US, generally, but the second slide shows that we are losing  
21 more than we should. We have lost 34 percent compared to 11  
22 percent for Nevada, for example; Texas has lost 23 percent.  
23 Go to the next slide, please.

24 We have done a breakdown to kind of show what that  
25 means when you lose Manufacturing and if you look at the

1 slide, you will see that on the top half, we have our losses  
2 and the average pay of those lost jobs is about \$69,000, and  
3 you see them broken down in some of the industry sectors,  
4 Manufacturing, the top line, is the most significant, the  
5 losses are there. Then, if you go down to the bottom half,  
6 you will see that the average pay on gained jobs is just  
7 \$43,000, so we are becoming poorer in the Middle Class, and  
8 that is not a good trend. Our tax structure, just for  
9 interest sake, does not really kick in, you do not really  
10 participate in the personal income tax until you are above  
11 that \$43,000 level in a family, so you will see that fewer  
12 and fewer people are going to be contributing, at least on  
13 that level, to the state if we continue this.

14           Next slide please. This is just a brief kind of  
15 summary of what we think some of the biggest cost pressures  
16 are. California Manufacturing competes in global markets  
17 and costs really do matter because, if you cannot compete,  
18 you cannot compete and you are out of business. Comparing  
19 to the rest of the country, we have a premium on wage cost  
20 of about 13 percent, 15 percent more in taxes. Energy rates  
21 are a particular problem for California manufacturers, 33.4  
22 percent is kind of a commercial industrial blend, but when  
23 you look at industrial electric rates, we pay a significant  
24 premium, 53 percent higher than the national average. Let's  
25 go to the next slide. This is a recent assessment we have

1 done, it is a little bit busy, but there is a lot of content  
2 here that is fun to look at. We looked at new and expanded  
3 manufacturing facilities across the company, and we found  
4 that, on a per capita basis, California, since 2007 to 2009,  
5 so we just looked at the most recent few years, we have 3.7  
6 new or expanded facilities per one million people. That  
7 compares to a national average of 28.7. Texas sits at 24.5.  
8 You will see some of the other states at the higher end,  
9 Missouri, Kentucky, Tennessee, Alabama, those states for  
10 whatever reason are getting more expansion and more start-  
11 ups. So, what is going on here? California has 11.7  
12 percent of the US Manufacturing workforce, but we are  
13 getting only 1.5 percent of the new and expanded facilities.  
14 These new and expanded facilities, that are the source, you  
15 know, the Petri plate for whatever it is that you are going  
16 to grow your future, and it does not look good that we are  
17 not planting those seeds. Sorry for the mixed metaphor,  
18 yeah, I am not a farmer - harvesting? I do not know.

19           Okay, let's move on. I think this is somewhat of a  
20 restate, but it goes back further in time, and I think this  
21 is fascinating, so join me here. You go back to 1990 to  
22 1994, again, new and expanded manufacturing facilities. It  
23 was not super great then, either, 3.4 percent, so the  
24 decline has been happening for decades. But then, you get  
25 to '95 and '99, and you know what happened there, we had a

1 huge sort of tech boom, and we were up at the peak in those  
2 years to 11.1 percent, so we had our fair share in that year  
3 for that peak year, I guess it is 1999, you can see it is  
4 very faint. But, in average, about 7.7. But that was huge  
5 for California. Then, you get up to 2004 and we are back  
6 down to 3.6, and now we are really down, to 1.3. So, we had  
7 a spurt, and then it kind of fell off. But, I feel that a  
8 lot of people believe that that robust period in the '95 to  
9 '99, was kind of like normal, where there was sort of a  
10 trend up to that, and now this most recent decline is  
11 abnormal. But I think what we are trying to show is,  
12 looking at that 1990 to 1994, that is more normal, and we  
13 are back to normal, even lower than normal. And so it was  
14 kind of a freaky once in a lifetime kind of benefits that we  
15 got from what happened to Silicon Valley. Let's go to the  
16 next slide.

17           Venture Capital - there is a lot of conversation  
18 about how much venture capital California attracts, and it  
19 is certainly true, we have a lot of the firms here that run  
20 the capital venture money, and so, over time you see that we  
21 have got - see how the numbers are kind of falling off at  
22 the bottom there, but 1995 to 1999, you know, 40 percent of  
23 the US Venture Capital is in California, but during that  
24 same time, only 7.7 percent of the new manufacturing  
25 facilities. Again, big VC in 2000-2004, dropping, and then

1 again almost 50 percent the VC, we are still dropping. So,  
2 it is not really translating into the Manufacturing, which  
3 is what I really care about and what the topic is today.  
4 Let's move on to the next slide.

5           You had a meeting yesterday about workforce  
6 development. Manufacturers are highly concerned about this  
7 issue. The way we look at it, or what we are focusing on at  
8 Manufacturing Association is the role that career and  
9 technical education is playing in our schools, and sadly,  
10 increasingly playing less and less a role. In 1987, 73  
11 percent of California high school students participated in  
12 Career Tech classes, now that number is down to 29.1  
13 percent. The workforce of the future needs to be savvy,  
14 technically skilled, working in teams, flexible, math savvy.  
15 We are missing a lot of the skills that we need if we allow  
16 career and technical education to continue to decline. We  
17 are working a lot at the Legislature to try to turn around  
18 policies that we think are leading to this decline, but I  
19 cannot get into too much detail on that, but if you would  
20 like to know more, I would be happy to share it with you.  
21 Finally, the last slide.

22           We have a few recommendations on promoting  
23 Manufacturing. 1) Sales tax exemptions for manufacturing  
24 equipment, it is a tax policy right now that California  
25 imposes sales tax on purchases that manufacturers make for

1 new equipment. It is an input cost that we do not think  
2 should be taxed, in fact, nearly every other state in the  
3 country provides an exemption or credit, but California does  
4 not; 2) Reduce electricity costs. We have got to deal with  
5 this issue, it is way way too high for California industry;  
6 3) the skilled workforce investments we need to make; and 4)  
7 the last is kind of a plea or an urge, I have just got to  
8 put it on every slide, anything that we do that makes  
9 California more expensive or more difficult in labor laws,  
10 environmental laws, or whatever, we have to account for that  
11 on how it is going to impact manufacturing, and if we want  
12 to do it, we have got to find some other way to offset the  
13 cost. It is not a problem if we want to take an aggressive  
14 approach to something - the environment, health and safety,  
15 whatever - but we have got to understand the cost and we  
16 have got to find another way to offset it. If you do not,  
17 it is simply going to add to the premium of doing business,  
18 another reason for companies to say, "Why don't I just  
19 locate out of California, produce my product, and serve that  
20 California market from outside?" Okay? Thanks very much.

21 CHAIRMAN DOUGLAS: Why don't we finish the panel  
22 before we go to questions?

23 MS. KOROSEC: All right. Okay, I will go ahead and  
24 introduce our next panelist, Marty Keller, Deputy Director  
25 of Small Business Advocate in the Governor's Office of

1 Economic Development.

2 MR. KELLER: Good morning and thanks for the  
3 opportunity to share some ideas. I could not help but be  
4 struck, Dorothy, as you were sharing the information that  
5 you were, that we probably could spend the rest of the day  
6 just dissecting the information that you shared because  
7 there is such a wealth of important data points in there  
8 that we all need as public policymakers and facilitators, to  
9 dive into. And so I apologize in advance to the panel that  
10 I am going to add to that complexity. As a Small Business  
11 Advocate - if I could have the next slide - just to give you  
12 a quick sense of the role of the small business advocate,  
13 being a generalist, I am not a specialist in Manufacturing,  
14 the Small Business Advocate's job essentially is to help  
15 small businesses deal with state government. We do that,  
16 first of all, listening to what small businesses want and  
17 helping amplify their voice to policymakers. We have had a  
18 very collegial, cordial relationship with the Energy  
19 Commission on this and worked closely with your staff for  
20 the last couple of years to make sure that we are sharing  
21 with Larry and his team all the things that small businesses  
22 want to address to the Energy Commission and, in turn,  
23 giving the Energy Commission particularly since the advent  
24 of the stimulus programs that you have managed the  
25 opportunity to get that information out to small business

1 networks, as well. Next slide, please.

2           So, I would just plead in advance that I am a Jack  
3 of all Trades and a specialist in none, so the comments that  
4 I am going to make fall into three general categories.  
5 First of all, I want to amplify just a little bit on the  
6 statistics that Dorothy shared, to give us a little more  
7 granularity because I think it is really important. Not all  
8 Manufacturing is the same, and Californians make a lot of  
9 stuff. We make a lot of different stuff and we require a  
10 lot of different facilities and skills to make the  
11 complexity of products, goods and services that we create,  
12 consumed domestically or export to other states and  
13 countries. Secondly, I think it is also important that we  
14 take a look at the general global trends that manufacturing  
15 finds itself participating in. The world of manufacturing  
16 that California owners and employees face is incredibly  
17 different, even from that boom period, Dorothy, that you  
18 talked about in '95 to 1999. And the shift is only  
19 accelerating, so it is really critical to a public policy  
20 level that we find ways to keep an eye on this global  
21 context because the competitive nature of the global economy  
22 puts pressures and, at the same time, opens up opportunities  
23 for California manufacturers that policymakers may want to  
24 be taking into account.

25           I also want to talk a little bit about some

1 collegial experience that the Governor's Office of Economic  
2 Development recently had with our counterparts in the State  
3 of Michigan. The State of Michigan is facing even more  
4 severe challenges to its manufacturing base because  
5 manufacturing was - notice the use of the past tense - a  
6 much greater percentage of its economy than has been in  
7 California, even though we are both leaders as manufacturing  
8 states, and they have had a response to this that I think  
9 the Commission may want to take a look at as you deliberate  
10 on how to integrate your efforts with this greater expansion  
11 of funding that you are managing.

12           And, last, I just want to close with some  
13 observations about what we might all do to encourage support  
14 and love our manufacturing sector because the economy that  
15 does not make anything, the economy that does not make stuff  
16 that people want to consume, is an economy that is severely  
17 at risk to those that do that. So, if we could go to the  
18 first slide, I would appreciate it.

19           So, just again, a few more statistics, 720,000 firms  
20 that are considered by Federal definition "Small  
21 Businesses." And I am going to focus this a little bit on  
22 the small business sector of Manufacturing in California, I  
23 am sorry, this is not Manufacturing, this is all firms, all  
24 Small Businesses comprise 720,000 firms with employees, and  
25 2.7 million firms of sole proprietors and independent

1 contractors. Employee firms in Manufacturing total 40,500,  
2 which is 97 percent of all manufacturing firms in California  
3 are Small Businesses, again, using the Federal standard of  
4 500 or fewer employees. Those firms employed 797 people.  
5 These data, by the way, are from 2006. We do not have more  
6 recent data, the Federal Government compiles these and they  
7 are always three years behind, or more. And in the  
8 Manufacturing sector, there were 43,800 sole proprietors,  
9 individuals making stuff and selling it on the market. Next  
10 slide, please.

11 This graph looks at statewide employment in all  
12 industries over the course of the last 20 years. During the  
13 last 20 years, the state Gross Domestic Product rose roughly  
14 15 percent overall. The thick red line you see there in the  
15 center gives you the relative position of Manufacturing to  
16 all other sectors of the California economy by employment,  
17 so you can see the dramatic downturn over the past 20 years  
18 in employment relative to all other sectors of our economy.  
19 Next slide. The hard data, Dorothy referred to these  
20 earlier, the graph at the very bottom shows the whole  
21 numbers in the decline in state employment, 705,000 jobs  
22 lost in the last 20 years in the manufacturing sector. Next  
23 slide just looks at that as the percentage, that is a 36  
24 percent drop. Next slide, please. Also, it would be  
25 important for us to get a handle around the complexity of

1 the manufacturing sector, so this divides manufacturing  
2 between durable and non-durable goods. Durable goods are  
3 those which you expect to have a life expectancy of three  
4 years or more; non-durable goods are those that are not  
5 expected to last more than three years. And you can see,  
6 again, the dramatic decline is in durable goods production.  
7 The next slide breaks out durable goods and, not having been  
8 an expert in this, what I thought was the most compelling  
9 and possibly frightening statistic is that the single  
10 largest drop, in that line at the top, the orange, that is  
11 computer and electronic manufacturing. So, California, the  
12 home of Silicon Valley, the birthplace of the Information  
13 Age, has been rapidly losing its prominence as a  
14 manufacturer of the very equipment that is driving the  
15 worldwide transformation from an Industrial Age to an  
16 Information Age. Next slide, please.

17           These are the declines in the various sectors in the  
18 durable goods section, and I just offer these for your  
19 analysis over the course of your deliberations, to give you  
20 a sense of what the trends are. I have only one more slide  
21 to present, which was preserved for the end, and so I am  
22 going to be narrative going forward. One of the things, one  
23 of the data points that I looked for and I was unable to get  
24 in time for this, but I would like to continue to research  
25 that and ultimately supply you with, is what is the value of

1 that manufacturing output over the course of the last 20  
2 years. We know that there have been significant increases  
3 in productivity of those manufacturing firms and those  
4 employees over the course of those 20 years, so the offset  
5 and the decline in manufacturing jobs and manufacturing  
6 firms, I would like to be able to discover what is the  
7 offset, and maybe some of the panels following me have those  
8 data. Dorothy has it. What can you tell us?

9 MS. ROTHROCK: Well, I am sorry, I do not mean to  
10 interrupt.

11 MR. KELLER: No, please.

12 MS. ROTHROCK: What if we sustained manufacturing  
13 between 2000 and 2007? So the answer to the question, what  
14 if we kept the same level from 2000 to 2007, we would have  
15 had 1.6 million more jobs, \$101 billion more in output, \$75  
16 billion more in wages, and \$5 billion more in income tax  
17 revenue. This is from the Milken Institute, they have done  
18 a great report that I can provide to folks, and it is also  
19 online, it is *Manufacturing 2.0, A More Prosperous*  
20 *California*. It was done in June of 2009. Thank you.

21 MR. KELLER: Okay, thanks, Dorothy. I appreciate  
22 that. So, obviously these issue need to be taken into  
23 consideration as we seek to get a full picture of what is  
24 going on in manufacturing. One of the things that we do not  
25 normally look at is the big picture, the global picture, and

1 I think it is important that we begin by never forgetting  
2 that a lot of our discussion of manufacturing is based on a  
3 backward look in the rear view mirror of what has happened  
4 so far, but the changes that are occurring globally are of  
5 such a magnitude that it is really important that we take  
6 those into account. I love this quote from the author,  
7 Walter Russell Mead, who said, "The first Industrial  
8 Revolution was about moving large, heavy things faster and  
9 farther; the new Industrial Revolution is about moving  
10 ideas." And as Peter Drucker said in his seminal book *Post-*  
11 *Capitalist Society*, 17 years ago, "We are moving to a  
12 knowledge-based economy where individuals are carrying  
13 around the source of our own capital, which is our knowledge  
14 and ability to provide information to the network." This  
15 afternoon, my colleague, Brook Taylor, is going to share  
16 with you some of the amazing things that are occurring using  
17 direct application of individual knowledge and technology  
18 into the manufacturing sector as a way of indicating just  
19 some of the things that we need to juggle as we look at how  
20 do we support manufacturing in California. The way that we  
21 understand manufacturing requires continuous reanalysis  
22 because of the shift in all the different inputs that are  
23 happening because of not only the technology that is  
24 available, but because of the implications of connectivity.  
25 At the first Governor's Conference and Small Business and

1 Entrepreneurship in November of 2008, Tom Hayes, who used to  
2 run the Silicon Valley Leadership Group made comments from  
3 his book, *Jump Point*, that in the year 2011, that is just  
4 next year, there will be more people connected to the global  
5 internet than who are not connected. And the implications  
6 of that to our economy have yet to be completely absorbed by  
7 particularly those of us in public policy, but since we are  
8 moving from a focus on moving heavy things faster and faster  
9 to a focus on moving ideas, it behooves us to consider what  
10 that means for Manufacturing.

11           There are a number of other issues besides the ones  
12 that Dorothy implied that I think we should look at, as to  
13 what impacts Manufacturing. You touched on a couple of  
14 those, Dorothy, which are implied in the concern about the  
15 electricity rates. California has for many years, of  
16 course, focused a fairly dramatic amount of our public  
17 policy energy on the reduction of pollution, and that has  
18 had a significant impact in the Manufacturing sector,  
19 particularly because we use a number of toxic and near-toxic  
20 materials and chemicals in the Manufacturing process. So, a  
21 lot of ingenuity and innovation has gone on and, again,  
22 those data points that we showed on our graphs hide, they do  
23 not tell us all the innovative things that California  
24 entrepreneurs have done to stay in business, to comply with  
25 pollution reduction policies. It really would be powerful

1 to bring some of those folks in here, particularly in many  
2 of those industries that have been so chemical dependent, to  
3 discern how it was that they were able to find ways to stay  
4 in business in spite of all of the challenges that we have  
5 in maintaining a high level of quality in our environment,  
6 which required, first of all, reducing significant amount of  
7 pollutants over the course of the last 25 years. There are  
8 some true success stories of individual corporations that  
9 have heroically found that new applications of technology  
10 that have allowed them to continue to produce important  
11 basic elements, including, for example, metals in California  
12 to support manufacturing that are really truly outstanding.

13           So, we know that the dramatic transformation that is  
14 being undergone globally in Manufacturing, that the data  
15 points that we shared, I think, are evidence of that, but  
16 what we do not know yet is what will be the new normal, what  
17 will be the next plateau upon which the new economy maybe  
18 can rest to just do some work for a while? And here is the  
19 irony, we are actually all participants in creating that new  
20 normal, and since we do not know where that is, we might  
21 want to look at some models of different folks who have  
22 taken this challenge on. So, indulge me if you would, I  
23 grew up in Michigan, graduated from the University of  
24 Michigan, have been back there this year for several family  
25 occasions, and I took the opportunity to meet with

1 colleagues in the Michigan Economic Development Corporation  
2 and the Small Business Technology Development Corporations,  
3 to get a sense of a state which has faced significant  
4 economic peril, and what are they doing to support their  
5 Manufacturing and economic bedrock, and to see whether there  
6 is anything there that we could learn. And I was pleasantly  
7 surprised to learn two things, 1) there are some very  
8 innovative things that are going on there, and 2) they are  
9 eager and willing to share it with the State of California,  
10 even though some of their campaigns have directly competed  
11 to bring business to Michigan. And I remember getting off  
12 the airplane at the Detroit Metropolitan Airport and being  
13 confronted with a poster at the very end of the jet way that  
14 said, "Coming from Silicon Valley? Consider moving to  
15 Michigan." So, they have been very aggressive, but  
16 nonetheless, they have been very generous in sharing what  
17 they have done. And they see a lot of similarities between  
18 us and them, as I mentioned at the top of my remarks, with  
19 respect to the position of Manufacturing, but also they have  
20 a significantly high skilled workforce, as we do, they have  
21 a huge agricultural sector, as we do, they have always been  
22 an export state, as we are, and they have a very robust  
23 tourism sector, as we do. So they are just a fifth of the  
24 population of California, but there are a lot of  
25 similarities structurally. In the last six months, their

1 unemployment rate has been 13.2 percent, ours has been 12.3  
2 percent. Their foreclosure rate is a little bit behind ours  
3 at 10.72 percent, trailing ours at 12.14 percent. But  
4 another comparison, I thought, I was looking at your data,  
5 Dorothy, about facilities per million, we saw that chart,  
6 California is at 3.7; Michigan is at 59.3. So, it is a  
7 significant disparity there in my home state vs. my adopted  
8 state. But what has happened there is that their downturn  
9 has been so severe and so sudden relative to what we face in  
10 California, that they have galvanized a different way of  
11 getting this together. The Governor and the Legislature  
12 there actively promoted creating partnerships led by the  
13 Michigan Economic Development Corporation. It is a public-  
14 private partnership with significant public and private  
15 investment, so that they have created a structure that  
16 ensures that the private sector and public sector partnered  
17 together in creating and supporting public policies to help  
18 the transformation of the Michigan economy. One of the  
19 things that struck me, that we at the Governor's Office of  
20 Economic Development will be taking on, is they have  
21 actually categorized and inventoried all the assets, the  
22 economic assets. You can go to the Michigan Economic  
23 Development Corporation and talk to their team, and they  
24 know to a very deep level where the assets are, not simply  
25 the capital assets in terms of plant and equipment, of which

1 they have got a lot of idle capacity sitting in Michigan,  
2 but also in terms of the skilled labor forces, the community  
3 colleges, the universities, it is an astounding feat that  
4 they undertook because their philosophy is, "We can't  
5 support a transformation if we don't know what we've got."  
6 "It is our assets that become the base from which we launch  
7 new investments and new credit, new ventures," and so they  
8 have done an astounding job in creating that inventory.  
9 They also have paid detailed attention to emerging  
10 companies, particularly in sectors that their analysis  
11 demonstrates, particularly right for leveraging  
12 possibilities. And the way they know that is because, when  
13 they graph their assets against geography, they can see  
14 where the activity really is, and they can go into those  
15 sectors and find the individual corporations and interview  
16 them, and find out what they can do to support them. They  
17 have established something called the "Michigan 50 Companies  
18 to Watch," which not only spotlights the companies that are  
19 emerging, but they now have a big event every year that  
20 people compete to become part of, which spotlights and  
21 acknowledges -- this is what the Governor said -- "Companies  
22 that combine a flare for discovery with the intent and  
23 capacity for significant sustainable growth." And then it  
24 allows them also to invite the entrepreneurial and  
25 innovative insights that these companies are bringing to

1 their own work, to join the network of change. Michigan has  
2 invested and/or supported a number of mechanisms to support  
3 the financial needs of new and emerging companies, for  
4 example, the state supports four of what they call "pre-seed  
5 funds" which assist high tech start-up firms with  
6 technology, commercialization efforts, they provide matching  
7 funds for the Federal SBIR Grants through its Michigan  
8 Emerging Technologies Fund, it maintains the Michigan  
9 Innovation Equipment Depot to provide previously used lab  
10 equipment to the state's start-up companies in wet lab  
11 incubators. The MEDC operates the 21<sup>st</sup> Century Job Fund  
12 Commercialization Competition to support investment in  
13 promising and emerging companies, and it has also created  
14 and supports a number of networks to facilitate the exchange  
15 of information and capital in its various emerging economic  
16 sectors.

17 I talked to my colleagues in Michigan about my  
18 speaking with you, and they wanted me to tell you that they  
19 are willing to consult with you and your staff on any of  
20 these issues, and they are eager to learn from us, believe  
21 it or not, they actually think that the grass is greener on  
22 the other side of the fence. But it was kind of fun to hear  
23 their assessment of California assets from their point of  
24 view because we are sitting there going, "Oh, these are  
25 really great things, no, you guys have all these assets."

1 And until we acknowledge them as assets the way they do, we  
2 may not be able to take full advantage of them.

3 Now, in California, we have done a number of  
4 innovative attempts to begin this inventory process, I  
5 think, particularly in the California Regional Economies  
6 Project, Clusters of Opportunity work that are going on at  
7 the Governor's Office of Economic Development. We just  
8 launched a project to designate and support innovation hubs  
9 around the state. And these are all both opportunities to  
10 assess and inventory asses, and to begin to network  
11 together, but I think it is time for us to step that up. We  
12 have a number of - there are a number of things that we need  
13 to know from each other that only a robust network that we  
14 all managed together at the public policy level can show us.  
15 Just to give an example, I belong, as you do, Chairman  
16 Douglas through Panama, to the Green Collar Jobs Council,  
17 which is a really great interagency and public private  
18 sector collaboration. Three or four months ago, we heard  
19 from Sue Kateley, who is Executive Director of the  
20 California Solar Energy Industries Association, who  
21 testified that even though it takes about two days to  
22 install a residential system in California, it takes two  
23 months to permit it, and these are some of the  
24 contradictions that, on the one hand, we have a policy to  
25 expand our energy efficiency and our use of alternative

1 energy sources, on the other hand, we have yet to address  
2 all the regulatory impediments that exist not to prevent  
3 that from happening, but they exist from previous public  
4 policy decisions and we just have not had a chance to assess  
5 them in this larger context and to take action. And I would  
6 just point out that, as long as those roadblocks are not  
7 reduced, they have impacts backing up the supply chain into  
8 the manufacturing, and they are going to depress demand and  
9 depress the ability, or the incentive for people to come  
10 into California and take on establishing the appropriate  
11 plant equipment to get into this market that we all would  
12 like to see.

13           So I would just like to close if I could with the  
14 last slide, a quote from Peter Drucker that has always  
15 struck me, he said, "Post-Capitalist society has to be  
16 decentralized, its organizations must be able to make fast  
17 decisions based on closeness to performance, closeness to  
18 the market, closeness to technology, and closeness to the  
19 changes in society, environmental and demographics, all of  
20 which must be seen and utilized as opportunities for  
21 innovation." Our challenge here in Government is that we  
22 are not decentralized, we do not make fast decisions, we are  
23 not necessarily close to performance, to markets, to  
24 technologies, and changes in society, environment and  
25 demographics, but the opportunity exists for us to think

1 that way. The private sector and all of us as individual  
2 consumers have already adapted to this rapidly changing  
3 networked, integrated world, and the one power that we have  
4 in government that the private sector would really dearly  
5 sorely love to have is the ability to get people in a room  
6 and lock the door, the ability to convene and facilitate.  
7 At the Governor's Office of Economic Development, that is  
8 our philosophy, the best way that we can support the  
9 California economy is to listen to those who create wealth  
10 and distribute wealth, and find out what they need, and get  
11 them in a room with those that can help them solve those  
12 problems. It takes a long time to build an integrated  
13 network, our colleagues in Michigan said it took them five  
14 years to get to where they are today, but they encourage us  
15 to be steady, to continue to outreach, to inventory our  
16 assets, to create a network of those assets, to encourage  
17 all the different folks that are in these different sectors  
18 to talk together, collaborate, and with programs like the  
19 ones that you are managing, that could actually be a  
20 stimulus for a lot more than simply creating stuff that  
21 people want to buy, it can be the stimulus for, as Professor  
22 Mead says, for us to exchange ideas and knowledge on a much  
23 quicker and more comprehensive basis.

24 So, I realize that is not a talk necessarily about  
25 manufacturing, per se, but I wanted to set a context for

1 this bigger picture in which this conversation is occurring,  
2 and I thank you for the opportunity to share some ideas.

3 CHAIRMAN DOUGLAS: Thank you so much, Mr. Keller.  
4 Now, Suzanne, is Silicon Valley Leadership Group here or on  
5 the phone?

6 MS. KOROSSEC: They are on WebEx.

7 CHAIRMAN DOUGLAS: Oh, great. All right.

8 MR. HINES: Good morning. This is Bob Hines. Can  
9 you hear me?

10 MR. RILLERA: Yes, Bob. This is Larry, go ahead.

11 MR. HINES: Great, thank you. Listen, I apologize  
12 for not being there in person, there was a mix-up. On  
13 behalf of the Silicon Valley Leadership Group, I want to  
14 thank the California Energy Commission for the opportunity  
15 to offer our thoughts at today's workshop. It is a pleasure  
16 to join Dorothy and Marty on this panel, and I apologize  
17 that I could not be there in person.

18 The Leadership Group was founded over 30 years ago  
19 by David Packard of Hewlett Packard. We represent more than  
20 300 of Silicon Valley's most respected companies. Our  
21 membership includes Silicon Valley's High Tech, Biotech,  
22 Clean Energy, Venture Capital companies. We also represent  
23 major financial institutions at some of the largest  
24 universities in the area. Our members collectively provide  
25 one out of every three private sector jobs in Silicon

1 Valley. Collectively, our members have close to 500,000  
2 employees in California. I am the Vice President, General  
3 Counsel, and Energy Director for the Leadership Group. I  
4 have had the opportunity for the past seven years to work  
5 closely with Energy Directors and Facility Operators for  
6 some of the largest end-users companies in Silicon Valley.  
7 I have had the opportunity to interface frequently with the  
8 vendor community, the energy efficiency companies, the  
9 service providers, that are actually developing and selling  
10 energy efficiency tools and applications to the companies,  
11 they are the manufacturer base that we are all talking  
12 about. So, why am I testifying? You know, I have heard a  
13 great deal of feedback from our members on what is right and  
14 also what is wrong in government efforts, particularly with  
15 the CEC and DOE's efforts, to encourage energy efficiency,  
16 sustainability activities, and manufacturing capacity. Now,  
17 what I have to offer, and really what the Leadership Group  
18 has to offer is kind of the insights into what triggers the  
19 decision-making of companies in terms of their investment  
20 and deployment of energy efficiency tools, and their  
21 procurement thoughts.

22 Now, I would like to turn the question around and  
23 the focus around. It is really not about funding  
24 manufacturing sites, or about paying or subsidizing  
25 production of energy efficiency equipment and components.

1 What I like to focus on is a solution we see as important,  
2 or at least supplement other activities. We see the  
3 solution more or less in creating a demand and the strong  
4 market conditions for our member companies to see it as in  
5 their self interest to procure energy management systems,  
6 tools, and applications. Now, with demand, you scale  
7 production, you generate innovation, you drive costs down.  
8 That is what leads to manufacturing being successful in  
9 California. So, what we would recommend, the focus should  
10 be on how the CEC and working in conjunction with the DOE,  
11 can work in a closer partnership with the industry and  
12 utilities to create and feed that demand for energy  
13 efficiency services and products. That is where our focus  
14 is. We are not in the business of throwing policy papers at  
15 agencies, or governments, we actually want to get our hands  
16 dirty and actually be part of the solution, and we will talk  
17 about how we are involved, and thankfully, are taking  
18 advantage of CEC funding to actually drive this interest.

19 Now, I am told that the Commissioners and staff are  
20 really not interested in speakers blowing smoke, you want to  
21 hear candid remarks on problems and solutions, and I am  
22 hoping not to disappoint you. Now, if my phone connection  
23 is suddenly lost, I know I have gone just a little too far  
24 in being frank. One time ARRA funding and CEC's funding has  
25 been helpful in terms of driving demands and solutions, but

1 it has challenges. Let me start with DOE funding. One of  
2 our largest complaints, and particularly with DOE ARRA  
3 backed funding for emerging technologies, is that there is  
4 no requirement to push out the information to the industry.  
5 You see investments in demonstration projects on emerging  
6 technologies that we are interested in, on sustainable  
7 significant energy savings, whether it be in facility  
8 operations or data centers, and one of our major focuses for  
9 our companies is providing them tools on facility and data  
10 center efficiencies because that is a key cost to their  
11 operations, and we see it from our discussions as the  
12 reasons why they are expanding their operations in other  
13 states. Our focus is primarily on Data Center Operations.  
14 Here is the challenge of DOE ARRA backed funding. They are  
15 going to generate some tremendous field results on the  
16 efficiencies, the effectiveness of these emerging  
17 technologies, but the information essentially is placed on a  
18 shelf. Host sites benefit from the improvements, the  
19 projects that DOE is funding will provide field data that  
20 really demonstrate commercial viability of the technology of  
21 the application, and everyone understands that. But the  
22 information, the data, is not necessarily shared with the  
23 industry. We discovered in reaching out to these data  
24 center hosts, for example, on DOE funding, that they are not  
25 required to showcase their projects to the industry, so what

1 we are faced with here is a tremendous amount of investment  
2 in the next two or three years, but there will be no  
3 credible reliable third-party repository for the industry to  
4 turn to, to access these case studies or learn about how to  
5 apply the technology to their facilities. To the host  
6 sites, they really consider this proprietary information and  
7 they see it as in their interest not to share it at times,  
8 and also they do not have the ability or their time to share  
9 it. So, the vendors are left to push out the field data  
10 and, frankly, it is viewed as market tough, and it is not  
11 credible. That is a huge problem in DOE ARRA funding for  
12 energy efficiency technology, is the lack of cooperation and  
13 sharing of the information in the field. You cannot create  
14 a new technology, be commercialized, and accept it without  
15 that type of data.

16           The same problem applies to CEC's funding and  
17 investments. It has been helpful, and I want to give the  
18 CEC credit, particularly in the PIER funding, and some of  
19 the funding you are providing to Lawrence Berkeley National  
20 Lab, but it has been spotty. CEC funding in PIER Programs  
21 really has the same challenges, and there is a dire need for  
22 better information flow. And that is kind of a gap the  
23 Leadership Group is trying to fill. There is a gap also  
24 between R&D for proof of concept, which is great for  
25 emerging technologies, but it is in the lab, or very limited

1 field testing. When you do proof of concept in the lab, or  
2 limited field testing, where you are getting lost is getting  
3 the information to utilities, and getting them to integrate  
4 these new emerging technologies in their incentive programs  
5 because, if it is a new part of an incentive program that  
6 has only been lab tested, you are not going to get the buy-  
7 in from industry, there are simply not going to invest  
8 millions of dollars, even if under the pledge of incentives,  
9 if they have no field data to show it works, and so the R&D  
10 research and proof of concept research that CEC is doing is  
11 excellent, but you are missing the next step on pushing out  
12 the information into demonstration projects in real time  
13 data centers. And then you are missing the opportunity to  
14 acquire that information to be shared with the utilities and  
15 the industry.

16           Now, Lawrence Berkeley National Lab - and I am  
17 biased because I have worked with them for the last three  
18 years - is doing a very good job with CEC funding. Their  
19 complaint? It is year to year; they are not sure what they  
20 are going to get next year. What we do, Lawrence Berkeley  
21 National Lab, with CEC funding, invests and participates in  
22 demonstration projects for emerging technologies and data  
23 center operations were just flat out amazing. The return on  
24 investment, the payback periods, the sustainable energy  
25 efficiency they are generating at facility operations and

1 data centers, is tremendous. And what Lawrence Berkeley  
2 National Lab has done well is develop a case study and go  
3 out and share the information. Based on our work with  
4 Lawrence, Berkeley National Lab, we developed a Data Center  
5 Energy Efficiency Summit, where we have end users present  
6 case studies on efficiency plays at their Data Center. We  
7 do not let the technology vendors do it because that is  
8 considered "market pot." The Lawrence Berkeley National Lab  
9 has been helping present case studies and showing the  
10 success of emerging technologies that is at a commercialized  
11 stage, and getting the industry buying it, to actually  
12 invest in it. We also tap into - and this is another area  
13 that needs work - is the Utilities incentive program.  
14 Utilities offer pretty good incentives for data centers and  
15 facilities to engage in energy efficiency activities. The  
16 problem is that often they work in a silo, they do not share  
17 that information with other industries, mainly for  
18 competition reasons, mainly because they do not know how to  
19 do it effectively. What we do is charm them to have the end  
20 user bring the information to the Summit and share it with  
21 the industry. We develop protocols on how to verify the  
22 data and present it, we take their presentation and we  
23 videotape it, and we push all this information out on our  
24 Website. And, to be honest with you, I am an incredibly  
25 popular person on the day of the Data Center because they

1 are all beginning me for the information. We are giving  
2 them a business plan to go back to their site engineer, go  
3 back to their CFO, to justify capital investment in this  
4 energy efficiency technology. And why I think this is  
5 important, why the Leadership Group thinks it is important,  
6 this drives demand and drives a market, and leads to the  
7 manufacturing expanding in the state for these technologies  
8 and these applications.

9           So how do I tie this together, PIER funding and  
10 grant funding? The solutions we see is more consistency in  
11 terms of the grant funding. It is a spotty, at best. We  
12 like to see a two to four-year commitment in budgets to  
13 constantly invest in demonstration projects in the field.  
14 We believe this could be better funneled through what we  
15 call a Center for High Tech Excellency, and I would like to  
16 work with CEC staff on putting kind of meat to this. What  
17 we like to see at the CEC level in this Center of Excellency  
18 is a repository of the data. If you want solutions, you  
19 need to provide the industry reliable, unbiased, credible  
20 data that demonstrates the effectiveness of these tools and  
21 applications in providing sustainable energy efficiency or  
22 optimization results in labs, in clean rooms, in data  
23 centers. If you provide that type of data, you are going to  
24 get companies willing to invest the resources. They are not  
25 going to do it on their own. Very few companies have the

1 capacity to do the due diligence to figure things out, they  
2 simply will not do that. Even in this conversation, when I  
3 had five large end users with several members that consult  
4 with me, they talked about the example of outside air and  
5 evaporated cooling as a solution that is ready to be  
6 deployed, but no one understands it. Immediately, my two  
7 end users stop the conversation, demand we send them the  
8 case studies that they can look at, because they had no idea  
9 this is really a solution. And it actually got us  
10 sidetracked. It goes to show you, even large sophisticated  
11 end users need that data. Now, the Center for Excellency  
12 can be a repository of this data. And also, you can help  
13 fund and coordinate the demonstration projects. Important  
14 demonstration projects - and this is where the CEC can work  
15 with the National Lab - you need to develop the protocols  
16 for third-party verification. What these case studies need  
17 to have in terms of the data flow and the data information,  
18 because you need to do it in a format that is consistent and  
19 for a industry player to understand , and pick up, and use  
20 it in his business plan to deploy, that application at his  
21 industry site. That is important. So, we need a Center for  
22 Excellency not only to do a repository of the data, but to  
23 help develop the protocols on how to verify the data and  
24 assemble the data. We need a consisting funding stream, two  
25 to four years, constantly investing matching funds in

1 demonstration projects of these natures. And we need this  
2 center, under the CEC leadership, to help coordinate these  
3 activities in a partnership with the utilities and the  
4 industry. Right now, the utilities have a really hard time  
5 grabbing new technologies and creating incentive programs  
6 around them, they need to have the case studies to develop  
7 the parameters for developing incentive programs.

8 MR. RILLERA: Bob, this is Larry. Could you wrap up  
9 here a little bit?

10 MR. HINES: That is basically - we are looking for  
11 the CEC for a more consistent funding stream to develop a  
12 repository of data and working in partnership with the  
13 industry and utilities on this. If you create the demand  
14 and the market conditions, you would drive the manufacturer.  
15 Thank you.

16 CHAIRMAN DOUGLAS: Thank you to all of our speakers.  
17 I have a few questions, I know that Commissioner Eggert  
18 does, as well. I would like to start, I guess, with our  
19 first speaker, Ms. Rothrock, and my first question is a  
20 fairly technical one. You showed us a number of slides from  
21 - it looks like Conway Data Site Selection Magazine?

22 MS. ROTHROCK: Yeah.

23 CHAIRMAN DOUGLAS: And my question is, and this is  
24 largely going to be for the benefit of CEC staff who are  
25 turning their analytical capabilities to this topic, which

1 is not what we have usually pointed them at. What kind of -  
2 what is the methodology behind this? Is this a survey? Is  
3 there data available?

4 MS. ROTHROCK: Yeah. Conway Data, we purchased this  
5 information from them, and they have it broken down in even  
6 more detail, it is a survey, and I can get you all the  
7 background information.

8 CHAIRMAN DOUGLAS: Okay, if you could get us the  
9 methodology, the survey, the sample size, that sort of  
10 thing, that would be very valuable.

11 MS. ROTHROCK: You bet. We would love to have you  
12 take a look at it.

13 CHAIRMAN DOUGLAS: Okay, that would be great. And I  
14 guess I had another question, but I will just wait on that,  
15 and that is how those results correlate with the results of  
16 other data that is also available, whether it is a census of  
17 manufacturers and so on. But we can just bookmark the data  
18 issues as something that we are interested in, and we would  
19 like to take a look at.

20 MS. ROTHROCK: Thank you.

21 CHAIRMAN DOUGLAS: Another question I had for you  
22 is, on your slide of needs, or areas where the state - where  
23 you see needs from the state, you mention the sales tax  
24 exemption and, of course, my understanding is that is in  
25 place for the clean tech manufacturing - not across the

1 board, but, yes, for clean tech, that is correct.

2 CHAIRMAN DOUGLAS: Right.

3 CHAIRMAN DOUGLAS: And I very much noted the slide  
4 on workforce and you may be aware that yesterday's workshop  
5 was about our investments in workforce training. We have  
6 become - and this is also the first time for the Energy  
7 Commission, certainly at this scale, if, I believe, at all.

8 MS. ROTHROCK: You could be a new education agency.

9 CHAIRMAN DOUGLAS: Well, I do not think that is our  
10 plan and, in fact, we were very very careful in the  
11 workforce area to work through the Green Jobs Council, EDD,  
12 and ETP, because we do not believe the state needs a new  
13 education agency.

14 MS. ROTHROCK: Right.

15 CHAIRMAN DOUGLAS: We do think the state benefits  
16 from us consciously bringing together the energy policy  
17 goals that we have with the workforce expertise that others  
18 have, to try to meet the demand. I have a question, I do  
19 not know if it is more for you, or for Mr. Keller, but part  
20 of our workforce funding was for detailed regional surveys  
21 of, per major region, the employment opportunities generally  
22 specifically in clean energy and, therefore, tuning the  
23 training that is available to the demand, the employer  
24 demand. And my question for you is whether that is the same  
25 thing or related to the Centers of Opportunity that you had

1 referenced.

2 MR. KELLER: The clusters of opportunity is designed  
3 to coordinate precisely all of the issues that a region  
4 might need to take a look at for future evolution. So,  
5 where is investment going? What businesses are opening, and  
6 therefore what skills are required for employment? So that  
7 is a coordination model that has not been completed, it is  
8 actually rolling through the different regions, as I  
9 understand it. The Nor Cal region was completed and others  
10 are - so the timing is actually pretty good.

11 CHAIRMAN DOUGLAS: Oh, that is great. It is good to  
12 hear that it is coordinated, I expected that it was.  
13 Another question I have, and I know, Ms. Rothrock, you are  
14 speaking for manufacturing, in general, as opposed to clean  
15 energy manufacturing, specifically. So, I took note when  
16 you talked about California only regulations and I have  
17 heard you say in the past a number of times that can affect  
18 companies by driving up costs. I think, here, our focus on  
19 clean energy or clean tech may be a little different. We  
20 have heard repeatedly in the workforce workshops, in the AB  
21 118 and PIER leverage workshops, and in other forums, that  
22 in this case policies that, first of all, put California in  
23 the forefront of innovation, and that can be PIER, that can  
24 be the National Labs and the University System, and so on,  
25 but the innovation strengths, the demand and deployment of

1 clean energy technologies, that is driven in part by our  
2 clean air requirements and clean water reduction, and  
3 pollution, and so on. And the market that people see coming  
4 in the areas of renewable energy, energy efficiency, and air  
5 quality not only in California, but worldwide, make this an  
6 attractive area to invest in California. And I am  
7 interested in anyone on the panel's reactions to that, and  
8 that is one of the questions that we are asking, as well, of  
9 some of the companies that will be talking later. Because,  
10 again, as we began this process, and we asked ourselves what  
11 will a \$5 million low interest loan do to entice somebody to  
12 come here, or not come here, or expand or not expand, has a  
13 lot to do with the broader context of do they actually want  
14 to come here at all, and are they actually thinking about  
15 expanding? And why California? So, I do not know if anyone  
16 on the panel has thoughts about that question.

17 MS. ROTHROCK: Yeah, just briefly, the manufacturers  
18 are concerned that government programs, writ large, not  
19 necessarily picking on anyone or another, have a tendency to  
20 raise costs, and while there may be a well intended purpose  
21 of driving a particular demand, or industry development, the  
22 costs overall are going to depress investment and employment  
23 more than you are going to gain through your government  
24 program. So any time we are in there picking a direction we  
25 want to go, and saying this is going to create jobs, you

1 have got to look elsewhere and see what jobs am I going to  
2 lose at the same time I am going after that job. We think,  
3 on balance, many of the policies actually will cause more  
4 loss than gain.

5 CHAIRMAN DOUGLAS: Anyone else have -

6 MR. HINES: The Leadership Group takes a - we  
7 respect and support a lot of the CMTA policies, particularly  
8 in tax policies that make us uncompetitive in terms of  
9 expansion, but we also see some of the policies in putting a  
10 price on carbon, and pushing out the importance of  
11 sustainability activity because you are actually feeding  
12 into the demand for energy efficiency solutions, and that is  
13 a good thing. But I do want to caution the CEC, our members  
14 have options in terms of where they expand or locate their  
15 facilities, and for the Data Center, for the Clean Labs, and  
16 Labs, and Data Centers are critical, for example, to the  
17 pharmaceutical biotech in terms of testing and vetting their  
18 studies. And right now, they are looking at where to  
19 operate these data centers. They like to keep them close to  
20 their R&D sites, but the problem is the cost of energy.  
21 Data Centers, for instance, are 50 percent, 75 percent of a  
22 lot of these biotech and high tech software companies'  
23 overall operating expenses. So, we will face the challenge  
24 here in terms of how to optimize these operations, so these  
25 legacy operations can continue, and also convince them on

1 expanding their clean labs here. So, it is important for us  
2 to understand, and the CEC can play a role, is providing the  
3 tools to drive that energy efficiency. Now, a \$5 million  
4 loan on siting and new emerging technology company here is  
5 going to create job creation, but you have got to have  
6 policies and procedures that will encourage companies to  
7 deploy those technologies and in an effective way. Our  
8 companies are doing it not because they think green is the  
9 best thing, they are doing it because it affects their  
10 bottom lines.

11           CHAIRMAN DOUGLAS: Thank you. That is very helpful.  
12 And, Mr. Keller, I thought I would offer you a chance at  
13 that question, as well as asking you more specifically, you  
14 had mentioned examples of compliance with California Regs,  
15 and you were talking about the chemicals, I think, and just  
16 finding ways of using less harsh, or less potentially  
17 damaging chemicals led to innovation that actually created  
18 better products. So, in addition to giving you a shot at my  
19 last question, I would like to ask you where we might be  
20 able to find more innovation? Are there studies, examples,  
21 or are there case studies? You know, it is a very  
22 interesting point that you raised.

23           MR. KELLER: I have had the opportunity to spend a  
24 lot of time with the Small Metal Manufacturers Association  
25 of California and to meet with their members, and take a

1 look at one of their operations, these are companies  
2 typically that have been sighted in urban centers,  
3 oftentimes in areas of low income, places where pollution  
4 had historically been permitted without regulation, and  
5 then, over the course of a number of - it is actually a  
6 fairly short period of time - they had to face the choice of  
7 whether they are going to re-tool or move, and many  
8 companies chose to re-tool. I would recommend bringing some  
9 of those proprietors or have your staff talk to them, I  
10 would be happy to set some of those up for you, because what  
11 I learned from those men and women is that a determination  
12 to stay in place led them to find ways to substitute  
13 processes, substitute chemicals, but also to find ways to do  
14 things more efficiently that may eliminate the need to use  
15 older traditional ways of producing goods and metals,  
16 particularly. So, I would suspect that if we were to take  
17 the sectors that have been under the most enormous pressure  
18 because of the processes they use, or the materials they  
19 use, and talk to them at their trade associations and others  
20 that we could learn a lot on a case-by-case basis. Again,  
21 that becomes part of the inventory of the assets of our  
22 economy, and ultimately that capacity that they had to use,  
23 not just their minds, but their capital and their networks,  
24 to transform their businesses, is probably just on a small  
25 scale an example of what California as a whole is going to

1 do over the next 10 years.

2 CHAIRMAN DOUGLAS: Great, well thank you. I think  
3 that is all the questions I have. Commissioner Eggert?

4 COMMISSONER EGGERT: Thank you, Chairman Douglas.  
5 Those were excellent questions and this has been a really  
6 informative panel and, again, appreciate your providing your  
7 insights. I have some related questions and I will start  
8 with Ms. Rothrock. I know CMTA has been a great champion  
9 for Manufacturing in the state. In your areas of  
10 recommendations or initiatives, you did talk about the  
11 skilled workforce investments and your chart prior to that  
12 slide shows the decline of career tech enrollment. I guess  
13 one thing I would just invite is, if CMTA, or some of your  
14 members, have thoughts about our current investments in this  
15 area, and whether or not they are directed towards the right  
16 career areas and at the right scale, we would very much  
17 appreciate and invite that input. And then, also, one of  
18 the things that came up in yesterday's discussion was the  
19 need for not just some of the investment and sort of the  
20 technical trades, but also in some of the higher white  
21 collar management and engineering fields, and sort of how  
22 that is affecting the business environment for investment  
23 and manufacturing in the state.

24 MS. ROTHROCK: Okay, I will take a look at that.

25 COMMISSIONER EGGERT: Thank you. I also wanted to

1 pick up on an analogy I guess you had mentioned "planting  
2 seeds," I think you were referencing in one or two of your  
3 slides, and especially as it relates to venture capital, you  
4 know, the fact that California is getting a significant  
5 fraction of the national total, and I know a fair share of  
6 that is going into the Clean Tech arena. And then,  
7 actually, to Mr. Keller's point about making sure that we  
8 have the appropriate level of analysis and data to really  
9 sort of be able to dig in, to understand how our economy is  
10 shifting, looking at that broader perspective, and I guess I  
11 wonder, or also sort of invite comment, or materials about  
12 how we could sort of look in more detail into these emerging  
13 areas of clean tech manufacturing because some of them are  
14 very much in their nascent stage, and they do have in some  
15 cases fairly low levels of employment, but with a tremendous  
16 potential for future growth.

17 MS. ROCKROTH: Maybe it would be informative to look  
18 at what happened with Biotech, which was sort of the wave  
19 after the Internet Revolution for California, and I know  
20 Governor Davis spent a lot of time trying to grow that part  
21 of the economy. When we talked to the Biotech Association  
22 in around 2000 is when I started with the manufacturers, we  
23 said, "You've got to get on board our manufacturing program  
24 here to make sure Biotech can grow and manufacture in  
25 California," and we were told, "No, we've already decided,

1 and our members know we are not going to manufacture in  
2 California." So we will perhaps, for a while, in California  
3 be very good at doing kind of R&D, and first stage, and  
4 let's get things going, but when it comes time to really get  
5 serious about growing a plant, putting in multiples of  
6 millions of dollars in a facility, California is not the  
7 first place people look. In fact, I hear anecdotally from  
8 my members that they will not put another dime in  
9 California. I mean, I do not want to overstate it, but it  
10 is very negative out there for investment in manufacturing  
11 in California.

12 COMMISSIONER EGGERT: And so, definitely, we want to  
13 change that picture.

14 MS. ROTHROCK: Yes, so we are back to the happy,  
15 let's make a difference, move forward.

16 COMMISSIONER EGGERT: And -

17 MR. HINES: Bob Hines, the Leadership Group.

18 COMMISSIONER EGGERT: Go ahead.

19 MR. HINES: We have biotech members and Dorothy is  
20 right. They are very cynical about their abilities to  
21 expand their operations to develop manufacturing sites in  
22 California, but we have seen some progress on a State level  
23 that it is in jeopardy. One of the key factors in  
24 Genentech's decision to locate a \$400 million Biotech Build-  
25 out in Oregon, I believe, was because of our corporate tax

1 policy. It was actually penalizing them for operating the  
2 site and expanding their head count in California, because  
3 there are multiple appropriation factors that we tax on head  
4 count, on property, institutional and corporate taxes.  
5 California in a budget compromise two years ago adopted  
6 single sales factor approach, that is scheduled to be  
7 implemented - I am not sure if it is this year, I think it  
8 is next year - that is in jeopardy. A lot of the large  
9 clean energy companies such as Sun Power, had told us this  
10 single sales factor approach, we are not penalized for  
11 opening sites in California, it is critical to their  
12 thinking of where they are going to locate manufacturing  
13 sites. So, there are policies that California can control  
14 because, if they open it up in Arizona, we are gone, or 25  
15 other states that have single sales factors, they will not  
16 be penalized for expanding head count. In California, in  
17 the current corporate tax policies, your taxes go up, so  
18 there are solutions that can help, and I think CMTA and the  
19 Leadership Groups support a lot of the policies that CMTA  
20 has pushed out on, on manufacturing tax credit exemptions,  
21 R&D to credit exemptions, the list goes on.

22           COMMISSIONER EGGERT: Thank you very much for that  
23 input. Question to Mr. Keller. My background includes some  
24 time in Michigan working for the auto industry, and I am  
25 marginally familiar with the Michigan EDC, and I know they

1 have some really innovative models there, and in fact, I  
2 think, you know, looking outside at our borders to other  
3 states, to get input as to how they have done things and get  
4 their lessons learned about what has worked and what has  
5 not, I think, is definitely something I would like to hear  
6 more about, including from their mission and example that I  
7 think you provided a good summary of, and would invite if  
8 there are any write-ups that talk about some of the details  
9 of their programs, I think that would be good to bring into  
10 the record. And then, I guess you had also mentioned this  
11 idea of making sure that we have a good inventory and the  
12 ability to do sort of proper analysis, and I guess I would  
13 invite maybe just slightly more comment about whether or not  
14 you think that that is adequately being pursued through the  
15 activities at, for example, GoED, or whether or not  
16 additional work needs to be done. And then maybe offer Bob  
17 the opportunity to comment relevant to this Center of  
18 Excellence that he described, as well.

19 MR. KELLER: Thanks for the question, that is a  
20 great question. The Governor's Office of Economic  
21 Development has now been in place for three months, and so  
22 it is a scramble to begin to even just integrate the assets  
23 that we have now drawn together, some really great people,  
24 some great history, and so I think there is huge  
25 opportunity. As you know, the Legislature is considering a

1 bill to make it permanent, this is simply existing by  
2 Executive Order at the current point. I think that, just to  
3 give you an example from something Bob said earlier, that is  
4 an example of what we do not have right now, which would  
5 really be of value, which is we do not have a coordinated  
6 picture of where financing is, investment is, from beginning  
7 to second stage to mature, in the State of California. You,  
8 as Commissioners, cannot look at a map of investment across  
9 the state in all of not just the emerging, but particularly  
10 as a small business advocate, I am frustrated I cannot tell  
11 you where small businesses are popping up and taking  
12 advantage of either regional opportunities, or even the  
13 opportunities, for example, that the Energy Commission is  
14 trying to create and manage. So, just knowing, just pulling  
15 together those data points and creating the network map,  
16 would serve all of us, just to know what is there because  
17 there is an assumption that California has lived off of for  
18 a very long time, which is a good assumption, that the  
19 private sector can take care of this on its own. And that  
20 is true, particularly when we live on these plateaus of the  
21 same kinds of economies and manufacturing distribution,  
22 etc., but now we have come to a jump point where there is a  
23 disruption in this presumed normal cycle, and a new one is  
24 being created. And so the ability to see where investment  
25 is going and, you know, Bob talked in the opening of his

1 remarks about essentially demand side focus. I mean, I do  
2 not even know how you get your arms around that because you  
3 do not know where the supply side investment is going. So  
4 working together, your organization, the CPUC, and others  
5 that are energy focused along with us and some of the  
6 private sector, particularly universities where there is a  
7 lot of research going on, we can continue to hold together  
8 these kinds of cooperative meetings and dig deeper into the  
9 data and see what we can do to help create that map. I  
10 think, from my point of view, that is what is really missing  
11 for us to answer your question. And I think there are  
12 states, North Carolina is another, where there has been more  
13 progress at creating that map, and armed with that  
14 knowledge, public policymakers known how to, a) communicate  
15 with that network, and b) work with it to determine what do  
16 we do to accelerate those things that, like you said  
17 earlier, if we want to increase the manufacturing base, that  
18 is important to know.

19 COMMISSIONER EGGERT: Anything to add, Bob?

20 MR. HINES: You know, I just want to concur with  
21 Marty's remarks on getting the map and understanding the  
22 data to where we are at because, if the policymakers  
23 understand where we are in this sector, it can help them  
24 form decisions and invest correctly. The key, in our  
25 perspective, and we do not want to supplant or end any

1 subsidies or assistance to manufacturing, but paying for a  
2 manufacturing site, I do not know how to emphasize this, is  
3 not going to mean someone is going to buy their product.  
4 What we need to do is provide credible data on the  
5 usefulness of these products, and that is where the Center  
6 of Excellency comes in. You are already generating a  
7 tremendous amount of data, with research funded by the CEC  
8 and DOE and others, it is just the coordination of this data  
9 into a repository where we can access it. It is like the  
10 Amazon where you can figure out whether a product is good.  
11 Our energy managers and directors literally do not know how  
12 to access it, so if we can generate demand and drive a  
13 manufacturing base in California, by the leadership of the  
14 CEC and in working with the industry and utilities.

15           COMMISSIONER EGGERT: I appreciate that comment.  
16 And I know the CEC has some activities funded through PIER  
17 like, for example, the California Lighting Technical Center  
18 that does some of that specifically for lighting  
19 technologies, which has been a great model. And I think you  
20 are right, there is ample opportunity to expand that to  
21 other technologies and sectors. So, I have no further  
22 questions.

23           CHAIRMAN DOUGLAS: Mr. Hines, this is Chairman  
24 Douglas. I just realized that I had written down a note to  
25 say something to you that I had not gotten around to saying,

1 which is that I really appreciate your comments about what  
2 the CEC and DOE could do better with both on the ARRA side  
3 and on the PIER side, to make sure that information gets out  
4 to industry in a way that they can use it and act on it and  
5 deploy it. And so, I think this is something that we should  
6 follow-up on, I will make sure that the R&D Committee  
7 members and Commissioners Byron and Boyd get a transcript of  
8 this part of the proceeding, and we will talk to staff and  
9 we will look at - please expect a follow-up because I think  
10 you have raised some really interesting ideas and we would  
11 like to talk to you more about -

12 MR. HINES: If you name the time and date, I will  
13 drive up to Sacramento and stay there as long as you will  
14 put up with me.

15 CHAIRMAN DOUGLAS: Well, we will take you up on  
16 that. So we will get back to you and we will do our best to  
17 accommodate your schedule so that we do not pick a terrible  
18 time and date for you. But, thank you very much.

19 MR. HINES: I will make time. This is a great  
20 solution. Thank you so much for your willingness to delve  
21 into this.

22 CHAIRMAN DOUGLAS: Great, well, thank you. I would  
23 like to thank our first panel. We have gone overtime, but  
24 we did it because you all brought such great information and  
25 insights to the table. We are really pleased that you have

1 been able to do this. For the second panel, and I will turn  
2 this to Larry in a minute, I realized that everybody on the  
3 second panel had high hopes of being out of here before  
4 lunch. Obviously, it is twenty to 12, anyone who is not  
5 able to, or does not wish to stay through lunch, which is an  
6 hour, will get to speak before lunch, so if that is all of  
7 you and we are here until 1:00, that is fine with me. If  
8 some of you do not mind, or were planning on staying through  
9 the afternoon, we might take a break and pick you up after  
10 lunch. But that is really up to you. So, again, thanks to  
11 our first panel.

12 MR. RILLERA: I would like to invite the next panel  
13 of business participants to the table. What we will do is  
14 go in order and then plow along as quickly and succinctly as  
15 possible with your presentations, and then solicit as much  
16 questions from the Commissioners until the appropriate time  
17 and then we will take a little bit of a break here.

18 CHAIRMAN DOUGLAS: Well, let me just ask a question.  
19 Who on the panel needs to, or wants to be back - leave for  
20 other engagements before we break for lunch? Okay, so we  
21 will make sure that we ask any questions we have of you  
22 before we break, and is anybody on the panel or even in the  
23 audience so desperately hungry that breaking for lunch would  
24 be a good thing before you speak? Or are you all willing to  
25 stay with us until 12:30 or 1:00? 12:30 or 12:45? Would

1 that be okay? We do have a cafeteria on the second floor,  
2 so if there is anyone in the audience who is desperately  
3 hungry, has a quick place to go to tide themselves over if  
4 need be. All right, let's get going.

5 MR. RILLERA: Lisa?

6 MS. BICKER: Yes. Thank you. Hello, I am Lisa  
7 Bicker with Clean Tech San Diego, and I am delighted to be  
8 here. Thank you for the opportunity. I am going to give  
9 you a general overview of what is happening in San Diego,  
10 and focus on two specific areas. Next slide, please. Thank  
11 you. Clean Tech is a nonprofit trade group. We are a  
12 public private partnership. We represent businesses, large  
13 businesses and small businesses in the clean energy sector,  
14 as well as in the general economy. We also represent the  
15 education community, the Scripps Institution of Oceanography  
16 is a founding member, as is UC San Diego, and we represent  
17 small government. Our mission really is to help the greater  
18 San Diego region participate in and plan for the transition  
19 to the clean energy economy. We very much have taken a page  
20 from the biotech sector in our region, San Diego is well  
21 known for creating clusters, and much of our assets relate  
22 to the university expertise in our region, and I will show  
23 you why that matters in the next slide.

24 We are a new organization, we are just over two-  
25 years-old, and we decided very early on it was critically

1 important to start to track the type of companies that are  
2 growing and/or moving, or leaving our region in the clean  
3 tech sector. So, our most important asset is what you are  
4 looking at now, and that is our data map to show what types  
5 of companies, how many, are moving here, and choosing to  
6 grow in San Diego, and why. And I am delighted to be here  
7 today to tell you that we have a robust sector in the clean  
8 tech sector, and it is growing. We add to this database at  
9 least weekly, and sometimes daily. And that is not because  
10 a new company, as an example, is growing every day, but we  
11 are learning about them more efficiently and effectively.  
12 One of the really interesting things about San Diego is the  
13 relationship to our Universities and research institutes.  
14 Very much like the biotech sector, there is a very kind of  
15 fluid relationship between the research community and the  
16 commercial sector, one in three biotech companies was  
17 launched by a U.C. Professor. We have taken that statistic  
18 to heart and we are already seeing similar trends in the  
19 clean tech sector. So, we have reached out in a very  
20 proactive way to make sure that our university and research  
21 institutes have a very strong, fluid, strategic partnership  
22 with the private sector in San Diego, and we are starting to  
23 see some benefit from that in the clean tech sector. We  
24 also are known as a market connectivity type of region. We  
25 have a lot of market connectivity organizations like mine.

1 My whole focus is to ensure that diverse parties are sitting  
2 in the same room, toward a common goal.

3           One of the interesting things about our 700  
4 companies is the huge contingent of solar companies. We  
5 have almost 200 solar companies in our region. I would say,  
6 generally, about the 700 or so companies we have in San  
7 Diego, about half of them are what I would call innovation  
8 companies, and the other half are market facilitators; those  
9 are green architects or installers. And we are tracking  
10 both because they are obviously interrelated. But some key  
11 trends you will see there are the huge number of solar  
12 companies, that is not surprising given the physical assets  
13 in San Diego. It is also not surprising because we have a  
14 number - we have a local government contingency in our 18  
15 municipalities that are very focused on solar power, so it  
16 is a friendly business environment for the solar community  
17 and for the energy efficiency community. I am going to talk  
18 today about two sectors, one that I will call our mature  
19 sector, which is the solar industry, and 2) a growing  
20 interesting sector which is the biofuels sector. Next  
21 slide, please.

22           In thinking about San Diego's solar assets and our  
23 solar economy, I want to give you just a couple of quick  
24 factoids in addition to the fact that we have 181 solar  
25 companies. We were recently identified by Environment

1 California as the number one solar city in the state and  
2 that is because of the amount of installed capacity we have,  
3 given the size of our region. We also have tried to be  
4 creative in bringing new and different solar assets to our  
5 region, and this is an ARRA program that we participated in  
6 rather effectively, and I am talking about it here because  
7 it has done what some of the previous speakers talked about,  
8 which is it sent an important market signal that San Diego  
9 cares about solar power, and we are interested in diverse  
10 products and diverse sources of revenue. The CREBs, or  
11 Clean Renewable Energy Bond, just as a background, is an  
12 ARRA program that is run through the IRS. It allows for,  
13 believe it or not, no or low interest bonding capacity so  
14 that municipal entities can install solar power on their  
15 rooftops. We thought it was an interesting program for our  
16 region, given that we have 18 small municipalities that  
17 would not have otherwise taken advantage of this program.  
18 So, we put together a coalition and applied and were very  
19 successful. California as a whole was successful.  
20 California - there was \$800 million available in the last  
21 issuance, California obtained \$650 million of that \$800  
22 million. In San Diego, we won an allocation of \$154  
23 million, so one of every five dollars available nationwide  
24 came to San Diego for this program. So, this is enabling  
25 small cities like the City of Santee or the City of Lemon

1 Grove to install solar when they otherwise may not have had  
2 the opportunity to do so. It also has sent a very important  
3 signal to our private sector members like Kyocera, like  
4 Siliken Renewable, that we are interested in diverse  
5 financial models around solar projects; it is not just a PPA  
6 environment. We have the Clean Renewable Energy Bond, which  
7 requires the municipality to own and operate its own solar  
8 facility, so that is a different financial model and a  
9 different financial relationship with the private sector  
10 company, than a PPA. And that is to the benefit of the  
11 market.

12           So, I wanted to expose you to this successful  
13 program in San Diego. The CREBs program is a three-year  
14 opportunity, it is use it or lose it, and we are now about  
15 11 months into the program. We do have some municipals who  
16 are actually out on the market and have had their bonds  
17 approved, and will be starting to building projects. We are  
18 tracking this very carefully because I do not want this to  
19 be seen as a black eye, that we obtain the allocation and  
20 then do not use it. You will see how this feeds in, in my  
21 next slide.

22           Solar manufacturing - this is a more specific topic.  
23 Before I get into the details, I would simply underscore the  
24 prior speaker of the Silicon Valley Leadership Group, that  
25 it is really less about the specific manufacturing programs

1 and more about what kind of policy and market environment  
2 can you create to send the signal to solar companies, both  
3 California grown and internationally grown, to do business  
4 here. And as I polled our solar manufacturing companies in  
5 the region, here is some of the feedback they gave me and  
6 wanted me to relay. And that is that it is really critical,  
7 when you are looking to expand or identify your  
8 manufacturing facility, they are looking for a place, then,  
9 where they can lower their costs and improve their product,  
10 and they are trying to find locations where they can do  
11 both. The first comment of all of my manufacturing partners  
12 was, "It is very difficult to locate a manufacturing  
13 facility anywhere in California." I am delighted that, in  
14 San Diego, we have two energy companies that are  
15 manufacturers, one of them is Kyocera Solar. They elected  
16 to expand their current facility. We think that it will  
17 have a net impact of around 75 new jobs. The reason they  
18 elected to expand are, 1) they thought the San Diego Region  
19 had a strong commitment to solar, and they saw the CREBS  
20 Program, in particular, as a very important signal that we  
21 were willing to invest in different types of manufacturing  
22 and financial products, 2) they think California, in  
23 general, has an opportunity to much more effectively open  
24 its solar market through creative programs like the Feed in  
25 Tariff, they see the European market as an important

1 indicator there, so wanted to expand their operations in  
2 California for those reasons. They like to be co-located  
3 near their markets, yet another reason they chose San Diego.  
4 Siliken Renewable Energy is a Spanish company, they too  
5 elected San Diego and we think we will see an increase in  
6 workforce of about 100. They, too, are very interested in  
7 diverse financial products, which, this is really about the  
8 theme of create demand, make sure that you have demand and  
9 the companies will elect to grow and continue to invest in  
10 themselves. The last point that I will make here is that we  
11 are in - the region of San Diego is in active discussions  
12 with two international solar companies that are looking to  
13 site a manufacturing facility. We think we are the only  
14 region in California that they are talking to. I know for a  
15 fact that they are talking to other states like Arizona and  
16 New Mexico. And some of the feedback we get from them is,  
17 "Your business environmental, generally, it is very  
18 difficult to do business in California." They like the new  
19 manufacturing tax credit, but we do not know, it is to be  
20 determined, whether they like it enough, and whether that  
21 will overcome the general malaise that they feel in terms of  
22 whether or not the welcome mat is out for new manufacturing  
23 in California.

24 Moving on to the next slide, and this is my last  
25 slide, to transition from solar manufacturing to a new and

1 interesting area, another growth opportunity for San Diego  
2 and, we believe, for the State of California, is in  
3 biofuels. Our region has over 30 biofuels companies, they  
4 are large companies like General Atomics, and SAIC, and  
5 medium-sized companies like Sapphire Energy and Synthetic  
6 Genomics, which is fast becoming a large company, and very  
7 small companies that are still in R&D phase, looking for  
8 their first round of private sector funding. And they have  
9 located in San Diego because of, first and foremost, the  
10 world class research there with UC San Diego, the Scripps  
11 Institution of Oceanography, etc., but they are also there  
12 because of the proximity to the Imperial Valley, which, as  
13 you know, has a very high unemployment rate right now. And  
14 we see the Imperial Valley as an important key in pre-  
15 commercialization and commercialization because they have  
16 irrigated agricultural land that is not being used. So,  
17 here we have the opportunity to do what San Diego and, in  
18 many ways, what California does best, which is do much of  
19 the discovery and early innovation in San Diego, in our  
20 region, and identify a region, Imperial Valley, and start to  
21 build up the pre-commercialization expertise and testing  
22 that is so necessary to actually get to commercialization.  
23 So, that is why we think San Diego is special around  
24 biofuels. This is an opportunity where I would like to not  
25 see Dorothy Rothrock's chart in ten years, showing a

1 declining opportunity around manufacturing. What is  
2 happening with biofuels is, Clean Tech San Diego and others,  
3 we recently won a grant through GoED, a challenge grant, a  
4 \$4 million grant to start training new biofuels employees.  
5 This is a robust area of economic opportunity for us. In  
6 San Diego, alone, it contributes over \$100 million of  
7 economic activity already in its early stage and over 400  
8 jobs. We think that, as we move into commercialization, it  
9 is going to be critical that we address the skilled  
10 workforce issues, and it is going to be critical that we  
11 start thinking now about what manufacturing and  
12 commercialization needs will this new business have, and how  
13 can we position California, and my interested San Diego, to  
14 make sure that the second and third manufacturing plants are  
15 built in California, not in New Mexico, which is where the  
16 first biofuels manufacturing plant will be built. So, I  
17 suggest that an area, a positive area of focus, may be to  
18 look at these new industries, and there are others in  
19 addition to biofuels, and identify where we might be able to  
20 start working together now with the private sector to not  
21 only train the skilled workforce, but identify the rules,  
22 the market conditions, and the regulatory environment, that  
23 we need to make sure that we are ahead of the curve and not  
24 behind it, in siting these new commercial facilities. Thank  
25 you. I look forward to any questions you may have.

1           CHAIRMAN DOUGLAS: Thank you, Ms. Bicker. It sounds  
2 like you are doing tremendous work and it was a really  
3 impressive presentation. And every time I jotted a note to  
4 ask you a question, your next sentence answered the  
5 question, so I really only have one question left after this  
6 happened three or four times, and that was - maybe two - one  
7 question is, you mentioned that I guess there were two solar  
8 manufacturing facilities located in the San Diego Area, and  
9 you think that the San Diego Program, which sounds really  
10 robust and really interesting, was a big incentive for them.  
11 Does that program include any incentive to actually use  
12 locally or state manufactured PV? Or is it just proximity  
13 to the program and all of the connections and the market  
14 access that that brought?

15           MS. BICKER: It is - they are Federal funds, so they  
16 do not contain any kind of buy local provisions. We are  
17 trying to structure the program so that our participants are  
18 active members in the San Diego Region, are aware of and  
19 engaged with the municipal partners who will be acquiring  
20 those products and services. So, we are proactive about  
21 putting them in the same room, but there are no specific  
22 requirements to hire local.

23           CHAIRMAN DOUGLAS: Okay. You know, I think that is  
24 the only question you left me with, it was a great  
25 presentation. Thank you so much. Commissioner Eggert.

1           COMMISSIONER EGGERT:  Actually, just a quick  
2 comment.  I am fairly familiar with a lot of the work being  
3 done in the biofuels area in San Diego and the SD-CAB group,  
4 and I think you had actually mentioned this in your  
5 comments, and that is the proximity to the University there,  
6 being able to use that talent, and the expertise, and the  
7 research coming out of that has been sort of critical, also  
8 building upon the significant investment in biotech for the  
9 last 10-15 years.  And so I think, you know, when we were  
10 looking towards how we build up some of these regional  
11 clusters, you know, really thinking about all the various  
12 assets that exist within that region, and I think San Diego  
13 has done a brilliant job in this one particular area, for  
14 sure.

15           MS. BICKER:  Well, on the biofuels work, the Edge  
16 Project, where we will be training employees, is a  
17 collaborative with SD-CAB, so the University is involved  
18 with biotech and with Clean Tech San Diego, and the Regional  
19 EDC, and the Workforce Partnership.  And we think that those  
20 key partners were important in terms of giving us a running  
21 start to train an employee base.

22           CHAIRMAN DOUGLAS:  All right, well, thank you so  
23 much.  Let's move on.

24           MR. RILLERA:  Gary, how about we move this  
25 conversation to Sacramento?

1           MR. SIMON: Okay. And I am jealous of everything  
2 that Lisa said. But my name is Gary Simon. I am here as  
3 the Chairman of the Clean Start Program of the Sacramento  
4 Area Regional Technology Alliance, or SARTA. I am also a  
5 Board member of SARTA.

6           SARTA's mission is to support and encourage the  
7 growth of an ever larger tech sector in this area. We have  
8 focused on three, Clean Tech is just one, Med Tech is  
9 another, and the standard Computer and Software Tech is the  
10 third. It has been a growing area in this region, and a  
11 fact about which we are quite proud. By the measure of  
12 collaborative economics published in the Next 10 Report,  
13 fortunately in this region, we have seen employment grow in  
14 the last 10 years by 87 percent, it is the fastest growing  
15 in percentage terms in the state over the period they  
16 examined, and of course we would like to make that ever  
17 bigger. There are about 13,000 jobs in Clean Tech here in  
18 the Sacramento Region, and that is defined everywhere from  
19 Stockton, up to Chico and Grass Valley, and over into Dixon.  
20 So, it is a large area, but it is nice to have that number  
21 of jobs. We also map where companies are, it is available  
22 on our Website at [Cleanstart.org](http://Cleanstart.org), and it has been in our  
23 progress reports, which I have distributed to the  
24 Commissioners before. Right now, we have 115 companies in  
25 Clean Tech, not including the solar installers and the

1 architects and consultants, so it is a fair amount here. We  
2 have eight companies out of McClellan Business Park that are  
3 engaged in some form of manufacturing that is new, and that  
4 has been very positive for us. We are also the recipient in  
5 this region of one of the RICO grants, the Regional  
6 Innovation Clusters of Opportunity. We are also one of the  
7 Innovation Hubs like San Diego with a focus on Clean Tech.

8 Most of you know that I have been around the block  
9 on energy policy and management of large companies and small  
10 companies for the last 40 years, including being the CEO of  
11 a clean tech manufacturing company, a position from which I  
12 retired at the end of last year. So, I have worked with  
13 early stage companies, not only here in this region, but in  
14 New England, so I see some contrasts there. And my  
15 contribution today is from the perspective of building the  
16 small and early stage, the seed stage, Clean Tech companies,  
17 not for the more mature ones, and it may offer some  
18 perspectives different than what you have heard.

19 What you may not know is that I am also a member of  
20 the Board of a small California-based Clean Tech  
21 manufacturing company called Capstone Turbine. They are  
22 based down in Chatsworth. They have about 175 employees, so  
23 they do meet the qualification of being small. They make  
24 small turbine engine generators for use in CHP and various  
25 waste gas applications, as well as in hybrid vehicles. I

1 find it interesting because every Board meeting, we have to  
2 grapple with this question of, do we continue manufacturing  
3 in California? And that, from the perspective of a company  
4 with only 175 people vs. one that might have thousands is a  
5 measure of the magnitude of the importance of the question  
6 that you are addressing here today. Capstone has been  
7 dealing with that problem for the last 20 years. Its  
8 current solution is to outsource more and more of  
9 subassemblies, still holding final assembly in this area for  
10 quality control and for consistency, but it is a question we  
11 ask ourselves as Board members every time. So, one of my  
12 suggestions: In considering what would make an effective  
13 clean energy business financing program here for  
14 manufacturing, I think it is useful to look at some of the  
15 inscriptions on the tombstones in that famous Valley of  
16 Death, why did those companies end up in the graveyard, and  
17 what does it mean about what you do. So let's look at some  
18 of the inscriptions. Here is one that died because it did  
19 not have enough money to redesign its product to meet the  
20 feedback from its earliest customers. Another one says,  
21 "Couldn't get enough customers to get economies of scale to  
22 get their costs down fast enough." A third one is, they had  
23 customers, but they could not get enough funding to pay the  
24 upfront costs of initial low-volume manufacturing, and they  
25 could not meet their contract deliveries. These are common

1 problems that small companies face, and it is the real ones  
2 that are out there for them. Hardly ever in this graveyard  
3 is there a tombstone that reads "Couldn't get a property tax  
4 break," or, "Had to pay too much for wages," or, "Paid too  
5 much in income taxes." These are not the problems of the  
6 small companies trying to start up here. They have a  
7 problem with the cost of their products, but it is not that  
8 the wages are too high here, it is that they have too much  
9 labor in the product altogether, and they have to get to  
10 more automated manufacturing, for example. So, all those  
11 problems I list about tax breaks and wages and income taxes,  
12 problems, for sure, but they are for companies well past the  
13 start-up stage, so that is the difference in perspective.

14           The question on financing program effectiveness for  
15 you, then, is effective for which kind of businesses? Does  
16 the Commission want to deal with the problems of attracting  
17 and holding on to the more established businesses, which is  
18 a fine idea? Or the problems of a small business trying to  
19 get a foothold? Now, I am obviously here to advocate the  
20 second. It is not an easy question, though, to answer,  
21 there are a lot of tradeoffs. But you would design a  
22 program very differently, depending on which target you wish  
23 to focus, and it also affects your expectations. The  
24 larger, more established companies would bring more jobs,  
25 more quickly, than the small struggling ones, without

1 question. They would be attracted by those low interest  
2 loans, tax incentives, and low utility rates, that we have  
3 seen listed on the screen before. But they, in my  
4 experience, would also be the ones quickest to move away  
5 when another region offered slightly better incentives. So,  
6 in terms of growing roots here in the community, that is a  
7 strategy that has some difficulties. In my experience, as  
8 companies grow and their products mature, they seek the  
9 lowest cost manufacturing locations, and I do not think  
10 anything that you can do, or the state can do, is going to  
11 change that. It is not something that you can offer easily.  
12 And lots of other areas can almost always make themselves  
13 look much more attractive than this state for lower wages,  
14 lower taxes, etc. Read the list on Missouri, Kentucky,  
15 Tennessee, and Alabama. I would add to that Idaho and a  
16 number of other places that companies move from California.

17           So, trying to get the larger Clean Tech  
18 Manufacturers to move here and stay here, that is a very  
19 tough undertaking. The smaller companies, on the other  
20 hand, would find the attractions of the talent, lifestyle,  
21 innovative spirit, etc., in California more appealing.  
22 Enhancing the appeal of these features in California would  
23 play to the strengths of the state. One could imagine a  
24 strategy of making California the preferred place for  
25 pioneering, for initial manufacturing, for continuous

1 innovation. As companies grow and become subject to more  
2 pressure to lower their costs, I do not think you can change  
3 their view over the horizon for large scale manufacturing  
4 moving someplace else, but I would say that is a fine  
5 outcome if the headquarters and the innovation brain power  
6 stayed here. And even though companies like HP did move  
7 printing operations to Idaho, they did not move *all* the  
8 manufacturing out of the state, so there is a stickiness  
9 involved if you can get the companies to headquarter here.  
10 The idea would be to increase the chances that the state has  
11 enough attractions to be sure that those companies put down  
12 roots that would be hard to sever in the future, but it is  
13 long term and somewhat tough issue to take on. But they are  
14 only going to find things attractive and put down roots if  
15 they could find a way past those tombstone issues, so let me  
16 come back to them.

17           First of all, dealing with the three that I listed,  
18 the three tombstone inscriptions I listed, involves  
19 considerable risk. They may not be appropriately addressed  
20 with debt programs to the companies, these are more equity  
21 risks than they are debt. It is hard to come up often with  
22 a scheme that would show how you would repay the loans. So,  
23 here are some suggestions of things the Commission might  
24 want to consider that involve neither direct investment in  
25 the companies as an equity approach, nor loans to the

1 companies, but I understand what money you have to deal  
2 with. Let's think about this more broadly, and some of this  
3 echoes what a number of speakers have already said. First  
4 of all, can some demand for new products, with the  
5 Commission's help, be aggregated so that sellers of these  
6 new products have less difficulty finding who the purchasers  
7 are going to be? This is a huge problem for small  
8 companies, just finding out who is out there that wants the  
9 product. Could you do that through a contest in a  
10 particular targeted area with the prize? The Commission  
11 participated in some Golden Carrot approaches on this some  
12 time ago. Could it be a competitive bid process, perhaps  
13 with some Commission subsidy of the final costs so that the  
14 user is more attracted? Could the Commission sponsor a  
15 number of project demo expos, bring together potential  
16 buyers with the products from the new companies, and let  
17 them learn about each other, shed a spotlight on what is out  
18 there? So, this approach would leverage the demand for  
19 clean energy products being created by the state's existing  
20 policies on renewables, low carbon fuels, greenhouse gas  
21 reductions, and others. It would help package and channel  
22 that demand to the innovative companies, making it easier  
23 for them to get those first orders.

24           For a start-up company, it is really not the vision  
25 of the million unit sales that may be out there, and is the

1 great upside; their survival depends on the practical  
2 problem of selling the first hundred and not losing their  
3 shirts in the process of doing so. So, sales revenue for  
4 these small companies solves a lot of other problems. It  
5 makes them more attractive to investors, it gives them some  
6 cash flow that they can get conventional loans, it makes  
7 them look more formidable in the marketplace to get over  
8 some of the reluctance of buyers to buy. If you want to  
9 give loans to somebody, give it to the purchasers because  
10 they usually have the economics that would allow the loan to  
11 be repaid, but it creates the demand for the products of  
12 those small companies seeking to get into production.

13           The second idea, is there any way you can subsidize  
14 the cost of low volume initial production? Loans for  
15 manufacturing equipment makes sense in the situation where a  
16 product is well defined and the process for making it well  
17 known, that is not usually what happens with a small start-  
18 up company. But in that larger company, yeah, commercial  
19 loans are probably available because everything is so well-  
20 known and it is not that much risk. The tougher problem is  
21 overcoming that first cost hurdle of setting up a  
22 manufacturing process for the first time when you know that  
23 it is likely to be rendered obsolete in a few years, as the  
24 process is refined, or the product modified. That is a very  
25 common pathway for getting into production, you start with a

1 batch process, you get it out there with the customers, you  
2 get feedback, you have to redesign everything, and you know  
3 eventually you have got to switch to some kind of continuous  
4 process to get your costs down. But how do you get that low  
5 volume initial production underway?

6 Third, can the Commission fund a manufacturing  
7 incubator, or several of them throughout the state? I  
8 commonly find that, when you go out and deal with the  
9 companies, the 115 in our portfolio at SARTA, especially,  
10 but also other places that I have seen in New England and  
11 elsewhere, the equipment that they need to get into  
12 production all looks like the same stuff, and they only need  
13 it for a while, until they take the next stage of  
14 production, but yet we are talking about buying equipment  
15 that, again, becomes obsolete. Do not let it become  
16 obsolete, put it in a situation where it is on a land-lease  
17 program and the manufacturing process is worked out in an  
18 incubator somewhere. In that way, the risk of equipment  
19 becoming obsolete is reduced, it is reused by others, and if  
20 you help with this, the asset goes on your books, you have  
21 some way of repaying loans for this because it is now your  
22 asset, and you have a revenue stream from the lease payments  
23 of letting people use it. Simply putting that in one place  
24 where it all gets permitted is a big help, too.

25 Manufacturing processes that requires furnaces and ovens

1 have emissions, and you have to go through and prove out  
2 that that is going to meet all the local requirements.  
3 Well, it will be nice to have those ovens installed once and  
4 you get 20 years worth of use out of them, rather than a  
5 couple years and you throw them away and you are back in the  
6 permitting process.

7           Fourth, maybe we should staff that incubator with  
8 some experienced production people to give small companies  
9 aid in understanding what they have to do. I rarely find a  
10 small start-up company that has on its team an experienced  
11 manufacturing executive. So, there is a lot of reinventing  
12 the wheels that go on, that you could eliminate if you would  
13 give them some experienced staff - on loan - or to talk to,  
14 to help the young companies work through the problems with  
15 product design for manufacturing. Maybe you could  
16 underwrite some of the costs of that. We have an example of  
17 such a company right now, here in Sacramento, with  
18 Technicon, again, out of McClellan Business Park.  
19 Commissioner Weisenmiller came out and took the tour of what  
20 Technicon is doing, and I think was very impressed.

21           Number five, could the incubator provide a starting  
22 place for some creative engineers graduating from our  
23 universities each year, and wanting to get an entry level  
24 job? There is a huge difference about my being in  
25 Connecticut and Massachusetts and looking for people that

1 have talents in Manufacturing Engineering, meaning bending  
2 metal, doing big stuff, not just writing code, and being out  
3 here. They are much more available back on the East Coast.  
4 It is hard to find a program here in California in a  
5 University for Manufacturing Engineers because I think it is  
6 viewed by many as sort of pedestrian work, but it is the  
7 work that a lot of these small companies need, so we need to  
8 start creating demand for that and a place for them to go.

9 Well, I am sure that others could think of many more  
10 ideas along these same lines, but the overall strategy would  
11 be making this state the place to be if you are a pioneering  
12 company trying to get a foothold, trying to get a start,  
13 trying to get through that Valley of Death, the state and  
14 the place where there is a helping hand in finding customers  
15 to make those initial sales, the place where manufacturing  
16 is easy to start because you can borrow some equipment, the  
17 place where exceptional talent is easy to find, the place  
18 where pioneers want to be. You can already see some of this  
19 happening with the electric car industry. You have Tesla,  
20 Fiskars, Coda, BYD, and they are all beginning to cluster  
21 out here because they are finding the right things. Well,  
22 look back in history, how did the aerospace industry get  
23 here? How did Silicon Valley get here? They did not move  
24 Boeing from Seattle down to Los Angeles, it was because it  
25 started at the small scale and grew up, and it became an

1 ecosystem and it obviously fed on itself. But it took quite  
2 a while.

3           So, in closing, in contrast to some of the other  
4 approaches you might be considering, my advice would be  
5 that, if the state wants to think big, in being the center  
6 of a clean energy manufacturing economy, start by thinking  
7 small by thinking about what the small companies need to  
8 become big. That takes longer, but I would submit it is  
9 going to make a more durable change, and a more lasting  
10 change in the economy. It is going to take a long term  
11 commitment, not just a one-time injection of funding, and so  
12 it would require you to think about this beyond the ARRA  
13 Stimulus funding, and a part of your budget going forward,  
14 but I think this is the best way to reverse a lot of that  
15 manufacturing decline that we have seen, and I think you  
16 will find a number of companies here grow up, want to stay,  
17 and create a new manufacturing base that we have not seen  
18 for a long time. But you are not going to prevent when you  
19 get to large-scale manufacturing -- the commodity cost is  
20 king -- that movement out. You should embrace that, realize  
21 that, and use that as a part of your overall plans the way  
22 this thing works. So, thank you very much for the  
23 opportunity and the invitation to be here and make these  
24 remarks. And if you want to come see the 115 companies, do  
25 not forget about the Showcase, October 26<sup>th</sup>, out at Sac State

1 where they will all be on display. Thank you.

2 CHAIRMAN DOUGLAS: Mr. Simon, thank you so much for  
3 those comments. It was extremely helpful. You have brought  
4 up a lot of really interesting ideas to us. As you probably  
5 well know, in addition to the Stimulus funding, we certainly  
6 do have programs through PIER and through the 118 program,  
7 we are looking across the board at how we can do what we  
8 have started to do here with manufacturing, and learn and do  
9 it better, and as Mr. Rillera well knows, as he was drafted  
10 to take a lead on these programs, we are marching up the  
11 steep learning curve and listening to you makes me reflect  
12 on how much further we have to go here, so thanks for being  
13 here. I have jotted down a lot of notes, I did not jot down  
14 a lot of questions for this moment, but I am sure that we  
15 will want to follow-up and really think about some of the  
16 ideas you have given us. Commissioner Eggert, do you have  
17 questions?

18 COMMISSIONER EGGERT: Let's see, maybe a comment and  
19 a question. You talked about loans to purchasers and,  
20 actually, you know, we do have some of our activities, loans  
21 to local governments for purchase of renewable and clean  
22 technologies, although we do not specifically limit it to  
23 California manufactured equipment, although sometimes it  
24 does result in purchases. I am also interested in some of  
25 your ideas about aggregating demand and I would be curious

1 about the previous examples where you have seen that working  
2 and how something like that might be modeled. And then,  
3 with respect to incubation facilities, including for  
4 manufacturing, I guess I would be interested in learning  
5 more about what has been done in that area, as well, and you  
6 had mentioned this company at McClellan, which I think I  
7 will also have to go out and take a tour of, as well.  
8 Commissioner Weisenmiller did report back favorably on that  
9 trip.

10 MR. SIMON: Well, SARTA is local and we would be  
11 happy to be over here at your convenience to talk more about  
12 some of these ideas, and also to let you know some of the  
13 things and the initiatives we already have underway. In  
14 terms of limiting the demand aggregation, or the loans to  
15 purchasers to California produced or local produced  
16 products, again, like Lisa said, our view is put the right  
17 information in, let people make their own decision. If it  
18 does not go with a local company, that is fine. But we have  
19 seen more opportunities and more instances where, if you can  
20 explain to somebody what a local company is doing, the  
21 advantages of proximity for adopting a new technology take  
22 their own course, and you do not have to put those  
23 limitations on them.

24 MR. RILLERA: Great, thank you, Gary. I have had  
25 the pleasure of touring the McClellan facility and some of

1 your member companies in respect to interest in the Clean  
2 Energy Business financing Program, as well.

3 Our next speaker is Brian Sager with Nanosolar.

4 MS. KOROSEC: Larry, I am sorry to interrupt you,  
5 but before, we do have one question on the WebEx for Mr.  
6 Simon.

7 MR. RILLERA: Please.

8 MS. KOROSEC: "How well do we promote our national  
9 message to come here and state what we are doing to sell  
10 California."

11 MR. SIMON: Is that directed to me, you think?  
12 Well, Lisa should probably answer it, too. I think  
13 everybody sees California as sort of the center of clean and  
14 green innovation, I do not think we have been out getting  
15 our messages as well as states like Michigan and Ohio and  
16 Kentucky about being a good place to build a company, but  
17 that is changing because I think we are now, as a state, and  
18 as a group of regions, putting more attention on this.  
19 SARTA was one of the founding members of a thing called the  
20 Green Capital Alliance, which is oriented towards getting  
21 that message out for this region. And I know Lisa probably  
22 - Clean Tech San Diego is doing a similar thing, and LA, I  
23 know, is doing things. The Bay Area is doing things. So we  
24 may be a bit not as well known in Sacramento as other  
25 places, but great, we are the best kept clean tech secret in

1 the country and maybe we can make something out of that,  
2 too.

3 MR. RILLERA: Great, thank you, Gary. Brian.

4 MR. SAGER: Great, thank you. Before I get started,  
5 I should comment, a personal note of thanks to the Energy  
6 Commission. The first grant we ever received at Nanosolar  
7 was a PIER Grant from the Energy Commission, about eight  
8 years ago, so that has been the start for our external  
9 fundraising efforts, so it all began in this building. So,  
10 thank you.

11 I am here to talk a little bit about what has  
12 happened at Nanosolar in the past eight years and how we can  
13 take the leap to very large-scale manufacturing, with your  
14 support. So, next slide, please. So, since that first PIER  
15 Grant, we have raised about a half a billion dollars, and  
16 that is \$400 million in private equity through four rounds  
17 of financing, and about \$97 million in Federal support,  
18 which has come from the Departments of Energy, Defense,  
19 DARPA within the DOD, the Department of Treasury, National  
20 Science Foundation, and so forth, so it has been a pretty  
21 wide array of federal agencies which have been backing up  
22 what the CEC started. And we have been building a product  
23 which I happen to have in my hand, which is a solar cell.  
24 This represents what we believe to be the world's most  
25 inexpensive solar cell. We can sell this profitably at a

1 dollar per watt, with a fully loaded system cost of roughly  
2 \$2.50 per watt, which in most areas of the country would  
3 equate to retail pricing for grid parity, which is in the  
4 \$.10 to \$.12 per kilowatt range, and peak pricing. So, what  
5 we have done in San Jose is build out what we now believe to  
6 be one of the world's largest roll to roll electronic  
7 productive facilities, so we build out rolls of cells that  
8 are thousands of feet long and several feet wide on printing  
9 presses, we have a nano structured ink, the nano of  
10 Nanosolar, our nano particles in our ink, and then we have  
11 some very high through-put roll to roll enabled production  
12 processes that has been the fruit of about 400 people's  
13 work. Over the past eight years, we have generated roughly  
14 400 patents at this point and we have, on the next slide,  
15 you can see a facility in San Jose, the upper panel there,  
16 it is about a 200,000-square-foot facility, that is the  
17 global hub for our cell printing, so the sole output of that  
18 factory are these cells. These cells are then hatched  
19 together in another factory, which we call Module Assembly  
20 Plant, 84 at a time, they are robotically welded together  
21 and placed between two panes of glass and then capsule and  
22 placed around those cells, and that becomes the solar panel.  
23 The solar panel facility, our first one, is in Germany  
24 because most of the solar market is in Europe right now. We  
25 hope to site our second Module Assembly Factory in

1 California, preferably in San Jose, preferably, literally  
2 next door to where our cell production facility is, and  
3 then, over the next several years, build out several more  
4 Module Assembly Factories on different continents as the solar  
5 markets evolve. So, the long term business model is to have  
6 one global hub for cell printing in San Jose, and multiple  
7 Module Assembly Factories around the world, and San Jose is  
8 where all of our S, G and A is, that is where all of our R&D  
9 is, all of our pilot work, and the cell production  
10 facilities, as well. Next slide, please.

11           So, this is an example of what the cell printing  
12 looks like. This is literally a roll of metal foil. We  
13 printed ink on a printing press, not unlike what you might  
14 see in a newspaper room, except we are printing an  
15 electronic circuit. This is using very inexpensive aluminum  
16 foil, so very very low cost substrate at a very very high  
17 speed. To give you a calibration point for what we are  
18 capable of, this coating machine that is pictured here has a  
19 production capacity close to a gigawatt annually. Now, our  
20 whole factory is not balanced, and so we cannot put out a  
21 gigawatt with just this machine, but to give you a sense of  
22 pricing, this is less than \$2 million of capital expense for  
23 this coating tool, and a gigawatt would be a medium-sized  
24 nuclear power plant, which, as you know, would cost tens of  
25 billions of dollars. So, this is a very different scale of

1 energy production technology, and we are really happy we are  
2 able to do this in California, and to build out the  
3 production facilities here, in a fairly organic way. Next  
4 slide, please.

5           The cell I have here represents one way we can have  
6 our form factor. We have the advantage of being able, at  
7 the end of our production, to literally cut that roll apart  
8 with a knife. And the larger the cell, the greater the  
9 current, and the smaller the cell, the less the current, and  
10 the more the number of interconnected cells, the greater the  
11 voltage. Power is current X voltage, so, for any power  
12 point, you can have fewer cells that are larger, or more  
13 cells that are smaller to have a set point, and the  
14 importance of that is, we can create different products with  
15 the same fab plant, we do not need to spend a billion  
16 dollars on a fab plant, we can just cut it ourselves at the  
17 end of this production process into a different size and  
18 shape, and put out a different product in a very capital  
19 efficient matter. So, that hopefully gives you a sense of  
20 perspective about the flexibility of the form factor as it  
21 relates to the production facility. Next slide, please.

22           This is an example of our first generation product,  
23 it is a two-square-meter blast plane with 84 cells built in,  
24 and this is specifically designed for utility-scale power  
25 plants, so we are really not focused on the residential

1 market at all, and to a limited extent, commercial rooftops.  
2 Mostly where Nanosolar is focused, our customers are power  
3 plant developers that are trying to build power plants in  
4 the U.S. between, say, 5-50 megawatts. Municipal power  
5 plant size at a 12 kilovolt transmission level, near a  
6 substation outside of municipalities. So, from the  
7 utility's point of view, this would provide for node  
8 congestion relief, and from the end-user's perspective, we  
9 think we can provide nearly grid parity, if not grid parity  
10 pricing today without government subsidies. So, we think  
11 this is a win win for everyone involved. And we have got  
12 billions of dollars in contracts today, so we can sell  
13 everything we can make with a caveat, which is what I will  
14 get to when we talk about policy at the end of this. So,  
15 have that as an asterisk for right now. Next slide, please.

16           This is an example of two different types of form  
17 factors; the left-hand side is a free field installation,  
18 the right-hand side is a rooftop. And you can see in both  
19 situations, we actually mount clips onto our glass panels,  
20 and we have developed with a local partner in Marin called  
21 SunLink, a commercial rooftop mounting system, through a  
22 Department of Energy grant from what was called the Solar  
23 America Initiative several years ago. We are in our third  
24 and final year of that program, that is about a \$42 million  
25 grant. And that has been to create grid parity commercial

1 rooftops. We have also successfully working on these free  
2 field installations on the megawatt plus scale. Next slide,  
3 please.

4           So, this is a study that comes from Navigant  
5 Consulting that was done for the Department of Energy in  
6 2008, and most folks in the Solar industry think it is a  
7 lower bound estimate, so it is fairly conservative numbers,  
8 for every megawatt of panel production, downstream of the  
9 factory, downstream of all the supply chain inputs, there is  
10 roughly 10 jobs that are created in everything from project  
11 siting, project financing, project management, to the actual  
12 deployment of the installation, the panels, the inverters,  
13 all the electronic interconnections, the mechanical  
14 interconnections to operations, and maintenance, over 25  
15 years, ultimately to decommission and salvage at the end of  
16 life of the power plant. And if this plant is deployed in a  
17 local place, it requires local presence, so these jobs  
18 cannot be outsourced. So, there is some really tremendous  
19 advantage to downstream job creation beyond the factory, and  
20 Nanosolar supplies almost 400 people, but beyond our  
21 employees, you know, we believe as we scale and as our  
22 sister companies scale around California, that you will see  
23 a fairly substantial growth in downstream jobs, which will  
24 be skilled jobs. The next slide shows, again, from that  
25 study, some of the types of jobs that are available, highly

1 paid manufacturing jobs, which really port from deployment  
2 site to deployment site. So, we are creating a long term  
3 sustainable advantage for the state and for the employees  
4 who are engaged in those trades or professions.

5           So, how can we grow faster than we are? So, the  
6 first point I would like to make is it is not the capital  
7 involved in doing R&D experiments, it is not the capital  
8 involved in building pilot lines, we have done that through  
9 private equity raises, we have gotten substantial support  
10 from the Federal Government. Where the challenge lies for a  
11 solar company is in what we call bankability. And let me  
12 describe what that means. Solar is a fairly unique position  
13 in that our products have warranties that are 25 years in  
14 length, most of the time, which is to the best of my  
15 knowledge longer than virtually any product in the world.  
16 And when you are in that situation, and you have new  
17 product, if you have a new product, by definition, you have  
18 no operating history because your product is new. So, most  
19 of our customers are power plant developers and they want to  
20 leverage that into their project financing, usually 90  
21 percent debt, if they can. So, they are always going out to  
22 debt financiers to get debt to bring into the project.  
23 Well, when they do that, the debt financiers then go to a  
24 third-party engineer and say, "What's the risk associated  
25 with each aspect of my power plant design?" And eventually

1 they will come to the solar panels themselves, and they will  
2 come back to Nanosolar and say, "Well, what is the risk  
3 associated with your panels?" And what we can say, we have  
4 passed our UL certification, we have passed our TIV  
5 certification, we have done all the industry standard IEC  
6 61646 testing, to do accelerated aging, and so forth, where  
7 that is predictive perhaps to seven years, perhaps to 10  
8 years, but certainly not to 25. Nobody in the industry  
9 thinks that passing those certifications is a necessary  
10 proof point that you are going to have a 25-year viability.  
11 So, we have to say to them, "We don't know." Well, then,  
12 the third-party engineer says, "Well, if you do not know, I  
13 can't assign the risk." So they go back to the debt  
14 financier and the debt financier says, "Well, if there is no  
15 assigned risk, I can't provide debt." So then the debt  
16 financier goes to the Project Developer and says, "Well, we  
17 can't build a power plant." So that is what every single  
18 solar panel manufacturer faces with a new product. So, in  
19 the absence of any kind of government support, there are two  
20 paths we can take, both of which most companies do. The  
21 first is that we can do pure equity-based projects where  
22 there is no debt, so there is no need to prove to a debt  
23 financing entity anything about bankability. Nanosolar can  
24 do that right now because we have very large partners that  
25 do have 100 percent equity projects, but that does not

1 scale, certainly not into the gigawatt range, and so,  
2 ultimately you have to have some kind of operating history.  
3 So the second path is to wait, so we could wait two, three,  
4 four or five years until we have that operating history, but  
5 the entire time we are waiting, all the other solar panel  
6 manufacturers, say, from trying out other parts of the  
7 world, are filling the demand that you will be creating with  
8 your policies. So, while demand does drive manufacturing,  
9 it does not necessarily drive manufacturing in California.  
10 If you set up a policy with intense demand, you may fill  
11 that entirely with Chinese solar power manufacturing and  
12 that may not be, I think, the intent here. So, the next  
13 slide shows what we would call -- actually, please skip one  
14 more, one more, there we go -- supply and demand is what we  
15 want to talk about today, balancing supply and demand. So,  
16 we would suggest not focusing purely on demand and not  
17 focusing purely on supply, but having a balanced perspective  
18 between the two. It involves - important - to generate a  
19 market for renewable energy products, it is also important  
20 to support manufacturers in California who are trying to  
21 fill that demand, locally. So, the first concept I would  
22 like to leave you with is a product warranty concept, and in  
23 the world of product warranties, there is something that is  
24 really a three-phased risk profile for most products, there  
25 is an initial phase where there is a potentially steep

1 failure rate for any new product, with an unknown period.  
2 And unfortunately, it comes with the poor phraseology of  
3 "infant mortality," but you understand where we are coming  
4 from, a new product that is untested could fail unexpectedly  
5 in the early years. Then, there is a phase of steady stage  
6 failure which is generally very low, and that generally  
7 lasts for a long period of time. And then, there is an  
8 increasing failure rate in the third phase, which is  
9 generally a wear-out period for any product, and the number  
10 of years in each of those phases varies based on the product  
11 and the environment in which it is applied. In the solar  
12 industry, we would suggest the first phase would be less  
13 than five years to see if a product is going to be working  
14 out in the long run, and most failures will happen, I think,  
15 in the first year or two, but certainly within the first  
16 five years. And then, from years 5 to year 25, we expect to  
17 see a relatively steady state behavior, and then a wear-out  
18 period beyond the warranty, typically. So, what would be  
19 extremely helpful for many solar panel manufacturers is to  
20 have state support, and we are also approaching the federal  
21 government about this, so it could be cost sharing with  
22 federal initiatives, too, to enable a backstop for a  
23 warranty reserve that could be pooled among solar panel  
24 manufacturers to take on the risk of a new product during  
25 its high risk period, which may be the first five years of

1 its life. And after that first five years, the insurance  
2 policy, so to speak, is handed off to a private insurer,  
3 once the risk profile has been de-risked sufficiently, that  
4 the private insurer can look at that and say, "Yes, this  
5 falls within our underwriting policy."

6 Let me give you a sense of what this would look  
7 like, financially. If you are selling a gigawatt of  
8 product, say all solar panel manufacturers in California  
9 together might sell a gigawatt at a certain point in time,  
10 and if we are all selling it grid parity pricing, that  
11 implies about a dollar a watt, so that is about a billion  
12 dollars of revenue. Now, if you look at a publicly traded  
13 solar company, their auditing firm would say, "You can  
14 recognize revenue when you have got a warranty reserve of,  
15 say, 1-1.5 percent of revenue on the books." So, let's just  
16 triple that for a new product, just to be conservative,  
17 let's say that is five percent, well, that is \$50 million of  
18 that billion dollars of revenue. Well, that \$50 million  
19 does not need to be reserved by, say, a federal backstop or  
20 a state backstop, or some cost share combination, it is  
21 generally a 1:10 ratio there, so it is really \$5 million  
22 that you would need to reserve to generate a billion dollars  
23 in sales that otherwise would take three to four years.  
24 Now, I showed that slide about the job creation that comes  
25 from this. A billion dollars in sales is 10,000 jobs;

1 10,000 jobs at, say, \$40,000 to \$50,000 a year average wages  
2 creates a fairly large state income tax return. I  
3 understand this is not how this kind of policy would be  
4 scored, but from a business case, it makes a lot of sense.  
5 You have a payback period of months in this kind of a  
6 policy. So, \$5 million which could be cost shared  
7 federally, state, and with the companies that are pulled  
8 together, so it might be \$1 or \$2 million each, could  
9 generate every billion dollars of sales and generate 10,000  
10 jobs every year, for every \$1-5 million that is put into  
11 this kind of a program, it could be a revolving program, as  
12 well. So, I wanted to put that out there as a concept, that  
13 especially for solar, it is less critical for wind, but wind  
14 also sometimes has 10-year warranties, and not every part of  
15 that warranty, especially a turbine, is necessarily well  
16 understood with a new product, as well, so this goes beyond  
17 solar. Generally, any long term warranty time period for a  
18 renewable energy product would suffer the same issue of  
19 bankability. So, helping us overcome bankability in the  
20 short term will push us into these early revenues that Gary  
21 mentioned, for all these companies, the early sales  
22 revenues, selling those first 100 units, first 1,000 units,  
23 first 10,000 units, all require this. And any new company,  
24 irrespective of how much money they have raised,  
25 irrespective of their IP estate, irrespective of the number

1 of employees, any customer is going to look and say, "What  
2 is your viability? You are a new company, how do I know  
3 your warranty is good for 25 years? How do I know your  
4 product is good for 25 years?" So, any help we could get to  
5 get past that initial period, not as a permanent policy, not  
6 as something we would rely on for our lifetime, but just as  
7 a transition point to help us bootstrap up to very high  
8 volume manufacturing, that is extremely helpful.

9           The second point is, the federal loan guarantees  
10 that the DOE is pursuing, a similar type of structure at the  
11 state level would be helpful. And, Commissioner Douglas,  
12 you asked about the \$5 million, is it helpful for companies?  
13 Absolutely. Every dollars is helpful. The first \$75,000 in  
14 PIER funding we received was helpful. You know, everything  
15 helps us move towards the goal. And, you know, everything  
16 together adds up to a lot. So, we take nothing for granted  
17 and we are appreciative of everything, everyone in the  
18 industry is. So, we thank you for the work you are doing  
19 here.

20           SB 71 was another critical piece here. A lot of  
21 folks think that, with SB 71, though, that suddenly  
22 California has an advantage over other states, but in  
23 reality, there are only three other states that taxed the  
24 factory tools on factories that could cost hundreds of  
25 millions of dollars before they had a cent of revenue. So

1 SB 71, what it does is it levels the playing field with  
2 other states, it does not put California ahead of any other  
3 states, it catches California up to where the other states  
4 have been for many years, so it removes a disincentive from  
5 leaving the State of California, which is good, and we  
6 appreciate it, but the job is not done there to create a  
7 competitive advantage to stay in California. So, from the  
8 solar energy and, I think, for wind, as well, this concept  
9 of a product warranty, backstop that would be supported  
10 through some kind of combination of funding would be very  
11 helpful, loan guarantees to help build out manufacturing is  
12 very helpful, and those are all supply-side that generate  
13 support for the manufacturing environment here.

14 On the demand side, I think we are already well  
15 suited for the performance-based incentive programs that  
16 have been set up, the renewable electricity standards, the  
17 portfolio mixes that many utilities are required to have,  
18 all of those are generating demand, but the supply side, we  
19 need to balance against. Now, if we can go back three  
20 slides, I know I am going slightly out of order, yes, this  
21 an important slide. This shows you the greenhouse gas  
22 emissions of a lifecycle analysis that was done for our  
23 panels vs. other types of technologies. This is a cradle to  
24 grave analysis, everything from raw materials extraction on  
25 the ground to assembly of the materials into cells, all the

1 shipping costs associated with that, cells being placed to  
2 the panels, panels being sent to deployment, the cost -  
3 energetic costs, and so forth of deployment, operations and  
4 maintenance, and de-commissioning. And you can see here  
5 that Nanosolar's panels are about 15 grams of CO<sub>2</sub> equivalence  
6 per kilowatt hour today, which is less than two percent of  
7 coal today, and less than many other silicon-based solar  
8 panels, which are closer to 40. So we think there is a  
9 pretty substantial improvement in the carbon footprint. We  
10 have an ultra low carbon footprint. And as we increase our  
11 efficiency throughout the solar industry, it will actually  
12 surpass wind and, of course, be more ubiquitous  
13 geographically than wind is. So, supporting the solar  
14 industry is very important from the greenhouse gas  
15 perspective. I know this may seem obvious, but this is the  
16 quantification of that, that was done by Brookhaven National  
17 Labs and Columbia University, so some third-party vetting of  
18 these numbers, which is hopefully helpful.

19           The next slide shows, you know, we have a chance  
20 right now if we have the right kind of policy initiatives to  
21 undo a mistake that happened in the 1970s, the modern birth  
22 of the solar industry. The United States had tremendous  
23 technological development that slipped through our fingers  
24 and went to Germany and Japan, where it remains today, and  
25 everyone in the solar industry now is that Germany and Japan

1 are the two major players in terms of not only  
2 manufacturing, but a lot of end use deployment of these  
3 products, and today is a second-generation of solar  
4 technology, not only from Nanosolar, but Miasolé, Calisolar,  
5 Cylindra, Solar Power, there are hundreds of companies in  
6 California that are trying to innovate in this space in the  
7 Bay Area and elsewhere, and we have an opportunity to grow  
8 those companies here and have them stay here, so anything we  
9 can do to do that, I would not assume that there is going to  
10 be a natural proclivity to stay, there is a tremendous  
11 amount of competition. When we were siting our factory in  
12 San Jose, we were offered 50 percent Cap X subsidies in  
13 certain European Union zones that were economically  
14 disadvantaged, they would pay for half our factory, and we  
15 partially did that, that is why we are in Germany, they paid  
16 for half our module assembly factory. We were offered 10-  
17 year tax holidays in Singapore. We were offered tens of  
18 millions of dollars in R&D grants in other countries, and  
19 other states would offer no corporate income tax for many  
20 years, and all kinds of waivers on property taxes, and so  
21 forth, so there is a lot of activity going on. As Gary  
22 pointed out, though, I do believe there is a stickiness when  
23 a company starts locally. You know, I am one of the two  
24 founders of Nanosolar, and we based ourselves in the Bay  
25 Area in part to leverage the educational infrastructure

1 there from Stanford and Berkeley, and so forth, and a lot of  
2 our employees come there and they have deep roots there, and  
3 we want to stay in California, and we have a fairly  
4 automated production process which allows us to have  
5 sufficiently low labor costs that we potentially can. So,  
6 to Lisa's point before about companies in San Diego moving  
7 to where their customers are, we believe the sun belt in the  
8 U.S. is where the growth is going to be in Solar, in  
9 California, certainly, a major component of that. So, we  
10 would love to see the demand policy support that growth and  
11 we would love to site next to it, but to require companies  
12 to do so at a disadvantage on the supply side becomes  
13 increasingly tenuous over time, and as they begin to scale.  
14 So, again, the balance between supply and demand will not  
15 only allow manufacturing to remain in California, it will  
16 allow innovation to remain in the United States and avoid a  
17 second wave of outgrowth out of the United States and help  
18 us build a renewable energy mix with ultra low carbon  
19 footprints at scales and to many gigawatts. Thanks.

20 CHAIRMAN DOUGLAS: Well, thank you so much. These  
21 are great ideas and - who are you talking to at the federal  
22 level about the warranty issues? Is it DOE or is it their  
23 Loan Guaranty Program?

24 MR. SAGER: So, who aren't we talking to at the  
25 Federal level? I was in D.C. yesterday. We are talking to

1 all kinds of folks in the Senate and in the House about  
2 this. There is a piece of legislation, the Clean Energy  
3 Deployment Act, or CEDA, the "Green Bank" as it is more  
4 generally known, there is a phraseology for insurance in  
5 there, we are trying to get some clarification on what that  
6 exactly means, does it mean potentially product warranty  
7 insurance? Or is this insurance for a company? And from  
8 what we understand, it will be more generally referred to as  
9 product warranty insurance. Now, whether CEDA goes through  
10 is another question, there are only 10 days left in session  
11 on the Hill right now for this session of Congress, and  
12 there is some movement towards Energy legislation; if it  
13 does not happen now, after the August recess, there is  
14 potential for movement there. We are also talking to the  
15 White House, we are talking to the Department of Energy, we  
16 are talking to the Department of Treasury, we are talking to  
17 the Department of Defense, because they have a Green  
18 Initiative, as well, for renewable energy mix for all of  
19 their bases, so there are a lot of discussions that are  
20 going on and we are trying to formulate the best leverage  
21 points right now. What we would suggest, if the CEC were  
22 interested in this, is a pilot project, to lead the way with  
23 a small amount of money, to demonstrate what could be done,  
24 and to track the return on investment in a way that  
25 everybody else could see in a transparent manner and say,

1 "Well, this program looks like it could work," because right  
2 now, folks are saying, "Well, where is the precedent for  
3 this kind of program?" And I know of two precedents, one is  
4 crop protection insurance for the Department of Agriculture,  
5 and the Import Export Bank has a credit risk subsidy  
6 insurance, as well, for a lot of the export policies that  
7 are going on. So there are two federal insurance  
8 precedents, there are probably more, but those are the two  
9 that I am aware of. But, to many of the points made this  
10 morning, and folks' comments, tracking the data is non-  
11 trivial, so if a pilot project were created and we were to  
12 intentionally structure it such that it were easily tracked  
13 now, that would be extremely helpful to everyone.

14 CHAIRMAN DOUGLAS: Great, thank you. And one other  
15 question I had is whether you could give us a little insight  
16 into the journey from your first PIER grant to maybe your  
17 next major grant, or major step, that really got you guys  
18 going from PIER grant to where you are now.

19 MR. SAGER: I would be happy to. Our Series A  
20 funding was really about Proof of Concept, so we were given  
21 sufficient money to - we had Angel investors, a lot of  
22 entrepreneurs who are my friends, you know, who put in very  
23 small chunks of money, they helped us build out a lab to  
24 test out the technology at the Proof of Concept level, so it  
25 was essentially materials science experiments - do the

1 materials have the durability and the functional properties?  
2 That is what our Series A was about. Our Series B was about  
3 device performance, could we actually produce devices that  
4 have the kind of power output that we would need to be a  
5 commercially viable product? Our Series C was all about  
6 pilot line Proof of Concept, could we actually produce this  
7 with a manufacturing cost where you could imagine, at scale,  
8 what it would be? Obviously, it would cost more at very low  
9 volume, as Gary very eloquently point out, but if you were  
10 to make some fairly defensible assumptions about what could  
11 happen at high volume, what happened at the pilot line, and  
12 that is where we got our Series C funding, which - our  
13 Series A was about \$5 million, our Series B was about \$30  
14 million, our Series C was about \$75 million. Our Series D  
15 was to build out the manufacturing plant, and that was about  
16 \$300 million. And that was with strategic partners, some of  
17 which are our customers, who very deeply vetted our pilot  
18 prototypes and the kind of process control data - I would  
19 not say statistical process control data, but nevertheless,  
20 numerical process control data we had from our pilot line to  
21 vet the manufacturing process, to show that scalability was  
22 likely. So, at this point, you know, we have vetted our  
23 cost structure very deeply with, we believe, some of the  
24 most sophisticated solar investors in the world, who have  
25 written fairly large checks, and our customers, as well at

1 this point. We have certainly gone through our product  
2 certifications, so we have, you know, TIV and UL testing  
3 complete, and that is an ongoing pipeline, but we feel very  
4 comfortable and we understand performance and reliability  
5 and costing. So, the frustration for us, and many of the  
6 other companies that are in this place, comes down to this  
7 bankability period, so rather than call it a Valley of  
8 Death, I would call it a Valley of Bankability. You know,  
9 you are trying to get through this period of time where you  
10 are proving it out, yes, the product performs in a way that  
11 has a certain risk profile to a customer, while you last  
12 long enough to bring in revenues from that period to get to  
13 the next stage. And as for the product warranty, it really  
14 is helpful, loan guarantee programs are helpful, too, just  
15 because of the amount of capital that is involved in  
16 building out factories. For us, it is the hundreds of  
17 millions of dollars. Tax credits are a little bit less  
18 helpful because, you know, if we have hundreds of millions  
19 of dollars of operating losses, we cannot really use tax  
20 credits, and if we try to monetize them through third-party,  
21 we end up getting into some fairly arcane tax structures.  
22 It is a boondoggle for the professional service firms who  
23 might create those deals, but it is a Management distraction  
24 for a small company that is trying to focus on product,  
25 getting it out the door and into the hands of customers.

1 So, we would rather not try to become investment bankers and  
2 really ourselves focus on the manufacturing output. So,  
3 those are some of the challenges, but the roadmap,  
4 technologically, was fairly clear, and the CEC was really  
5 instrumental in giving us a chance to prove out that initial  
6 Proof of Concept that helped lead the Series A. So, having  
7 gone through peer review here, that helped our Series A  
8 venture investors say, yes, this seems like a reasonable  
9 technology to take an initial bet on, and that led to all  
10 the other funding that we have received over time. And the  
11 Department of Energy has also been increasingly helpful,  
12 especially in the current Administration.

13 CHAIRMAN DOUGLAS: Great, thank you. Commissioner  
14 Eggert.

15 COMMISSIONER EGGERT: No questions. It is a  
16 fantastic story, though, going from PIER to commercial  
17 market.

18 CHAIRMAN DOUGLAS: It absolutely is. Now, I am  
19 going to ask the next two speakers if they would mind if we  
20 break at this point, it is nearly 1:00, for lunch. You are  
21 both okay? Well, great. We usually take an hour for lunch  
22 because we found it is very hard for people to go out, eat,  
23 and come back in anything less than an hour, so why don't we  
24 come back at 1:00, exactly - or, I am sorry, 2:00 exactly.  
25 Let's be here at 1:45 with an attempt to start then, if our

1 two speakers are able to get lunch in that amount of time.  
2 If you are not, and it is five or so minutes afterwards,  
3 that is fine. Thank you.

4 [Off the record at 12:53 p.m.]

5 [Back on the record at 1:51 p.m.]

6 CHAIRMAN DOUGLAS: All right, we will get started in  
7 about a minute. Thanks for making it back to quickly.  
8 Ready to go to get us started here?

9 MR. RILLERA: How about Michael Deck from Soliant  
10 Energy?

11 MR. DECK: Thanks, Larry. Let me thank you,  
12 Chairman Douglas and Commissioners. We were delighted to  
13 hear on Monday about our selection for the CEBFP Program, so  
14 I want to talk about that a little bit today. I also want  
15 to thank, as others have, the Commission for creating a  
16 climate here in California where a solar company can start  
17 up and grow. That is really one of the main reasons why we  
18 are here in California, partly because of the talent, partly  
19 because of the lifestyle, but mostly because our market, at  
20 least for now, is much larger here than it is anywhere else,  
21 and that is due in large part to the support for the demand  
22 side that you all and other entities in the state have  
23 provided.

24 So, I wanted to say a little bit about Soliant  
25 Energy and then talk about some thoughts for going forward.

1 Next slide. Soliant is manufacturing a high concentration  
2 photovoltaic device built from the bottom up for the  
3 commercial rooftop, not a miniaturization of an existing  
4 large scale solution, but a bottoms up built for commercial  
5 rooftops, that is intended to basically be a compatible  
6 replacement for a flat plate, so it mounts like a flat  
7 plate, installs like a flat plate, it has an integrated,  
8 fully integrated, built-in light-weight wooden tower and  
9 dual access tracker that is an integral part of the product,  
10 sold through the existing channel, so we do not have to  
11 develop a new ecosystem for this, it is sold by project  
12 developers, PV providers, those kinds of folks. It has  
13 turned out to be a great match for the performance-based  
14 incentives, and it would be an even greater match for a feed  
15 in tariff.

16 So, this is an example of some of the systems we  
17 have installed recently, these are small scale systems  
18 because we are really a start-up, we are between a tenth and  
19 a 20<sup>th</sup> the size of Nanosolar, and so we are getting started,  
20 pushing into the Valley of Death, and these are some of our  
21 systems that we have installed recently.

22 So let me have the next slide. One of our critical  
23 advantages is energy density, and in addition, when we  
24 produce the energy. So, when we produce the energy, more of  
25 it earlier in the day, and later in the day as opposed to

1 having the site kind of a co-sign approach, and that fits  
2 very very well in areas where you have a time of use tariff  
3 structure because we are shaving off more peak later,  
4 especially later in the day. There were comments made about  
5 the business climate and the cost of energy. For us, that  
6 is a dual-edged sword because we use energy in our business,  
7 and so more energy costs money, we spend more; but, to the  
8 extent that fossil and grid energy are expensive, we sell  
9 more of our product, and at better rates. So we have  
10 ambivalent feelings about trying to push down the cost of  
11 energy and, likewise, with regulations to introduce various  
12 ways of taxing and otherwise incentivizing carbon, you know,  
13 we are producing some, but we are hoping to offset that very  
14 much.

15           So this chart shows some sample systems, different  
16 technologies comparing eight days, single days' energy use,  
17 on a rooftop. This one happens to be in Palm Springs, but  
18 it could be almost anywhere. And the other advantage to our  
19 technology is that, by being distributed generation, we are  
20 on an existing exposure, so we do not need to find  
21 distribution to our site, we do not need to find land  
22 permits, we do not need to worry about environmental  
23 permits, and so on. So, for us, the bankability issue was a  
24 bit smaller. We still had bankability questions, but the  
25 bankability issue was smaller because the size of the

1 project is smaller, and the number of things that can get in  
2 the way of a successful project is a lot smaller, really,  
3 coming down to just permitting and financing. Next slide,  
4 please.

5           So, we were founded in 2005, six of us. We received  
6 a little more than \$4 million from the Department of Energy  
7 under the Solar America Initiative, but have otherwise not  
8 received significant subsidies until this week. We are  
9 currently at 45, as our staff, our headquarters and our  
10 pilot line are in Monrovia. We have about 1 megawatt of  
11 capacity right now if we chose to use it. At that run rate,  
12 our costs are somewhat high, so we do not use the whole  
13 capacity of that line. We have received UL listing on our  
14 product, and we are ready to go to large scale manufacturing  
15 along one of two different possible futures. The first of  
16 those futures would be based entirely on our investors and  
17 the Clean Energy Business Financing Program, that would be a  
18 40 megawatt planned somewhere in Southern California,  
19 probably San Bernardino, but we are looking at a few other  
20 cities. That would create 114 jobs. Our revenue to us  
21 would be about \$100 million, and we would invest about \$12  
22 million in property, in capital equipment. And as you may  
23 be able to see, the amount of capital investment for us is  
24 significantly lower than for other solar technologies. Our  
25 total capital in, so far, is about \$35 million, and we would

1 be putting another \$12 million towards getting 40 megawatts  
2 of capacity.

3 Another possible future would be a 100 megawatt  
4 plant in San Bernardino. If we ever hear from the  
5 Department of Energy Loan Guarantee Program. So that is an  
6 issue that we will discuss in a few minutes, but that would  
7 create a significantly large number of jobs, more revenue,  
8 and obviously more capital equipment. So, we are going to  
9 be getting started on a 40 megawatt plant in the next few  
10 weeks, and if we have to turn that into 100 megawatt plant,  
11 we will try to figure out how to do that.

12 So, something that I did not hear this morning that  
13 I would like to talk about is another thing that is bad for  
14 business, and that is uncertainty. Uncertainty means risk,  
15 and risk means cost. So, when you have uncertainty, you  
16 have a harder time raising the money, you have a harder time  
17 deciding what to do. If you are a research institution that  
18 has people around and they just need to find something to  
19 do, then it is a little bit easier to wait out a  
20 solicitation or a grant. But business - small business,  
21 especially - cannot really do that. So, here, just showing  
22 a few examples, not to pick on CEC in any way, and I know  
23 everybody is working hard and working very hard with what  
24 they have, but, for example, the solicitation to the  
25 research and development deployment opportunity, proposals

1 were due February. The call said that they would be awarded  
2 in April, to start in May. So we put together a proposal  
3 for things that we knew we had to do over the summer, well,  
4 that has now been revised to decide in July and be awarded  
5 in August, and we have now already done a fair number of the  
6 things we originally proposed because we had to do them, so  
7 we did them out of our own resources. So, if we are  
8 fortunate enough to receive that award, we will ask to try  
9 to modify it, to look a little farther forward and include  
10 some of the things that we still need to do. But it is a  
11 challenging process to plan around that. The Clean Energy  
12 Business Finance Program was relatively less of a slip, but  
13 it still had an extremely ambitious goal of, I believe,  
14 getting everything done around May. And here it is, July.  
15 So we are delighted we participated, but it is always a  
16 scramble to work around the timelines. It sounds from the  
17 tone of the discussion here, I guess SB 71 is moving along  
18 quite quickly, so I am not sure what the status is of that,  
19 but I will track that. Of course, the loan guaranty program  
20 is a case in point for how long must one wait to have the  
21 news from that corridor. Our proposal went in, in January,  
22 and we have not heard.

23           So other examples of places where governments and  
24 policies can help, looking at permitting and inspection, are  
25 there model processes? Are there standard practices? Can

1 the State help to train building inspectors and other folks  
2 so that there is standardization and predictability?  
3 Municipalities are looking at permitting and inspection as  
4 revenue centers, which is their right, but it does give a  
5 lot of unpredictability into that process. There are also a  
6 lot of agencies, you know, we deal with CEQA, AQMD, Cities,  
7 you do not always know how many more there are going to be,  
8 and so, understanding that full panoply is easier for a  
9 large company than it is for a start-up, it is very  
10 challenging for a start-up to find the resources to really  
11 understand that. And, finally, of course, politics always  
12 enter into it and it is hard to know whether a particular  
13 strategy or a particular long term process is going to be  
14 part of the mix after the next election season. So, there  
15 is not much that can be done about that. But, to the extent  
16 that you all and the state entities can help to provide some  
17 certainty and some predictability, that is extremely helpful  
18 for small businesses.

19 Next slide. Of course, money is great, we would  
20 love to have money. I know the states do not have a lot of  
21 money to give around right now, so that is a thing that we  
22 are all aware of. When we went out in December last year,  
23 looking to site a 100 megawatt factory and put 350 jobs, we  
24 went to several different states. We received about a \$15  
25 million offer from the State of New Mexico, combining loans

1 and outright grants and tax credits and everything. We  
2 received about a \$6 million offer from the State of Arizona.  
3 We decided to stay in California. We were able to put  
4 together about \$4 million, which is now closer to \$6  
5 million, from Enterprise Zones, hiring credits, tax  
6 increment financing, utility user tax rebates, and the like,  
7 but unlike the other two entities, that was organized by a  
8 City Redevelopment Agency that was working on our behalf to  
9 cobble together these things, whereas, in New Mexico and  
10 Arizona, those offerings were basically a state statute, so  
11 it was a lot less dependent on what person you found to help  
12 you out. And you could basically go anywhere in the state  
13 and find some very similar offer because it was in state  
14 statute.

15 Other things that everybody knows, of course,  
16 Worker's Comp, wage basis, cost of living is very  
17 challenging. We hire a lot of auto manufacturing engineers  
18 because we manufacture mechanical products, and it is hard  
19 to move them from Michigan because the cost of living in LA  
20 is a lot higher. So, all of these are things that end up in  
21 the mix. We ended up staying in Southern California  
22 primarily because it is close to home, it is the stickiness  
23 thing. And this is our first factory, so we wanted it to be  
24 close to our current engineering base. But it is hard to  
25 see how a second, more highly automated factory, would want

1 to stay also in Southern California. And, as others have  
2 mentioned, the tax credits are nice for a small company with  
3 negative margins, it is not as good, not as immediately  
4 helpful. And another thing that can help, I think, is the  
5 idea of one-stop-shopping, being able to go to a state  
6 office or even a regional office and have somebody there be  
7 able to tell you, "Here are all the things that you need to  
8 do. Here are all the programs that you can apply for. Here  
9 are all the opportunities that you have." That would be  
10 very helpful for small businesses who do not have their  
11 resources to hire full-time staff.

12 So I would like to thank you all very much for your  
13 support, and I would be happy to take questions.

14 CHAIRMAN DOUGLAS: Well, thank you very much. And I  
15 am really pleased that you were able to be successful in the  
16 clean energy manufacturing solicitation, it is really great  
17 to hear from you, and I am glad we were able to contribute.  
18 I guess you raised a number of issues that I think are  
19 really important, and let's just start with the uncertainty  
20 you raised, or the timeline around when an RFP is issued,  
21 and you put in an application, and finally you find out if  
22 you win, and then at some point later than that, you  
23 actually have a contract signed and get a check, and it is a  
24 tough process, I think, for a lot of people coming in for  
25 the first time, it can be a surprising process. And I do

1 think there is a lot that we could do to make it easier and  
2 more predictable, and that might run the gambit from being  
3 realistic with timelines and not optimistic that then makes  
4 you better able to plan, even though it might make us look  
5 like we are planning on being slow, which we do not want to  
6 do.

7           As I think many people who work with the Energy  
8 Commission realize, we have been hit by our own Perfect  
9 Storm here between the 118 program here, Stimulus, and then,  
10 on another side of the shop, trying to site projects on time  
11 to meet Stimulus deadlines. So it has been a really intense  
12 period for all of us and the good news for many CEC staff is  
13 that it looks like we are approaching the light at the end  
14 of the tunnel for this major mad rush of activity. I mean,  
15 one of the things we really want to do is take a step back,  
16 look at what worked and what did not work, look at our  
17 processes and just figure out what could go better, and what  
18 might we change to make things smoother, faster, and so on.  
19 So we would be very interested in your input either here or  
20 at other times for us to do that, I think, over the fall we  
21 will start to have that opportunity. You know, really  
22 helpful and interesting ideas in terms of one-stop-shop. I  
23 have also noticed that it would be helpful, I think, if we  
24 had a consistent place to go, or just an approach that we  
25 took. So these are great ideas. I do not have any other

1 questions at the moment, except I just wanted to say I  
2 appreciate you sharing your experience with us.

3 MR. DECK: Sure.

4 COMMISSIONER EGGERT: Yeah, I do not have too much  
5 to add. I think this was a very useful presentation and,  
6 actually, we had a meeting specifically on our AB 118  
7 program a little over a week ago, and I think probably the  
8 number one message from that was to move quicker with  
9 respect to getting the solicitations out, doing the scoring,  
10 going through all the various process steps, and sometimes  
11 we are our own worst enemy, we are significantly encumbered  
12 by process, and we are always looking for ways to help move  
13 that along quicker, and I think we are definitely taking a  
14 close look at how we can shorten some of those timelines and  
15 also whether or not there is flexibility we can provide in  
16 terms of, for example, allowing cost share to be expended  
17 prior, to be then counted in to the project total. I think  
18 the state law may have some limitations on us allowing any  
19 sort of back crediting of state funds, but... But I think  
20 this was good. Thank you very much.

21 CHAIRMAN DOUGLAS: I guess one other comment I will  
22 make is that we did get a visit recently from staff from the  
23 Department of Energy Loan Guarantee Program, and that was  
24 very helpful to us because we have been, as a state,  
25 counting on that program for many things and for many

1 benefits, and we have a lot of hope for that program, for us  
2 to understand it better, and to understand the obstacles  
3 that they face and the challenges that they face in trying  
4 to carry out their mandate has been helpful. But we have  
5 good contracts there, Commissioner Eggert and I would be  
6 more than happy to call them and try to find out if there is  
7 anything that can be ascertained about either status or  
8 timeline of your application, or that of other California  
9 companies. We are working closely with Department of Energy  
10 on a number of fronts, and so it is a communication that we  
11 could very easily make and we will give it a shot.

12 MR. DECK: I think that, I mean, it is hard for the  
13 Commission to go in and weigh in, in favor of a particular  
14 company. What would be useful to us would be some metrics -  
15 is it possible to understand, you know, out of the  
16 applications that they have, how many are in which stage?  
17 How many by number and by volume of dollars, you know, how  
18 many are in which stage? How many are making progress? How  
19 long they have been in those stages? That would at least  
20 give us an aggregate of some metrics that would be helpful.

21 CHAIRMAN DOUGLAS: Well, that is absolutely right.  
22 And we certainly feel as though we are within our rights to  
23 push them for all California companies and we tend to try to  
24 do that, but the hardest part is that months go by and they  
25 do not write and they do not call, so we may be able to at

1 least try to get a sense of what the process is.

2 MR. DECK: Right.

3 MR. SAGER: May I make one point here?

4 CHAIRMAN DOUGLAS: Please.

5 MR. SAGER: To Michael's - I would like to expand on  
6 something Michael just described. I was speaking with  
7 Jonathan Silver, who heads the DOE Loan Program, and he has  
8 very specific deal structures in his mind, but unfortunately  
9 neither of us can read his mind, and none of this  
10 information is available. If he is looking for a particular  
11 size deal, just tell us and then we will either apply or not  
12 apply, but if we do not know what he is looking for, we  
13 might right a 400-page application and go into limbo waiting  
14 to find out. So it is not as though we are trying to  
15 influence the outcome of the process, we all want a fair  
16 process, we just want to know, are we spending our time  
17 wisely and our resources wisely, you know, what are they  
18 looking for - would be helpful.

19 CHAIRMAN DOUGLAS: Well, good. And they have come  
20 out to California once and visited us at the Governor's  
21 Office and a number of other agencies. We may want to  
22 encourage them to come back. I agree with you that guidance  
23 is valuable and you need to know what the rules are, and it  
24 may or may not be the right program for you, but you should  
25 have a chance to know that.

1 MR. SAGER: Uh huh, yeah.

2 CHAIRMAN DOUGLAS: All right, I think we will move  
3 on. Thank you.

4 MR. RILLERA: Thank you, Michael. Next up will be  
5 Mike Ryan with Green Vehicles.

6 MR. RYAN: Thank you. So, I am Mike Ryan for Green  
7 Vehicles. We are a battery electric vehicle developer and  
8 manufacturer. And I appreciate the chance to tell our story  
9 here. First, we are a small and growing company, targeting  
10 the approximately 40 million residents, U.S. residents, that  
11 identify themselves as Deep Greeners, or Environmental One  
12 Percenters, or whatever moniker they might use. So, we have  
13 a specific interest that I think will be common to other  
14 industries. Next slide, please.

15 So, if you will give me one minute to just introduce  
16 the company. The core aspects for our business are, of  
17 course, electric, affordable and, then, sustainably made,  
18 and that is going to be a theme that I want to talk about  
19 here. Next slide, please. So, I guess I will start by  
20 saying - we can actually go two slides forward, please - and  
21 one more - great. So, we were initially conceived as a  
22 company that would do technology development and marketing  
23 stateside, and predominantly manufacturing overseas, and the  
24 reasons for that were really, you know, they were  
25 essentially cost drivers, low cost of labor, existing

1 facilities for doing that work and foreign government  
2 subsidies. In our case, there was also the specifics of  
3 having the lithium ion battery industry is fairly mature in  
4 East Asia because of laptop and cell phone development  
5 there. However, we were fortunate enough to have some of  
6 those dynamics change, not least of which was the help that  
7 came from California, as well as, to some extent, the  
8 Federal Government. Next slide, please.

9           So, I will address those first before I talk about  
10 the things that would benefit us in the future. First, we  
11 are, as we are hiring and making use of Enterprise Zone  
12 benefits, workforce development and on-the-job training  
13 programs, also are a key component in reducing the labor  
14 costs, which are a source of some difficulty to get over  
15 because they are so substantially different in areas like  
16 China and Mexico where we could alternatively have located  
17 our facility. As well, the AB 118 Alternative and Vehicle  
18 Technology Program and SB 71, again, very helpful, and I do  
19 not really have anything else to say about it other than, of  
20 course, I would echo the sentiment about timing, and I also  
21 understand that you all have been overwhelmed with work.  
22 So, next slide, please.

23           So, what I would say is that California is never  
24 going to be the cheapest place to locate a manufacturing  
25 facility, as was mentioned in a previous presentation, but

1 it does not necessarily need to be. One of the things that  
2 it should be, however, is the sustainable business capital  
3 of the world and, I would say, partly by getting an early  
4 start. So, first, you know, with the Brain Trust in Silicon  
5 Valley, San Diego, Orange County, and some of the other tech  
6 centers, it is already becoming a clean tech center of the  
7 world. The market for those products and the consumers that  
8 are purchasing those products are also interested in the way  
9 in which those products are manufactured, which currently  
10 there is not any real standard for communicating with our  
11 customer base about these principles. It is difficult  
12 because, although they are important, it is difficult to  
13 rise above the level of noise that occurs in marketing to  
14 differentiate between, you know, sound business practices  
15 and good marketing. So, I have hear listed three  
16 organizations that, you know, are sort of at the front of  
17 this, heading toward the direction of creating a system for  
18 reporting and really certification, I think, is what it will  
19 eventually lead to. And what I would suggest is that  
20 California recognize one or another of these, or it does not  
21 really matter which, as long as they are based on sound  
22 principles, so that we can get that stamp of approval,  
23 legitimate stamp of approval, and show that to our customers  
24 just as it is available in the construction industry with  
25 the LEED Standards. Next slide, please.

1           So, then, that would be the first step. The second  
2 step is, of course, incentivizing the adoption of those  
3 standards and, again, I am talking about transparency,  
4 reduction of waste, renewable energy input, living wage to  
5 the employees, use of recyclable materials designed for dis-  
6 assembly, and all these other principles that are well  
7 known, but nevertheless somewhat complex to communicate to  
8 our customers. So, some level of incentivization - again, I  
9 do not really have any input in terms of what type of  
10 incentives, that almost is not as important as just  
11 endorsing that as a value in creating in that value, and a  
12 clear path towards recognizing it within an operation. I  
13 would suggest potentially as an interim step, targeting  
14 sustainable business parks, you know, that may be a way to  
15 incubate some of the movement towards sustainable businesses  
16 where the costs can be shared among like businesses and  
17 start to generate some momentum in this direction.

18           And then one other point is, the financing on-site  
19 renewable energy, I know that there are a number of programs  
20 available for residential and, as well, there was the Clean  
21 Energy Business Financing Program, which we sort of missed  
22 the application deadline for, but I do not see - I have not  
23 been able to find a lot of opportunities for putting on-site  
24 and solar, or renewable energy, but that is very important  
25 for us and we would certainly like to have that available to

1 us. Next slide, please.

2           On to a slightly different topic is there were some  
3 asymmetries, I guess I would say, in terms of how the ARRA  
4 monies were distributed. And a couple of them that I would  
5 suggest trying to create parity or an equal playing field,  
6 California incentives for products manufactured in  
7 California, it would be some way to maybe correct some of  
8 those, and I do not think I need to go into what the details  
9 are, I think we have all sort of tracked the flow of money  
10 in this respect. And then one other that is interesting to  
11 us, not as directly to our company, but one of our major  
12 suppliers, is the battery financing, the possibility - and  
13 this kind of falls under the same subject of warranty and  
14 bankability. Lithium ion battery technology companies are  
15 running up against the same issues where they could do their  
16 testing, accelerated aging, and so on and so forth, but it  
17 is difficult to get financing for batteries, and it is going  
18 got be important not only for transportation, but for all  
19 the industries that are going to be looking for battery  
20 technology. And so, one way to potentially benefit  
21 California companies would be to have either warranty  
22 support or financing support for leasing of those  
23 technologies. And those are primarily the points that I  
24 wanted to make. Thank you very much for the opportunity to  
25 speak.

1           CHAIRMAN DOUGLAS: Well, thank you very much.  
2 Commissioner Eggert, you as our AB 118 Fuels and  
3 Transportation member, why don't you start?

4           COMMISSIONER EGGERT: Thank you. There are some very  
5 interesting suggestions here. Actually, your suggestion of  
6 using or recognizing specifically certification activities  
7 is an interesting one because I know, for our solicitations,  
8 often times we are asking through the application for  
9 companies to sort of attest to their environmental  
10 performance, but we effectively have to do sort of our own  
11 technical due diligence in reviewing those applications to  
12 make an assessment of whether or not they have actually met  
13 that, and that is actually the role of a lot of these  
14 organizations, is providing that sort of third-party  
15 verification or evaluation of some of those claims. So, I  
16 think that is definitely an interesting one to consider, and  
17 I do not know if you know of any existing programs that do  
18 that. Go ahead.

19           MR. RYAN: Well, I mentioned a couple. B-Corp,  
20 Ceres is another one, and GRI. Those are the ones that I am  
21 familiar with and seem to be kind of in the thought  
22 leadership in this area, but certainly there are quite a few  
23 competing organizations.

24           COMMISSIONER EGGERT: Are you familiar with any  
25 government solicitations that reference them directly as a

1 component of the criteria?

2 MR. RYAN: No, I am not.

3 COMMISSIONER EGGERT: Okay. Your comment about the  
4 battery warranty, we definitely heard that one. Another  
5 suggestion that I would be curious to get your feedback on  
6 is having a stake in getting involved in second life  
7 applications, so subsequent to some level of degradation of  
8 these batteries, then could get secured, for example, for  
9 grid reliability and distributed energy storage. Do you see  
10 potential there, as well?

11 MR. RYAN: Well, there is definitely potential for  
12 that. My sense is that that is something that is probably  
13 going to be driven by the market and I would expect to see  
14 that happen, you know, sort of naturally. And, frankly, it  
15 is probably not happening now because, with lithium ion  
16 batteries, 1) those businesses should be showing up, you  
17 know, five to seven years from now because the cycle life  
18 performance is now extended to the point where, at least in  
19 transportation, you do not go down to the point where it is  
20 no longer a viable source of energy storage for  
21 approximately that duration of time. So, if I were to set  
22 up a business whose operations were to look for second uses  
23 applications for these batteries, I would be sitting around  
24 for about five years. So that is part of it, then the other  
25 part is that, you know, really, there has not been a wide

1 adoption of battery electric vehicles or plug-in hybrid  
2 electric vehicles, as yet. But I do think that those are  
3 important and certainly we hope and expect those to be  
4 available to us as customers are looking for their second  
5 set of batteries, some half a decade down the road.

6 COMMISSIONER EGGERT: Thank you.

7 CHAIRMAN DOUGLAS: All right, I think Commissioner  
8 Eggert has hit the areas where I have questions, so I do not  
9 have any additional questions, but thank you for being here.  
10 I am glad that we were able to get the benefit of your  
11 perspective here, as well. So, I think with that, that is  
12 it for this panel. I would really like to thank all the  
13 panel members for being here. It has been really helpful to  
14 hear from you.

15 COMMISSIONER EGGERT: I agree, very good  
16 perspectives. A broad range of perspectives, all useful.

17 MR. RILLERA: The next panel will be the financing  
18 perspective. If you would come up to the table here?

19 Okay, I will lead off this portion of the workshop.  
20 My name is Larry Rillera. I am with the California Energy  
21 Commission. I will provide an overview of the Clean Energy  
22 Manufacturing Program and some lessons learned.

23 The Clean Energy Manufacturing Program is a \$90  
24 million venture enterprise here at the Energy Commission,  
25 and it is has two components, the Clean Energy Business

1 Financing Program, using American Recovery and Reinvestment  
2 Act funds; the second component is the Alternative and  
3 Renewable Fuels and Transportation Vehicles Program. I will  
4 refer to them respectively as CEBFP and the AB 118 program.  
5 The CEBFP program utilized about \$30 million, \$30.6 million  
6 in State Energy Program funds, of which there were about  
7 \$226 million that were made available to the State of  
8 California, focused specifically on the manufacture of  
9 energy efficiency, renewable energy, systems technologies  
10 components and products. The idea was that we would look at  
11 funding companies and businesses all along the supply side  
12 of the equation, \$50,000 minimum corresponded to small  
13 business access, \$5 million was the cap for the program on  
14 this fixed asset financing program. The interest rate was  
15 determined based upon the published Wall Street Journal  
16 Index, and dropped about half a percent on a specified date,  
17 and it ended up being essentially 2.5 percent. The terms  
18 were seven years, or the useful life of the fixed asset  
19 being financed. This is a public private partnership in  
20 that the public side would be the Commission and the Federal  
21 Government, the businesses would be the recipients of the  
22 funds, and the delivery through the financial development  
23 corporations throughout the state, there are 11 of them, and  
24 four of them were selected through the Business  
25 Transportation and Housing Agency to provide that

1 instrumentation.

2           We released the announcement in April and closed it  
3 a few weeks later, and issued the Notice of Proposed Awards  
4 here, last Friday. Here is the breakdown of the results, if  
5 you will, from the application side. The distribution  
6 amongst the three areas that we sought, the Energy  
7 Efficiency and Renewable Energy, and the Biogas. The Biogas  
8 was a biomethane gas production with direct injection into  
9 the transmission pipeline, consistent with the Renewable  
10 Portfolio Standard, the RPS, if you will. Most of the  
11 applications came in, in the renewable energy area, there  
12 were a few in the Efficiency area, and then there were a few  
13 in the other category, which I will not get into.

14           In terms of the financing, a considerable amount of  
15 need - I believe it was on the magnitude of \$1-5-fold. Our  
16 capacity for loans was about \$7 million, most of them were  
17 up around the \$5 million range, so we quickly got to \$30  
18 million and exceeded that significantly. And then the  
19 bottom is metrics, most of it, of course, is in the  
20 renewable energy area, and then none of the efficiency, none  
21 of the biogas. Next slide.

22           The second component for the clean energy  
23 manufacturing program is the AB 118 program, approximately  
24 \$60 million. There are four program areas here with respect  
25 to manufacturing or production. The first is the

1 manufacturing plants kind of tied to vehicles, the second is  
2 the advanced biofuel, the third is this ethanol production  
3 incentive program, and then the last is the biomethane  
4 production. Most of these applications have closed. The  
5 awards have been made on the biomethane and we anticipate  
6 results very shortly on the manufacturing plants, advance  
7 biofuel, and the third one, as well, the productive  
8 incentive program.

9           The next couple of slides are going to be a little  
10 more in terms of perspective from staff and some lessons  
11 learned. I kind of wanted to set them a little more freer,  
12 if you will, I will be. This report was published by Pew  
13 Charitable Trust in April. This is the second report in  
14 collaboration with Bloomberg Clean Energy Finance, it is a  
15 new division that was formed in Bloomberg to put this report  
16 out. This is an assessment of the energy - they  
17 characterize this as clean energy race, but this is  
18 essentially a snapshot of what the G20 is looking at, what  
19 they are dealing with both on supply side and demand side  
20 issues. Next slide. It was this slide, in particular, that  
21 sort of resonated with me as I was reflecting on not only  
22 the infusion of the ARRA dollars, but now it seems to  
23 resonate very clearly from the discussion this morning and  
24 what we will hear after me, as well. The box that was  
25 delegated, or relegated, with respect to Government was just

1 the research box, and it is clear that the Government role  
2 stretches across all of those technology areas, all of those  
3 development areas, all those manufacturing areas. And then  
4 it has traditional financing sort of below that in their box  
5 sort of format. The Clean Energy Business Financing Program  
6 and some of the 118 funds have a role disbursed throughout  
7 those segments, I simply wanted to highlight that - not only  
8 in terms of the financing, this is the financing continuum,  
9 but it is also a policy continuum, as well.

10           So what kinds of lessons were learned? We talked a  
11 little bit today, at least the presenters talked about the  
12 supply and demand initiatives. Staff conversations with  
13 companies over the past year and a half, or so, on Stimulus  
14 side and the 118 side, were about the competitiveness of  
15 California with their benchmark states. So, I had talked  
16 with a lot of companies where California was on the short  
17 list and what they were offering from the other states and  
18 kind of what we could piece together, and the conversations  
19 were very interesting in that some decided to come to  
20 California, others were still in the bubble and others, of  
21 course, took the other opportunities. I mean, that is the  
22 conversation the Commission is having with the manufacturing  
23 sector here, on a regular basis. On the demand side, they  
24 are choosing to come here to be closer because California  
25 has made the policy decisions with respect to AB 32, with

1 respect to the Low Carbon Fuel Standard, with respect to all  
2 the other elements here, including the knowledge base of the  
3 consumers. Mike Ryan indicated that the knowledge of the  
4 consumer, not just with respect to the end product, but the  
5 manufacturing process for that product, is something that  
6 the consumer is actually aware of. The supply side  
7 initiative is the funding, it is the DOE, it is some of the  
8 clean energy business financing that we offer, it is the  
9 other financing opportunities at the Treasurer's Office, it  
10 is the entire spectrum of funding that businesses are  
11 putting together as they evaluate their either development  
12 within California, or their retention within California.  
13 Business speed, this is about getting an application out,  
14 hopefully we can benchmark the private practices in this  
15 area as Michael Deck had alluded to earlier, a significant  
16 timeline with respect to the preparation of the application  
17 and then when they were able to receive the results. And I  
18 think we absolutely need to tighten that up significantly.  
19 And I am only talking about the application process, but as  
20 we look at the entire stream of processes, that we re-tool  
21 those and make those as quick as possible, and as responsive  
22 as possible to business.

23 We had several workshops, of course, to vet  
24 stakeholder interest. I think as we go forward and try to  
25 capture how we could tighten up the program, we need to have

1 a little more deeper and intensive dialogue about how to  
2 craft Generation 2 financing. That is clearly a gap and a  
3 clear opportunity, as well, because we will continue to be  
4 on the short list, but we want to be on the final list for  
5 consideration by these businesses.

6 Marketing - there was an old book I read called  
7 Gorilla Marketing, and I never forgot it, and at the local  
8 level, if you are trying to come in on budget, and you are  
9 very creative and imaginative, you are going to go very far.  
10 And to the extent that staff was able to do that, certainly  
11 that had some effect, but we clearly need to go out and  
12 devote a little more focused attention on marketing and  
13 outreach where we go into the businesses - I was very  
14 fortunate to see Brian's operation with Nanosolar and a few  
15 others, but I am anxious to get in there to see it first  
16 hand, talk the talk, walk the talk, and then make that a  
17 real corporate reality for the Energy Commission.

18 The guidelines are static right now, they were in  
19 place, they were developed, they were approved, they know  
20 them. Given the results from the Clean Energy Business  
21 Financing Program, we need to evolve those. I am not going  
22 to say "re-do" those, but certainly get them to a place that  
23 is responsive to the economy and to industry right now. I  
24 say that in that it will also have a point in time  
25 association because, you know, five years down, there may be

1 a new market, or a new technology, where folks are making  
2 some money off of, and then we kind of re-tool those  
3 guidelines.

4 And then, my last remark would be on the  
5 partnerships. This is a true public private partnership,  
6 all around. We are continuing to grow the 118 side with  
7 respect to those PPPs, but to the extent we allow the other  
8 two Ps to participate in the design and the architecture of  
9 the program, I think, is going to be significant to the  
10 success of the programs with the Commission. And those are  
11 all my remarks.

12 CHAIRMAN DOUGLAS: Thank you, Larry. I do not have  
13 any questions at this time. Do you?

14 COMMISSIONER EGGERT: No.

15 CHAIRMAN DOUGLAS: All right, let's keep moving.  
16 And I apologize to the panel for us being, of course,  
17 behind. We are usually behind in IEPR workshops, but we had  
18 more questions than usual, so we are particularly behind  
19 today.

20 MR. RILLERA: Paul?

21 COMMISSIONER EGGERT: And I would say the reason I  
22 do not have any questions is I have had many conversations  
23 with Larry over the last several weeks, so most of them have  
24 been answered.

25 MR. RILLERA: Next is Paul Frankel with the

1 California Clean Energy Fund.

2 MR. FRANKEL: Good afternoon, Commissioners. Thank  
3 you for the opportunity to speak with you today about this  
4 very important topic. My name is Paul Frankel. I am with  
5 the California Clean Energy Fund. Why don't we go to the  
6 next slide and I will jump right in and tell you a little  
7 bit about who we are, what we do, and then I want to focus  
8 in on a couple of very specific aspects of the manufacturing  
9 question in California.

10 California Clean Energy Fund is really a set of  
11 organizations that are united by a common mission, and that  
12 is to accelerate the development of clean energy markets, in  
13 general, as well as the adoption of clean energy  
14 technologies. And we go about implementing this mission  
15 through two different means, one is through our market  
16 strategy and solutions shop, which I run, called CalCEF  
17 Innovations. We tend to focus on gaps and barriers that are  
18 preventing the development of clean energy markets and the  
19 adoption of these technologies, and we try to analyze those  
20 very specifically and also come up with solutions to address  
21 those and overcome those gaps and barriers, and implement  
22 them as much as possible. So we like to refer to ourselves  
23 internally as a "do-shop," not just a think tank, but a do-  
24 tank, as well. On the other side, we also do some product  
25 development, and by that I mean we try to develop both

1 suggestions for public policy, as well as new business  
2 models and, in some cases, new financial products. And  
3 then, through our sister organization, CalCEF Capital, we  
4 have the financial means to implement some of those at a  
5 commercial scale. So a couple of examples of maybe a gap or  
6 a barrier that we have been able to overcome with some  
7 implementation behind them are the seed stage investment  
8 problem, so we recognize this actually in advance of my time  
9 with the organization, which has been for the last couple of  
10 years, but one of the first things that CalCEF did was  
11 understand the need for seed stage funding prior to Round A  
12 venture capital, and after friends, family and fools, and  
13 try to help these companies through the potential of their  
14 technology before they were eligible to receive financing  
15 from the Sand Hill Road crew. So we created - we thought of  
16 a concept - we hired the personnel, and we were the founding  
17 limited partner through CalCEF Capital, of the CalCEF Angel  
18 Fund. And that is a good concrete example of identifying an  
19 issue, really brainstorming on what a potential solution  
20 might be, in this case it was a little bit of a twist on a  
21 traditional approach - angel investment - rather than it be  
22 head up by a bunch of individuals, it was really a fund that  
23 focused on this early stage of investment, which is a non-  
24 traditional means of going about investing in this stage of  
25 company development, and then, again, trying to de-risk the

1 situation, or at least the perception of risk in the  
2 situation, by putting the first money on the table, and then  
3 allowing others to be second, which, as we all know, is most  
4 investors favorite thing to be.

5           The other example that we are very proud of is, in  
6 the institutional side, we created the - we were the  
7 founding grantor and ran the RFP process for what is now the  
8 Energy Efficiency Center at UC Davis, which was created out  
9 of what we saw as the need to commercialize energy  
10 efficiency technologies out of a leading University here in  
11 California. Next slide.

12           One of our other investment programs through CalCEF  
13 Capital is what we call Fund 1, it was actually the first  
14 thing that we did as an organization, was to create a fund  
15 to fund, so both organizations are nonprofit, Innovations is  
16 a (C)(3), CalCEF Capital is a (C)(4), and we invest,  
17 however, for profit, and the way we get away with that is we  
18 are an Evergreen Fund, we do not have any limited partners.  
19 And any profits that, knock on wood, are generated through  
20 our investment activities are reinvested in the achievement  
21 of our mission and in pursuit of our mission. And right  
22 now, through our four limited partner positions, one in the  
23 Angel Fund, and then three others, we have about 40  
24 companies in our portfolio, which represent a pretty broad  
25 swath of the clean energy technology landscape here in

1 California and beyond. We have about 60 percent of the  
2 companies are located at headquarters here in California  
3 and, as you can see, they kind of span the gambit, so it is  
4 renewable energy, both large and distributed, energy  
5 efficiency, transportation technologies, green building, and  
6 consumer technologies, and in one case, clean or fossil fuel  
7 technology, CoalTek happens to be a clean coal type of play.  
8 And you can see a little bit about the allocation across  
9 sectors down there on that slide, as well.

10           What we find so useful about having these  
11 relationships both directly with CEOs and operators of these  
12 companies, as well as the investors, is the opportunity to  
13 understand what are the issues that are facing them in the  
14 development of their companies and their markets, and  
15 getting customers to adopt their technologies. So it is  
16 really an incredible amount of marketing intelligence that  
17 we have access to, and we try to tap into that whenever  
18 possible to help inform our other programs. So, for  
19 example, we have an entrepreneur in residence program, we  
20 typically hire someone who is an expert in industry or  
21 academia to study an issue and, as I mentioned earlier,  
22 analyze it, crystallize the real components that sometimes  
23 seem to get glossed over in the larger conversations,  
24 generate and implement solutions.

25           So, I would like to delve into one of those further

1 today, and that is on the next slide, something that we  
2 recently studied in a white paper that was published just a  
3 couple of weeks ago, talking about the first commercial  
4 financing challenge. And we studied it within the context  
5 of renewable energy project development, but I would make  
6 the argument here today that the same challenge, in fact,  
7 applies to manufacturing companies who are seeking to, or  
8 trying to manufacture or build manufacturing facilities to  
9 manufacture clean energy technologies that have yet been  
10 unproven, or deployed at any significant scale in the  
11 marketplace. So, I want to start by talking about something  
12 that we call the Innovation Adoption Paradox. And that is  
13 that, looking at the largest emitters of carbon and other  
14 greenhouse gases, and the largest users of energy in  
15 California, one quickly arrives to the largest corporations  
16 in the state, it is the utility companies and many other  
17 large corporations, not just them, in manufacturing sectors  
18 and otherwise, knowledge sectors, as well, that are the  
19 largest users and emitters. And so they are necessarily the  
20 targets of many of these policies which we are putting in  
21 place, and have put in place here in the State of  
22 California. And, as such, they are under both regulatory  
23 compliance pressure and cost pressure to adopt new  
24 technologies that can help them meet those goals. They  
25 currently have relationships with vendors who almost by

1 definition are not able to provide them with the new  
2 technologies that are necessary to meet those goals because  
3 they have been using those technology suppliers for a long  
4 time, and they are doing business in a day-to-day fashion,  
5 as they have been used to doing for many many years. So,  
6 these new companies, however young companies that are very  
7 creative and are creating the solutions that can solve these  
8 problems, are typically ineligible to supply these large  
9 companies, and therein lies the paradox because, even though  
10 the young upstarts are innovative, they do not meet the  
11 requirements in terms of reliability, scalability,  
12 reliability supply, quality, and performance history, that  
13 large companies, especially utilities, need in order to  
14 justify a purchasing relationship from such a vendor. So,  
15 we all know about the "5-9's reliability" that was referred  
16 to back in the Telecom days, and prior to joining CalCEF, I  
17 was a corporate venture capital person in the high tech  
18 industry, and got into clean energy about eight or nine  
19 years ago, but the same thing is very much true, and I would  
20 say even more true here in the energy sector because it is  
21 not 5-9's it is more like 7 or 8-9's of reliability. Yes,  
22 telecom is important in making sure your servers are  
23 running, all that is absolutely mission critical, but as we  
24 all know, energy is kind of the primary input to so many of  
25 our industries, and if that is not there, you cannot do

1 anything else. So, just like we talked about, 5-9's in  
2 telecom, I hear utility people talking about 7-8-9's  
3 reliability. And frankly, these young companies are just  
4 unfit at this point to be able to provide that type of  
5 reliability. As a result, the lack of performance history  
6 compounds the problem and what happens is, we see a need  
7 from these companies to go beyond the venture capital  
8 capacity to finance them, but do not have the performance  
9 history that is necessary to access lower cost debt  
10 financing. And I know a number of my colleagues talked  
11 about this prior to this panel, so I will not dwell on it,  
12 but - we can move on to the next slide, as well - the  
13 problem is that, after the early stage research and  
14 development funding, after the pilot testing and  
15 demonstration finance testing, we are talking about a gap  
16 yet again that is somewhat distinct from demonstration. It  
17 is the first commercial build-out, whether it is for a  
18 project or for a manufacturing facility, how do we go from  
19 hundreds of gallons to pilot and demonstrate that the  
20 technology works, or tens of megawatts of power to millions  
21 of gallons and thousands of megawatts of power, how do we do  
22 that in a way that is cost effective and can be financed by  
23 the traditional players? So, there is a gap there between  
24 number of dollars needed with people that have risk  
25 appetite, and performance history with people that have more

1 dollars, but less risk appetite. And that is the first  
2 commercial project gap that I think also applies not just,  
3 again, to the renewable generation projects, but to  
4 manufacturing, as well.

5           And we are talking about not just incremental  
6 technology here, but it is really evolutionary and  
7 disruptive technology, and we believe at CalCEF that all  
8 three of these are needed. We need incremental technology,  
9 we need to go from, you know, a better - I like using the  
10 typewriter example because at one point in the United  
11 States, there were 52 typewriter companies, and now I do not  
12 think there are any. What happened? Well, they were  
13 incrementally improved by adding going from mechanical to  
14 adding correction tape and things like this, that was  
15 incremental, and then evolutionary technology came along and  
16 we went from manual to electric, but then we had a  
17 disruptive technology, and that was word processing and  
18 software and printer technology, which totally obviated the  
19 need for manual typewriters or electric typewriters. So, we  
20 believe that this type of technology disruption is, in fact,  
21 happening today in the market for clean energy, and more of  
22 those are necessary if we are going to meet our goals in the  
23 time periods that we have set for ourselves.

24           So, I want to focus on a message that, again, some  
25 of my colleagues at SARTA and Silicon Valley Leadership

1 Group talked about a little bit earlier on today, and that  
2 is really a focus on demand. Very often, Silicon Valley in  
3 the past, say, 10-20 years, has been quite successful by  
4 creating technologies in search for a problem, and I would  
5 argue that, again, for the sake of expediency, we need to  
6 focus on demand first, and demand should be driving the  
7 innovation. Policy helps with that, absolutely, and has  
8 been doing a great job in many respects, but we need to  
9 understand the large problems that these large emitters and  
10 large energy users need to solve to meet their compliance  
11 goals, to meet their cost reduction goals, and what  
12 technologies are either available now, or need to be  
13 developed in order to help them meet those goals. And so,  
14 accordingly, different pieces of the financing continuum,  
15 which Larry just talked about, need to match up to those  
16 stages of development. And I have added just a small matrix  
17 here to talk about the stage of technology readiness, but  
18 also the stage of market interest, and we need to be  
19 focusing our scarce resources in the near term on those  
20 technologies that are ready to deploy and accelerate  
21 deployment, and we need to do that by focusing on those  
22 technologies that are interesting to the market now and are  
23 ready to deploy.

24           Lastly, I will just add that, in order to help do  
25 this, I think the complementary regimen of policies and

1 public policy support, in general, really need to take the  
2 form of kind of three pieces, and number one is,  
3 understanding the nuance and the subtleties and the  
4 differences that are needed at every stage of technology  
5 development, so when we talk about demonstration financing,  
6 understanding how and why that is different from first  
7 commercial project financing, how and why that is different  
8 from seed stage financing, how and why that is different  
9 from scaling an existing operation or why evolutionary  
10 technology is different from incremental technology, and how  
11 that can be of help in the marketplace; 2) is streamlining  
12 our regulatory regimes so that, when we implement a great  
13 policy, on one hand, we are not encumbered by bureaucratic  
14 morass, on the other hand, so, understanding what is the  
15 interplay between existing and suggested policies in the  
16 future and really trying to streamline those processes for  
17 businesses, to help them both comply, but also to meet our  
18 broader policy and societal goals; and then, last, but not  
19 least, I would say a tremendous opportunity to help get some  
20 of these solutions into the marketplace is to utilize  
21 procurement regimes, both of government, utilities, and  
22 large corporation, which, when it comes to procurement  
23 practices, often look like one another, and clear  
24 communication, and if anyone has gone through this process  
25 before, they know how difficult, how confusing, how

1 bureaucratic it can be, again, helping to make that more  
2 clear, helping expedite it, helping clear pathways is going  
3 to be very very useful, and enable to make procurement a  
4 real benefit to accelerating the adoption of these  
5 technologies in the near term. So, that concludes my  
6 comments. Thank you very much.

7 CHAIRMAN DOUGLAS: Well, thank you very much. And I  
8 think what we would like to do is hear from everybody on the  
9 panel, and then have questions and panel discussion. So,  
10 thank you, and, Larry, let's see who is next.

11 MR. RILLERA: Next, we have Nini Redway, the Deputy  
12 Director with the State Treasurer's Office.

13 MS. REDWAY: Hi, this is Nini Redway, Deputy  
14 Treasurer. Thank you for inviting me. And we can go to the  
15 next slide because I know who I am. My presentation is not  
16 nearly as thought provoking as Paul's was, it is much more  
17 pragmatic and sort of focused on things that the Treasurer's  
18 Office is doing currently with financing, which probably is  
19 and typical of the state, we tend not to be the leaders in  
20 this area, but more sort of just implementing programs that  
21 we are comfortable with. I have listed up here some of the  
22 financing authorities that the state participates in and  
23 there are a number of them, there is the California  
24 Alternative Energy and Advanced Transportation Financing  
25 Authority, which is the longest named authority in the

1 world, I believe, but it is becoming famous now for the  
2 sales tax exclusion, CAEATFA. There is also a Pollution  
3 Control Financing Authority and Industrial Development Bond  
4 Financing Authority, the Debt Limit Allocation Committee,  
5 which gives out federal private activity funds, and then the  
6 I-Bank is down there and I know Roma is going to talk about  
7 that further. We can go to the next slide.

8           The typical types of financial products that we  
9 currently provide are Tax-Exempt Bond Financing. There are  
10 Tax Credit Bonds that were provided under ARRA and I think  
11 Roma will go into those more. My only comment is that I  
12 have noticed in the last year that we are now seeing a fair  
13 amount of biofuels and solar come through these traditional  
14 financing mechanisms, which is new. We are having to adjust  
15 some of the credit rating or credit enhancement that we  
16 would use, whether they are A-rated or B-rated, but they are  
17 beginning to come through these more traditional financing  
18 tools, which is, I think, a positive sign.

19           Another program or a tool that we have is a CalCAP  
20 program, which provides a loan loss guarantee, so when banks  
21 provide a loan to small businesses, the state puts up some  
22 money to make the banks more willing to provide loans. We  
23 have been trying to encourage green to come through those,  
24 but I am not sure yet, and we are working with the Energy  
25 Commission on a new program there through your 118 program,

1 so hopefully that will be successful.

2           And then last, and this is what I am actually going  
3 to spend the most time on, is the Sales Tax Exclusion  
4 because I think that is a new program and people are  
5 probably curious about that, so I think we can skip two  
6 slides. So, the sales tax exclusive, SB 71 passed in March  
7 or April, I cannot remember, and it provides a CAEATFA  
8 authority to give out a sales tax exclusion to green  
9 manufacturers. And we are working on a very expedited  
10 timeline, we hope to make the first awards in November or  
11 December. We are having our next public workshop on August  
12 2<sup>nd</sup> and Draft Regulations will be published next week, we  
13 believe. Our general approach is to try to create a  
14 predictable, fair and transparent process, we even hope to  
15 have a model on the Web that you can put your information in  
16 and kind of see whether you are likely to qualify or not, so  
17 we are trying to do the very reverse of what we heard  
18 complained about at DOE, so people will know up front  
19 whether they are likely to get the exclusion. I expect that  
20 the program - people will be able to come in monthly and  
21 apply, and within 60 days get an award or not, so there will  
22 not be once a year, or twice a year, you will be able to  
23 come in on a regular basis. There is one - there are a  
24 couple of statutory limitations, and one is that the  
25 legislation did set a soft cap of \$100 million, so every

1 time we make a sales tax award, there is a loss to the  
2 General Fund. It is not a hard cap, we can go over it, but  
3 I think it was a pretty clear indication they would like us  
4 to stick within about \$100 million. We can go to the next  
5 slide. The two requirements under the statute, one is a  
6 threshold requirement which is you have to be a qualified  
7 project, as defined in the statute, the second is you will  
8 have to go through a net benefit test, the statute  
9 essentially asks the CAEATFA evaluate that the net benefit  
10 to the state outweighed the dollar amount that we were  
11 giving away on the sales tax. We can go to the next slide.

12 So, a qualified project, that is the statutory  
13 definition, and if you can understand it, you are a better  
14 lawyer than I am. But, no, it is essentially anything that  
15 you purchase that you would pay sales tax on currently, if  
16 you are manufacturing either an advanced transportation  
17 technology, or a - we call it an alternative source  
18 renewable power system. The issue that has come up there is  
19 that we believe the intent of the legislation was to limit  
20 the sales tax exclusion to folks manufacturing component  
21 parts of either an advanced transportation system or a  
22 renewable power system; there are some who are arguing that  
23 we should be allowing in the purchase of equipment for the  
24 manufacture of a solar or wind power plant, itself, that is  
25 generating electricity. That will drive the cost of the

1 program up exponentially, very quickly. So that is an issue  
2 that is out there. I hope it will get resolved in the next  
3 couple of weeks. We can go to the next slide.

4 This is the net benefit test portion of the statute.  
5 And the statute is written that we are simply supposed to  
6 evaluate the net benefit of the program. Our current  
7 approach is there will be a sort of financial net benefit  
8 test that is done just based on the dollar loss from the  
9 sales tax exclusion, compared to the benefit to the state in  
10 additional taxes and jobs. We will also be looking at  
11 environmental benefits, greenhouse gas reductions, other  
12 pollution reduction, new jobs, so I would encourage  
13 interested parties to look at our regulations closely. I  
14 think we are currently proposing to adopt a minimum  
15 threshold score, so you do have to have a minimum benefit to  
16 the state before you would qualify. So, that is a short  
17 summary of SB 71, and I am going to leave it there and if  
18 people have questions, I would be happy to answer them.

19 MR. RILLERA: Great, thank you, Nini. Next is Mike  
20 Rizzo with Five Star Bank.

21 MR. RIZZO: Thank you. Hello, hello. My name is  
22 Mike Rizzo with Five Star Bank. We are a community bank  
23 here in Sacramento. A little bit about us real quick. We  
24 are a commercial real estate and a business bank with about  
25 almost \$400 million in assets. We have been around for the

1 last ten years. What we have tried to do in the last five  
2 years or so is to become more involved in the technology  
3 companies throughout the region of Sacramento, as opposed to  
4 just commercial real estate, and as opposed to more  
5 traditional business banking. So, with that, it has led us  
6 to some projects that we have done in clean energy, as well  
7 as other technologies. But some of the things that I wanted  
8 to quickly talk about, and I do not have a presentation, per  
9 se, from a slide point of view, but some of the issues that  
10 I have seen come up, and we are talking about an industry, I  
11 think as a couple of people said the word "bankable," and I  
12 think what they are really talking about is an industry -  
13 and I was not here this morning - but an industry that is in  
14 its infancy and is not exactly profitable at the moment, so  
15 bankability becomes an issue. Bankability, to me, means  
16 that a company has a sustainable revenue source and is able  
17 to generate profits to pay back loans, and people sometimes  
18 forget that lending is of the deposits that you put into  
19 your bank, and so we kind of have a fiduciary responsibility  
20 to make sure we make good loans, that got lost.

21 So, with that in mind, I think there are kind of two  
22 different things here, I would want to talk about project  
23 finance and then also about business lending to actual  
24 companies, themselves. With project finance, the issues  
25 that I have seen are, in general, if you are talking about

1 manufacturing of insulation of, say, a solar plant or a  
2 solar installation, generally the rates that are required on  
3 these types of projects have to be fixed at a extraordinary  
4 low interest rate over a very extended timeframe. So, by  
5 definition, it is not very profitable and the interest rate  
6 risk for the bank is just unacceptable. And so, that kills  
7 the deal right there. And I think that all is because of  
8 the costs involved of the projects, themselves. Secondly,  
9 the costs, a lot of those costs that are involved have to do  
10 with installation costs, not necessarily the manufacturing  
11 costs or component costs. And from a collateral  
12 perspective, from a bank, you know, you cannot collateralize  
13 the labor. And so if you wanted to take a -- have to go  
14 back and repossess, we have never had to do that, but the  
15 thought of having to repossess a solar farm, or even the  
16 solar on somebody's home is something I do not think would  
17 ever happen, 1) because you would not want to do it, there  
18 could be some - you may get shot, who knows? Maybe worse  
19 than having to do a car repo and, secondly, because of those  
20 costs of labor, you know, your collateral value is probably  
21 not even enough to make it worthwhile. So there are just  
22 these uncertainties within the industry that make companies  
23 or these projects hard to bank, not to say we have not done  
24 it because we have. Every once in a while, we come across a  
25 deal that does have some decent ROI and we are able to make

1 it work.

2           Bond financing - most of these deals are being done  
3 with bond financing, not bank debt financing. My concern  
4 with that is, in the coming years, and this is not to be - I  
5 am sorry to be so downtrodden here, but these are my  
6 concerns - generally, I am a pretty optimistic kind of guy,  
7 but bond financing, I think, in general, and I am concerned  
8 that the rates on bonds are going to increase significantly  
9 in the coming years, as more and more debt is issued, and  
10 not just here in the United States, but throughout the  
11 world, and it becomes much more competitive to get bond  
12 financing, which means that those bond rates are going to go  
13 up to help attract investor dollars, so that you are going  
14 to run across the same types of problems when you finance a  
15 solar project, and I am using solar as an example, because,  
16 you know, again, they need very low rates and long term type  
17 financing, so that is an issue that I am really concerned  
18 about. And of course, there is always the issue of bringing  
19 in the equity partners, and I think because it is such a  
20 young industry that equity is hard to come by, very hard to  
21 come by, and there is a lot of concerns on investors' parts  
22 for investing in projects, they are not quite sure how the  
23 cash flows are going to work, come to them, how the  
24 investment credits are going to flow back to them, how the  
25 accelerated appreciation is going to work, so there is a lot

1 of uncertainty and it is making companies - they are having  
2 a hard time bringing in equity investors.

3           So, that is that. And then, from a small business  
4 perspective, financing of small businesses in the clean  
5 energy realm, again, the risk from a bank's perspective is  
6 that bankability risk, immature type of a industry, we do  
7 have plenty of companies that are in the industry, but it  
8 seems that most of them have been in it for quite a long  
9 time, or have had a lot of expertise doing it. Brand new  
10 companies, there have been pretty few and far between, I  
11 think that is there for the venture capitalists to try and  
12 help along.

13           But one of the things I really wanted to hit on here  
14 was, from a bank's perspective, because this is such an  
15 immature industry and there is a lot of uncertainty, the  
16 SBA-7A, I think, becomes - the SBA-7A Guarantee Loan -  
17 becomes a viable kind of option for a lot of companies, but  
18 there has been some issues with that and what I would like  
19 to do is kind of discuss those with you from our perspective  
20 and from a borrower's perspective, and hope that maybe, I  
21 mean, you are not directly responsible for that, but have  
22 some influence, hopefully. So, the SBA-7A is a good way to  
23 help a bank make a decision to lend money to a company, and  
24 there have been periods of time where the guarantee to the  
25 bank from the SBA has been increased significantly so that

1 it helps the bank make a decision to give out money, in  
2 essence, it lowers the exposure for the bank. And that is  
3 great, it is good for the bank, and it is good for the  
4 companies, and it helps them develop technologies and  
5 continue on and be successful. And then, in addition, they  
6 have eliminated the fees to those companies, so that has  
7 also made a huge impact on the applications received for SBA  
8 financing. But the problem has been that that program has  
9 been on again, off again, on again, off again, so what has  
10 happened is there have been huge spikes in the SBA when the  
11 program is on, and then big drop-offs when it is off, and  
12 that is because banks are waiting for it to be reinstated,  
13 so they say, "Why am I going to make a loan today when I can  
14 get a better guarantee next month, or the month after?" And  
15 borrowers are doing the same thing because they are saying,  
16 "Why am I going to pay a 3 percent premium and have all  
17 these other cumbersome effects on me when I can just wait  
18 another month and I can have those fees eliminated?" So I  
19 think some continuity in that program would be very very  
20 beneficial. And so that is what I want to say about 7A.

21 Then, I have been told recently that the CEC has a  
22 program for banks to help guarantee some money for loans  
23 that are bank loans, not grants, or the \$30 million that  
24 Larry was talking about earlier. And I guess my comment on  
25 that is that sounds like a great program, however, I have

1 never heard of it and I am very involved, especially in this  
2 area, in this region within this area of clean tech, and I  
3 guess that is the problem. So, that is what I wanted to  
4 talk about there. So I think that is the extent of my  
5 comments.

6 CHAIRMAN DOUGLAS: All right, thank you. No, that  
7 was really helpful. I just wanted to jump in on your one  
8 question and then we will go on, and that is that I do not  
9 believe we do - I think the loan guarantee program you might  
10 be talking about is the \$50 million that went to the  
11 Treasurer's Office to guarantee PACE loans.

12 MR. RIZZO: Maybe, yeah, PACE is obviously - I was  
13 going to bring that up, but Larry told me it is probably not  
14 a good idea because, you know, I would really kill  
15 everybody. But, yeah, that is obviously a big huge  
16 influence on the uncertainty of these people, lots of  
17 contractors out there have gotten into this industry so that  
18 they can, with the anticipation of an increased market, but  
19 that market is going away, it sounds like, and that is going  
20 to put a lot of people out of business.

21 CHAIRMAN DOUGLAS: Right, well, we have hope for  
22 that market.

23 MR. RIZZO: Oh, I hope so.

24 CHAIRMAN DOUGLAS: We understand that was obviously  
25 a big step back. Okay, Larry, let's keep going. Thank you.

1           MR. RILLERA: Thank you, Mike. Next is Roma  
2 Christia Plant with the California Infrastructure and  
3 Economic Development Bank.

4           MS. CHRISIA-PLANT: Thank you, Larry. I am Roma. I  
5 am the Assistant Executive Director of the California  
6 Infrastructure and Economic Development Bank, and I wanted  
7 to thank the Commission and Larry for the opportunity to  
8 come here today and tell you a little bit out the I-Bank and  
9 a program that we have that directly assists manufacturing  
10 businesses. Next slide, thank you.

11           The California Infrastructure and Economic  
12 Development Bank, also a very long name, and we often go by  
13 Infrastructure Bank or I-Bank, even though we have "Bank" in  
14 our name, we are not a state bank as you and I would know a  
15 bank, we are a California financing authority that is housed  
16 in the Business Transportation and Housing Agency, and we  
17 finance economic development facilities and public  
18 development facilities throughout the state. But we do have  
19 one particular program that directly targets manufacturing  
20 businesses that you might be interested serving and that is  
21 called an Industrial Development Revenue Bond Program. Next  
22 slide. We abbreviate that as an IDB, Industrial Development  
23 Bond. The program provides tax exempt bond financing up to  
24 \$10 million for qualified privately owned manufacturing  
25 businesses and processing companies to provide the funding

1 for construction acquisition of facilities and equipment.  
2 And this program is a function of the Internal Revenue Code,  
3 it is one of the many conduit bond programs that the IRS  
4 has. And one of the things is that we are one of the many  
5 issuers of Industrial Development Bonds, or IDBs, throughout  
6 the state. And IDBs are there to encourage relocations, not  
7 necessarily within a state, but from state to state, we like  
8 to encourage folks to come to California, but also  
9 expansions of companies for the purpose of creating jobs and  
10 other tax benefits for the community. We are the only state  
11 issuer of Industrial Development Bonds, but we do work  
12 closely with the Treasurer's Office to implement the variety  
13 of programs that are out there, Tax-Exempt Bond Financing  
14 Programs. A lot of people do not know what an IDB is and it  
15 is actually a loan to a company to build or buy their  
16 facilities, land, and equipment, and the I-Bank is actually  
17 the conduit. We have the authority to issue those bonds and  
18 we have the access to the public capital markets. We sell  
19 the bonds in the public capital markets and then we turn  
20 around and loan the funding to the manufacturing company,  
21 and the manufacturing company is the one that agrees to  
22 repay the financing. And in order to do that, manufacturing  
23 companies need a secondary source of repayment, and right  
24 now that is a Letter of Credit, and our friend over here,  
25 the banker knows, Letters of Credits are often hard to come

1 by in today's market, but they are there, and we are doing  
2 some Industrial Development Bonds throughout the state. And  
3 Industrial Development Bonds are here to serve a slice of  
4 the manufacturing business pie, they are not here to serve  
5 everybody, they are not appropriate typically for projects  
6 less than \$2 million, they are not appropriate for start-up  
7 businesses, and you cannot use the funding for working  
8 capital, so these are funds available for the hard costs of  
9 a particular business. Next slide.

10           There are several benefits to Industrial Development  
11 Bonds, and this is a bankable business that can have access  
12 to a Letter of Credit, but because of the Internal Revenue  
13 Code requirement, they can also have access to Tax-Exempt  
14 Bond Financing, and that can be at costs lower than  
15 conventional financing, up from 20-30 percent lower, and  
16 that allows additional funding for that manufacturing  
17 business to expand more, hire more people, grow faster, and  
18 do what they do. Sometimes the financing can be longer term  
19 than conventional financing, often times up to 30 years, and  
20 it can provide funding for construction, take-out financing,  
21 land building, and equipment. And we have had many  
22 borrowers borrow IDB funding for energy retrofits to their  
23 buildings, solar and other kind of capital improvements that  
24 reduced energy costs. The Bonds can be assumable and often  
25 times there is no pre-payment penalty. I am really short

1 here and very specific, just like Nini. Here is a picture,  
2 nice pretty picture on the very last page here, of some of  
3 the projects that we have done, but I did want to point out  
4 in the top middle there, iWorks - we issued Bonds for iWorks  
5 and they are a manufacturer of energy efficiency lighting  
6 equipment, and then our Board also approved financing in  
7 April for a Pennsylvania company to expand their  
8 manufacturing business into Fontana, California, Solar  
9 Atmosphere. They are a metal coating type business, but  
10 there is somebody moving into California on occasion, and we  
11 were able to assist them with that. But that is the program  
12 that we have that directly assists manufacturing businesses.  
13 We also have programs that finance infrastructure that could  
14 support manufacturing businesses, as well as we issue Tax-  
15 Exempt Bonds for a variety of non-profit entities, and more  
16 information can be found at the Web address on the last  
17 slide.

18 COMMISSIONER EGGERT: So, what was the project at  
19 Bonnie Dune, just out of curiosity? I was just down there  
20 having some wine tasting, so -

21 MS. CHRISIA-PLANT: You know, that was before my  
22 time, so I do not know, but I do know they were a winery, so  
23 some kind of probably bottling manufacturing process.

24 COMMISSIONER EGGERT: They have a wonderful  
25 Zinfandel if you ever get down there. Let's see, I think

1 maybe in the interest of time, I am going to sort of group  
2 my questions, and then whoever on the panel is interested in  
3 responding, some of them are directed and this first one is  
4 for Paul Frankel. You had talked about one of the biggest  
5 challenges was moving towards that first commercial  
6 facility, which has a fairly large capital requirement for  
7 investment as being a significant challenge, so I guess I am  
8 not sure if I caught sort of what is the best role for  
9 government in that phase, and what instruments can be used  
10 to, I mean, given the large amount of money that is  
11 required, how can we use sort of a our scare public  
12 resources to leverage other dollars for that particular  
13 phase?

14 MR. FRANKEL: Good question. And a number of the  
15 programs that have been discussed throughout the day here  
16 are certainly very helpful. What happens is, often times  
17 these companies, when they are building their first  
18 commercial manufacturing facility, are ineligible for some  
19 of these programs and they do not qualify because they do  
20 not have the performance history, because they do not have  
21 the credit quality, because they do not have the customer  
22 base that they would need in order to do so. And so, I  
23 think often times, although some of these existing concepts  
24 are quite beneficial to the more established businesses, we  
25 need very similar programs that have different qualification

1 - I guess different qualifications, different thresholds for  
2 allowing companies to participate, different risk  
3 thresholds. And so, certainly loan guarantees, certainly  
4 direct loans, certainly tax programs, certainly Enterprise  
5 Zone programs, there are a whole host that are very helpful,  
6 the question is, you know, are they going to be helpful to  
7 the businesses that we need to help get a foothold in the  
8 marketplace, and so many of these same mechanisms, I think,  
9 can be very effective if the threshold for risk is lowered  
10 somewhat. And so the question is how do you then eat that  
11 risk? Do you accept it as given? Do you create some  
12 backstop for that through some other government facility, or  
13 through some participation with private financing  
14 organizations? Are there insurance products? So, I think a  
15 number of us in the industry have had, and continue to have,  
16 ongoing discussions about what are the opportunities for  
17 private public financing partnerships, or purely public, or  
18 purely private financing options. And I think the same  
19 question arises almost every time, which is, yes, we could  
20 do this, but you have some exposed risk that people are not  
21 comfortable taking. And so the question is less about how  
22 to finance some of these businesses directly, but more about  
23 this secondary question about what is the appetite for risk  
24 and how do we mitigate that, and through what means.

25 COMMISSIONER EGGERT: So, I guess I would invite Mr.

1 Rizzo, do you have any thoughts on that?

2 MR. RIZZO: No, I think it is exactly right. They  
3 always seem so simple from a structural standpoint, but then  
4 it is the nuances that seem to get in the way in the  
5 details. And at the end of the day, it is the guys that are  
6 putting their money into an investment and they have to  
7 weigh that investment against other investments that they  
8 could put it in, and because it is so uncertain, they often  
9 times back away, and that has been my experience.

10 COMMISSIONER EGGERT: And you had mentioned an SBA-  
11 7A, and I guess it is a back loan instrument?

12 MR. RIZZO: Yeah, so if you are not familiar, it is  
13 similar, I mean, I think CalCAP, which Nini just discussed,  
14 is a little bit like an SBA, but an SBA-7A loan is the loan  
15 that the bank lends the money to the borrower, but then the  
16 SBA, the Small Business Administration, part of the federal  
17 government, guarantees a portion of that, so that if that  
18 loan goes bad, the borrow is not able to pay us back, the  
19 government will then step in and pay us a percentage back of  
20 that. That is where - that percentage had been raised, and  
21 then lowered back down, and raised, and has been doing this,  
22 and there is no continuity in it, and so it has created this  
23 big like -

24 COMMISSIONER EGGERT: Is the percentage fixed? Or  
25 is it -

1           MR. RIZZO: No, it can be anywhere between 50-90  
2 percent, usually 50-75. What they did is they raised it to  
3 90 percent guaranteed, so it is very significant. But then  
4 there is also this - nobody really talks about it, but there  
5 is this thought out there, nobody has had to collect on one  
6 of those loans yet, that I know of, and there is a little  
7 bit of a concern that, even at 90 percent guaranteed by the  
8 government to a bank, the bank still has the concern of, "If  
9 I did not cross every T and dot every I, am I really going  
10 to get a 90 percent guarantee?" And that lingers out there,  
11 so there is a bit of hesitancy because of that, too.

12           COMMISSIONER EGGERT: So, specifically on certainty  
13 about whether or not the payment -

14           MR. RIZZO: It has not really been tested too often,  
15 so we will see what happens, but it will, no doubt about it.

16           MR. FRANKEL: Commissioner, I would like to just add  
17 one more comment if I could on your previous question. And  
18 I mentioned in my prepared remarks about the role for  
19 government procurement, and I would like to add that to the  
20 list of what government can do. Certainly, if there is an  
21 opportunity for government agencies or affiliated entities  
22 to make it easier for them to buy products from these early  
23 stage companies with a lack of performance history, the  
24 presence of a large customer that wants to put in big  
25 orders, that has an excellent credit quality, that is going

1 to make a big difference to a lender. And so any  
2 opportunity to do that, both in terms of the appetite for  
3 using those types of products and making it easier to  
4 participate in the procurement process, are going to be very  
5 helpful to these younger companies.

6 MR. RIZZO: Absolutely.

7 COMMISSIONER EGGERT: For that to be useful, does  
8 the procurement need to be tied to the specific company? Or  
9 could it be sort of, "We're going to purchase X megawatts of  
10 -

11 MR. FRANKEL: It needs to be tied to the specific  
12 company. Yeah, and certainly, I will say things like the  
13 Power Purchase Agreement Program through the PUC and the  
14 IOUs, very helpful, necessary, but not sufficient in the  
15 case of these first commercial projects, or manufacturing,  
16 or renewable generation, in either case.

17 COMMISSIONER EGGERT: Okay, that was very helpful.  
18 A couple more questions. You know, I think we are making  
19 these investments because they have the potential for social  
20 or public benefits, and that the private market is not  
21 properly accounting for those benefits; otherwise, if these  
22 were completely safe investments, we would not need to be a  
23 party. And I guess this is a question relating to how to  
24 properly account for those benefits in evaluating an  
25 investment portfolio, and to what extent that plays into - I

1 guess I would look also to the parties that are involved in  
2 the financing side - how that plays in your decisions about  
3 what times of investments you are looking to make.

4 MR. RIZZO: Well, I think it does play into a - it  
5 plays a role for us, at least, we created what we call the  
6 New Green Capital Account, which is basically a deposit  
7 account, we will call it a fund, within Five Star Bank, and  
8 basically it was a fund where all the money that we  
9 collected as deposits, we would lend back out for clean  
10 energy type projects, and we continue to do that. So, for  
11 us, finding clean energy projects is kind of a priority,  
12 that being one of the reasons. And I guess, you know, I  
13 guess it is a mindset more than anything. I do not know, I  
14 do not think it will ever have everybody on board, but often  
15 times I think that business people, they are not so, you  
16 know, carbon credits, and environment, let's talk maybe more  
17 about national security and stuff like that, which is a  
18 little bit more hard hitting to them, would be more  
19 beneficial. I always kind of felt like that was the case  
20 and I never ever hear anybody really talk about that, so...  
21 And from a marketing standpoint, somebody mentioned that  
22 marketing is, you know, there is a lot of noise out there  
23 and will admit that a lot of it is marketing for us, and  
24 hoping that we can generate more business, being green  
25 conscious, I guess, is the term.

1 MS. REDWAY: I would just add that I think that  
2 government has probably a larger role in that than private  
3 sector because we do not have shareholders we have to pay  
4 off, we have taxpayers that we have to be aware of, but it  
5 is the governing bodies that have to determine that they can  
6 provide a certain amount of funds, so I think the sales tax  
7 exclusion is an example of that, they are having us do a net  
8 benefit test that includes environmental benefits, and we  
9 are trying to set some kind of model for that, but the  
10 government is, in effect, giving away tax dollars to buy  
11 environmental benefit back, which a shareholder would not  
12 probably want that return on investment, they are going to  
13 want to have cash.

14 MR. RIZZO: It is hard cash.

15 MS. REDWAY: Yeah.

16 MR. RIZZO: Cash on cash.

17 MS. REDWAY: So I think government has a bigger role  
18 there than the private sector.

19 COMMISSIONER EGGERT: And I would definitely agree.  
20 Then, my last question is - oh, sorry, go ahead.

21 MS. CHRISIA-PLANT: I just wanted to briefly add on  
22 to what Nini had just said. I do believe that government  
23 has a role to play in figuring out what the benefits are,  
24 and often time, it may come down to figuring out what the  
25 minimum threshold benefits are before you have the

1 expenditure of government funds, and that does not always  
2 happen in all government programs. And it takes a lot of  
3 thought and sometimes it is hard to find that line above  
4 which you feel there is sufficient benefits, whatever those  
5 might be, and below which you feel that there are  
6 insufficient benefits in order to spend those government  
7 dollars. So, something to kind of consider when you are  
8 thinking about benefits and measuring them, which is hard  
9 enough, and then trying to set a threshold on top of that.

10 COMMISSIONER EGGERT: Thank you. This last question  
11 was actually triggered by a comment from a previous panelist  
12 who was commenting about leveling the playing field on  
13 battery manufacturing, given the fact that we did not  
14 receive, or received very little, if any, of the Federal  
15 Stimulus in that particular category. How do we avoid  
16 unnecessarily disadvantaging those companies who do not  
17 receive this financial assistance from government, either  
18 because they did not bother to apply, or perhaps they were  
19 slightly below the line in terms of the scoring criteria.  
20 And this might be a rhetorical question, but I would be  
21 curious if anybody has any thoughts on it.

22 MR. RIZZO: What was the question you said, again?

23 COMMISSIONER EGGERT: So, we are making a decision  
24 because of the public and societal benefits that will accrue  
25 from these investments, that we are picking a particular

1 company to either provide a grant or a loan. Obviously  
2 there are other companies that will not receive that grant  
3 or that loan. And I am just wondering how we should sort of  
4 think about that, or account for that in our strategic  
5 decisions.

6 MR. RIZZO: I do not know. What do you have to say,  
7 Paul?

8 MR. FRANKEL: It is a good question. Obviously, the  
9 best company is that which does not need any sort of non-  
10 diluted financing and can finance, themselves, even without  
11 any equity investment, and just sell the customers. I mean,  
12 if any company had the choice of either, you know, not going  
13 public, not taking venture capital, and just servicing their  
14 customer need and being able to finance that through cash  
15 flow and transactions, I think that is the preferred way to  
16 grow any company, so backing away from that, yes, it seems  
17 like the pendulum has swung in the other direction, and now  
18 there is this task and endorsement that if you get financing  
19 from some sort of government program, that means there is  
20 some inherent benefit to one technology, or one company over  
21 another, I think any clear thinker would understand that is  
22 not necessarily the case, and really what you need to do is  
23 evaluate a company on its merits, both from a financial  
24 perspective, the market opportunity, the management team,  
25 and so forth, as a regular prudent investor would do.

1           COMMISSIONER EGGERT: And actually, you just  
2 triggered one more question, if the Chairman will allow.  
3 And that is, how do we best take advantage of the expertise  
4 in the private sector in making these strategic decisions?  
5 And I know CalCEF has done some thinking about this and I  
6 know there are other models out there. You know, how do we  
7 get that input in designing our programs?

8           MR. FRANKEL: Well, certainly forums like this are  
9 very important and I think there is no shortcuts when it  
10 comes to things like this, so being able to work closely  
11 with staff, being able to have an open dialogue and really a  
12 non-judgmental dialogue about what is in the best interest  
13 of the priorities that we set for ourselves is the way that  
14 we need to approach these questions. It is a question of  
15 priorities; it is a question of values. Obviously, there  
16 are lots of stakeholders here and we want transparency,  
17 consistency, messaging, all of those things are extremely  
18 important. And engaging in a vigorous and fair debate about  
19 those things is, in my opinion, the best way to do it.  
20 Also, looking at historical examples, seeing what has worked  
21 and trying to use best practices going forward are all  
22 things that I think would be beneficial in pursuit of all  
23 these goals. So, a little bit vague, but I am trying to be  
24 as honest as I can here.

25           COMMISSIONER EGGERT: I realize the question was

1 rather broad, as well. So, thank you.

2 MS. CHRISIA-PLANT: I just wanted to add a little  
3 bit to that answer and that is that the government's  
4 resources are finite and, even if you choose to serve a  
5 particular sector, often times there is no way that  
6 government can assist all applicants coming through, or  
7 maybe some that do not ever come through. But one of the  
8 things you can be is a resource for all types of businesses  
9 or entities that you intend to serve, so if it is someone  
10 that falls below the line and they are not funded, if you  
11 have at least the information available to access other  
12 resources, or other methods or mechanisms to obtaining  
13 financing, or whatever, technical assistance, or whatever  
14 that business needs, then you are being a resource to the  
15 constituents that you serve.

16 MS. REDWAY: I would just add to Commissioner  
17 Eggert's question on how to take advantage of their  
18 expertise, which is I would try to design products where the  
19 traditional financiers are going in alongside of you, so  
20 that you are working with them as a partner on the  
21 transactions and the financial products, and then you are  
22 not just benefitting from their expertise, but they are  
23 putting risk in with you, and you know they are underwriting  
24 the deal to the best of their ability, which that is the  
25 best expertise you can get from them, because they do that

1 much better than we do.

2           CHAIRMAN DOUGLAS: Nini, when you spoke, and you  
3 spoke obviously after Paul Frankel, who provided a lot of  
4 ideas about sort of theories in terms of how we could think  
5 about differentiating between companies and differentiating  
6 between different stages of their development, and so on,  
7 and you said, well, from a government perspective, we are  
8 just talking about what we are administering, and I  
9 empathized with that immediately because that is, I think, a  
10 lot of how we felt putting this program together, and  
11 particularly under the timeline that we had to deal with,  
12 with the Stimulus Act, it was not about making sure that we  
13 had a detailed theory behind what we were doing, it was  
14 about, you know, can we put a program together that makes  
15 sense in the timeline, administer it, get to goal on it, and  
16 then, you know, let's learn from it and let's reassess,  
17 let's decide if we would do thing differently the next time  
18 around. And so, now that we are at that stage, I guess the  
19 question I want to ask the panel is whether, with the  
20 benefit of reflection and some time before we get to Stage 2  
21 in this program, is there a higher leverage approach? Is  
22 there a different way that we might go about this, that  
23 could benefit more companies, that could have broader  
24 ranging benefits, whether it is working with the private  
25 sector and trying to deal with this risk delta, or some

1 other approach beyond just having a competitive  
2 solicitation, where we try to provide low interest loans to  
3 as many companies as the money reaches. And it is a  
4 question you cannot answer today, it is a question that you  
5 can think about and give us your insights later, but that is  
6 very much on our minds now that we are close to the end of  
7 the first sprint, and we are starting to think about how to  
8 go forward afterwards. I have stumped the panel.

9 MR. RIZZO: I thought we were going to answer it  
10 later.

11 MR. FRANKEL: Don't look at me.

12 MR. RIZZO: I think that Nini said it, I think going  
13 out directly to companies is one way to try to implement  
14 your program, but the other way is to partner with the  
15 organizations that are also involved with these companies,  
16 such as the banks and the VCs, and everybody else, the  
17 lawyers, it is the same way that, you know, we all kind of  
18 market our own businesses, through a network of people that  
19 are involved in the same echosystem [sic], for lack of a  
20 better word. So, I mean, that would be my answer. And so  
21 it is these kinds of forums, probably, that are helpful.

22 MS. REDWAY: You would probably leverage your  
23 dollars better because they will put money alongside of it.  
24 The one piece I do not know that I feel like, as we do at  
25 the Treasurer's Office our little programs, is I never quite

1 understand the layers of public benefit that a company is  
2 getting, and you mentioned that the commercial, you know, we  
3 help at research stages, there are different funds that come  
4 in at different points, and I do not know if there is a way  
5 for government to do a better job of understanding - I do  
6 not even really know the question, but it just seems like  
7 there is always another place to throw money, and we do, and  
8 I am not sure that is the best thing. I mean, maybe if  
9 somebody cannot get warranty guarantees, or whatever, maybe  
10 there is a reason they cannot, and they should not be in  
11 there. But I do not know that government knows the answer  
12 to that, so I do not know how we should be assessing the  
13 totality of the subsidies that we are giving a company. But  
14 I think that some of you in the financial world do better  
15 understand that.

16 MR. RIZZO: Well, there are a lot of organizations  
17 out there that try to mentor along companies, both start-up  
18 companies and companies that are much further along, and you  
19 know, those are the organizations that I think would be  
20 beneficial for the CEC to partner with. I mean, I can think  
21 of one who was on the panel earlier, which I am also a part  
22 of, which is SARTA. They have got a lot of programs to help  
23 clean energy companies and just, you know, become a part of  
24 that and there are other organizations throughout the state  
25 that do similar things. I mean, they have already kind of

1 got the ball started, actually very much so, so...

2 MR. FRANKEL: I would say let's not forget the  
3 policy aspect, I mean, let's set the rules of the game  
4 right, let's understand what the goals and the priorities  
5 are, and let's point everyone in the right direction so we  
6 can accomplish those goals in a meaningful period of time,  
7 and we can have both the economic and the environmental and  
8 other societal benefits accrue as quickly as possible. So,  
9 being clear and consistent on those, you hear that all the  
10 time, I am sure. The other question is not picking  
11 technology winners, so how do you do that, right? Because I  
12 think in this last phase, we had a program for solar  
13 thermal, we had a program for PV, we had a program for  
14 energy storage, so on and so forth, and so I am not saying  
15 any of those are going to dominate the marketplace, and, in  
16 fact, we believe there is a role for many of those  
17 technologies, the question is, again, starting with the  
18 problem, how do you get there in the timeframe that we have  
19 allowed for ourselves. And I think engaging in that  
20 discussion about policy goals, reaching them, and then  
21 allowing a thousand flowers to bloom, how do you incent that  
22 in a fair, transparent, and even way across the marketplace?  
23 That would probably be a good discussion to have, and we  
24 certainly would be willing to engage in that.

25 CHAIRMAN DOUGLAS: All right, well, I would like to

1 thank the panel very much for being here, for your great  
2 ideas, and for indulging us in our late schedule. It has  
3 been very helpful to us, so thank you very much.

4 MR. RILLERA: Thank you, everyone. The next panel  
5 will be the government perspective panel. Okay, the first  
6 speaker will be Brook Taylor with the Governor's Office of  
7 Economic Development.

8 MR. TAYLOR: Thank you, Larry. I want to start off  
9 by thanking the Commission members here and thanking Larry  
10 for inviting me to be here. I am from the Governor's Office  
11 of Economic Development. My colleague, Marty Keller,  
12 presented this morning. I think, as he had said, we are a  
13 fairly new organization. The Governor established us in  
14 Executive Order about four months ago with the goal of  
15 essentially becoming the one-stop-shop for economic  
16 development policy and business assistance in the state.  
17 Part of the impetus for the office came from the Little  
18 Hoover Commission Report that came out earlier this year  
19 that essentially said we need an Office of Economic  
20 Development essentially at the Executive level. But more  
21 importantly, I think we have been hearing for years now,  
22 from our small business constituents, from our economic  
23 development partners, and from concerned citizens, that we  
24 need a single point of contact to go to for economic  
25 development. So, what we found when we started into this

1 endeavor is that there were over 100 offices, departments,  
2 and agencies all dealing in economic development, and that  
3 essentially very few of them were actually discussing  
4 amongst each other and working together. So, the Governor  
5 created our office and, again, we are one part economic  
6 development policy and we are one part business assistance.  
7 And the business assistance function is something that I  
8 think is fairly new to state government and I think Michael  
9 Deck had touched on it earlier when he had talked about  
10 having a single place to go to find all of those economic  
11 development incentives to expand a business, to relocate a  
12 business, for existing businesses here in California, if  
13 they want to open a new facility, where do they go to find  
14 all of those incentives that are available to do them? And,  
15 as Michael had mentioned, you know, he had talked to other  
16 states and it was very easy, however, in California he had  
17 to go to the local level and then work his way through the  
18 regulatory environment at the state. Well, our office does  
19 that to a large extent; we absorbed functions of the  
20 California Business Investment Services Division and what we  
21 do is essentially serve as the liaison for a business at the  
22 state level with the regulatory agencies, with the local and  
23 economic development partners, we do permit assistance,  
24 regulatory assistance, site selection. If you are a  
25 business and you need a new manufacturing facility, GoED is

1 a place where you can go and get the assistance to find a  
2 new facility and work with the individuals that understand  
3 the environment that you are going to be working in. So, as  
4 we look to the future, we are pretty confident that we are  
5 going to be continuing this work for some time now. Just in  
6 being here, I heard many mentions of some of the initiatives  
7 that we are working on, the innovation of initiative,  
8 working with our partners at SARTA and San Diego CleanTECH,  
9 some of the other functions around grants that GoED has been  
10 able to secure, and so we are moving forward with the  
11 overall perspective that we are here to fulfill the mission  
12 that the Governor has established for us, and that is  
13 basically to do whatever we can. To help businesses create  
14 the growth, the state needs to remain an economic  
15 powerhouse. Now, that seems kind of broad, but we are  
16 young, so what I wanted to mention up front here is that we  
17 want to work with the Energy Commission and all the other  
18 agencies to the largest extent we can, to figure out exactly  
19 what that means because I am sure, as you are finding now as  
20 you are entering into the world of manufacturing, you put  
21 together these workshops to get input from other folks and  
22 we are finding the same thing, that is why, you know, we  
23 worked with Larry consistently for the last few months and  
24 even beyond that to get the perspective from the Energy  
25 Commission and how that is going to impact our work. Next

1 slide, please.

2           So that is a little bit about us. So this is our  
3 Website. I encourage everybody to go to the Website because  
4 there are a couple of key functions that are important  
5 there, and one is that tab in the middle, the green tab, is  
6 the tab we use to contact a business specialist. So, if you  
7 have a business constituent somewhere in the state that is  
8 looking for assistance, that needs help with the site  
9 selection, they need help navigating the regulatory  
10 challenges in front of them, they can come directly to us  
11 and talk with an expert that can give them assistance in  
12 that area. Next slide, please.

13           So, as we all know, the state has been fixated on  
14 this notion of the recovery. I myself have worked with the  
15 Governor's Recovery Taskforce and, Chairwoman Douglas, I  
16 have seen you there giving presentations on the efforts of  
17 the Energy Commission, and many members of GoED have worked  
18 with the Recovery Taskforce. What we saw is that all of the  
19 funding that allocated for ARRA was vital to jumpstarting  
20 the economy, but we are now seeing that, as we are nearing  
21 the end of the funding cycle, the recovery effort is going  
22 to continue on for quite some time. And this was not part  
23 of my prepared presentation, but I wanted to touch on one of  
24 the questions that you had asked at the end of the last  
25 session, which is, as we are getting to the end of this and

1 potentially looking at a second opportunity for a Stimulus  
2 type situation, what would we do differently? And I think  
3 what we saw was that there was limited vision because there  
4 was so much emphasis on getting the money out the door so  
5 quickly, so there was limited vision on who the actual end-  
6 users would be, and how they would be able to stimulate the  
7 economy. There was an assumption that money hitting the  
8 streets means economic activity, but I think that is  
9 somewhat shortsighted in the sense that business, whatever  
10 function you want to say about business, is that they spend  
11 money, they create money, and they create jobs. And in  
12 California, 99 percent of all businesses are small  
13 businesses, so to the extent you can get money into the  
14 hands of small businesses, is the extent to which you can  
15 create economic activity and stimulus. And that comes in a  
16 lot of different forms, and I am not just talking about  
17 direct grants and loans to businesses, but what we saw was a  
18 major contributing factor to the Stimulus activity, was  
19 government contracting. And government contracting in  
20 California, we know that there is a 25 percent goal to  
21 include small business in all state contracting; there is no  
22 such goal at the federal level. So, when all this money was  
23 coming down from the federal level, essentially federal  
24 requirements are going to trump state requirements, so there  
25 was none of this emphasis put on getting small businesses

1 contracts, getting them the opportunities that they need to  
2 create economic activity, create jobs for their employees,  
3 and to really stimulate the economy. So I would like to  
4 submit that, if we get to that point again, and we start  
5 having that discussion, that we really put a focus on how do  
6 we get small business the funding, the opportunities that  
7 the government can provide, so that they can start creating  
8 jobs at the ground level.

9           So, getting back to the notion of manufacturing, for  
10 the last 10 years, we have known that we have lost several  
11 jobs and largely the manufacturing industry has been hit  
12 harder than any other industry in California. A lot of  
13 companies have chosen to move their operations to other  
14 states, or move to other countries with more relaxed  
15 regulatory and environmental laws, and the impact has been  
16 significant. And it is not just direct job losses, but it  
17 is the indirect losses, it is their partners, it is their  
18 subcontractors, it is the people that worked with them on a  
19 collaborative effort for the production capability. And I  
20 would like to say that, 1) there is no shortage of people in  
21 state government discussing that, and we saw all day that  
22 there are people that are well more versed and are experts  
23 in that field come before me and they have got a wealth of  
24 experience, and they are busy as we speak right now out  
25 there trying to make sure that does not happen again.

1           To the extent possible, I would like us to take a  
2 look at the future of manufacturing in California. As my  
3 colleague earlier today, Marty Keller, noted and kind of  
4 took my talking points, too, Peter Drucker introduced us to  
5 the concept of the Knowledge economy, and the notion that  
6 every economy goes through a linear progression from  
7 Agricultural to Industrial to the Knowledge Economy. And  
8 California has been in the midst of transitioning to the  
9 knowledge economy for some time now, and we can see that in  
10 the shift away from manufacturing employment. Now, most  
11 people look at this and what they see are sharp declines in  
12 manufacturing employment, but I think what is important to  
13 note is there is actually a significant shift towards the  
14 knowledge job, the knowledge worker, the knowledge  
15 employment. So, when we talk about the notion of  
16 manufacturing jobs being lost, we also have to take into  
17 consideration that maybe they were not lost, but maybe they  
18 evolved and they changed, and that manufacturing as we know  
19 it is still in the midst of changing away from the brick and  
20 mortar, away from the industrial plant, towards things like  
21 we had seen here today with Nanosolar, you know, they are  
22 doing some portion of their manufacturing here in  
23 California, and I think a lot of companies are doing exactly  
24 what they are doing in terms of diversifying the way that  
25 they operate. So, the question is that I would like to put

1 forward is have we moved on from a manufacturing economy, or  
2 is there potential that the knowledge economy is actually  
3 going to be a contributing factor to creating a more dynamic  
4 economic reality for our future, that incorporates all the  
5 elements? Essentially, are we going to use the knowledge  
6 economy to our benefit to learn how to do manufacturing  
7 better, differently, and even going as far back as  
8 agriculture? You know, are we going to start looking at the  
9 ways we do business across the board and applying all that  
10 knowledge capability? And I think the answer really does  
11 come in the form of California's independent manufacturers,  
12 the small independent manufactures are spread out all across  
13 California, and they look different, each on is different  
14 from each other; largely, they are California citizens who  
15 have put their knowledge to work for them. What we are  
16 seeing is knowledge workers are using the information  
17 available to them to harness the spirit of entrepreneurship  
18 and blend that with their knowledge of manufacturing, small  
19 and independent manufacturers who rely on a Web-based  
20 network of designers and producers to bring their ideas to  
21 life and to make smaller numbers of units at a higher yield.  
22 Now, many would counter that small manufacturing firms  
23 cannot possibly make up for the jobs we have lost from large  
24 manufacturers closing or transitioning. I remind you that  
25 every successful manufacturing firm started as a small

1 business. Let me give you an example. So, when David  
2 Packard and Bill Hewitt started manufacturing audio  
3 oscillators in their garage in 1939, they had no idea that  
4 they would eventually become the largest IT company in the  
5 world, employing 300,000 worldwide. Back then, we called  
6 them inventors, today we call them entrepreneurs because we  
7 understand the difference. These days, you do not just  
8 invent something and hand it off, you create something and  
9 then you figure out how to turn a profit on it, how do you  
10 create a business out of it, and how do you get to the point  
11 where you achieve so much scale that you can bring partners  
12 on, as opposed to just selling your ideas? So, today's  
13 manufacturers look at little bit different. Next slide. I  
14 think you recognize this, this is designers with more access  
15 to the production tools, they have got a little bit of  
16 training, they have managed to find a network via the  
17 Internet to find materials and tools that they are looking  
18 for, and they can use that Web to create anything that they  
19 want. Now, in reality, this is not far off from where we  
20 are. We are getting to the point where the network is a  
21 allowing pretty much any individual to find the tools for  
22 production and to find a network of consumers that they can  
23 then sell to.

24 So, let me give you an example here. There is a  
25 company called Alibaba, it is a Chinese company, and

1 essentially what we are talking about is the fact that the  
2 tools are a factory production from electronic assembly to  
3 3D printing, and are available to individuals in batches as  
4 small as a single unit, and people without the designing  
5 experience can learn anything they need to know online and  
6 create a 3D model. So, using a Web portal like Alibaba,  
7 they can find a production facility anywhere in the world to  
8 build them a prototype. Now, Alibaba is a Chinese-based  
9 online portal that connects users in Asia with designers all  
10 over the world, so you search the site, you find a company  
11 producing more or less what you are looking for, and then  
12 you use instant messaging to ask them if they can  
13 manufacture what you want. You use IM, and the IM will  
14 instantly translate from English to whatever language that  
15 that manufacturing facility is using, and they can  
16 communicate. So, a person here in the U.S. is communicating  
17 instantly with someone in Southeast Asia at a production  
18 facility. The response will come in minutes, "We can make  
19 that." "We can't make that." "Here is how to order it."  
20 "We already make something quite like that and here is what  
21 it costs." Once you figure out kind of a middle ground, you  
22 e-mail them your design file, and within a few days there is  
23 a prototype at your door. Once it all checks out, from that  
24 point forward, you can easily order tens, hundreds, or  
25 thousands more. People become a virtual micro-factory able

1 to design and sell goods without any infrastructure, even  
2 inventory. And products can be assembled and drop-shipped  
3 by contractors who serve hundreds of such customers  
4 immediately. A prime example: so, I had the pleasure of  
5 meeting an entrepreneur earlier this year, he spent 10 years  
6 in the music industry and he wanted to design a guitar amp  
7 that worked to his specifications, just an individual, he  
8 had no design experience whatsoever, but using the Web he  
9 was able to find an instruction manual, and he learned  
10 enough about what he would need to be able to do in order to  
11 start working. So he got an instruction manual and he  
12 bought a cheap soldering iron online. And within a month,  
13 he was in the midst of building a soundboard, the main  
14 components for a guitar amp. So, next he goes out and he  
15 builds the casing using materials, recycled materials that  
16 he found from a local furniture store. Then, he found a  
17 manufacturer here in California that produced essentially  
18 the sound cone that he was looking for. He rewired it to  
19 his specifications, put it all together, and with 18 months,  
20 he had an amp, not exactly a swift turnaround time, but this  
21 was not a full-time job, this was a hobby. He decided to do  
22 it again and the next time it took him six months. By the  
23 time he built the second one, he had already sold the first  
24 one online, he had orders for six more via the network he  
25 had found online of other musicians who wanted high-end

1 specifically built, handmade guitar amps. And using an  
2 online portal like Alibaba, he found that he could get a  
3 producer in China to build the sound cone that he had  
4 reverse engineered, 10 at a time, and it was half the cost  
5 of actually building it himself, and he could put it right  
6 into his components and be able to move quickly. So, now he  
7 is a manufacturer. He has customers, he was able to find  
8 people through the Web that were willing to buy his  
9 products, and in the coming year, he plans on opening a shop  
10 and taking on employees to help fill them in. Now, this is  
11 a small example, the point being that, while he is small  
12 now, he has created roots in California, and I think Gary  
13 Simon touched on this earlier, is that independent  
14 manufacturers who start in California end up staying in  
15 California. HP is a prime example. We know they moved some  
16 of their production capability to Idaho, but, for the most  
17 part, they are still based here in California, and they  
18 still have roots here. It is no different. You harness the  
19 power of the independent manufacturer here in California and  
20 they will stay here, and they will provide jobs. So,  
21 today's micro factories make everything from energy  
22 efficient cars, to fuel cells, to guitar amps, in any design  
23 you can imagine. And while the independent guitar amp  
24 manufacturer is not going to be usurping Marshall's market  
25 share this year, you can find a niche and provide production

1 jobs to Californians who would otherwise be scrambling for  
2 the few remaining jobs left with major manufacturing firms.  
3 As Chris Anderson, the Editor of *Wired* Magazine noted  
4 earlier this year, "We have seen this picture before. It is  
5 what happens just before monolithic industries fragment in  
6 the face of countless small entrants. From the music  
7 industry to newspapers, lower the barriers of entry, and the  
8 crowd pours in." And while there is something slightly  
9 Marxist about that statement, this is free market capitalism  
10 at its best. Global supply chains have become scale-free,  
11 able to serve small, as well as large. And this change is  
12 driven by two forces, first is the explosion in cheap and  
13 powerful prototyping tools, which have become easier to use  
14 by non-engineers, as we can see from the example of the  
15 guitar manufacturer, the amp manufacturer, who, it took him  
16 18 months, but he figured out how to do it. And the second  
17 is, the economic crisis has triggered an extraordinary shift  
18 in business practices of factories, which have become  
19 increasingly flexible, Web-centric, and open to custom work,  
20 where the volumes are lower, but the margins are higher.  
21 And the flexibility factor there is important to recognize  
22 because factories are becoming more flexible. It used to be  
23 that you basically owned all the means of production and you  
24 would not let anybody in, you produced your materials, you  
25 produced for your clients, but why would you ever take on an

1 additional client unless you had something to gain from it?  
2 These days, we are finding production facilities that are  
3 willing to produce materials for independent manufacturers  
4 without asking for a percentage of the company, without  
5 asking for a percentage of the production.

6 MR. RILLERA: Brook, if you could wrap up?

7 MR. TAYLOR: Sure. So, all this combined signals a  
8 shift in our economy that the government needs to start  
9 recognizing. Up until this point, we have been debating how  
10 we can stop manufacturing firms from leaving the state,  
11 courting them industry by industry, our office does it, as  
12 well, we have what are called red teams, when we find out a  
13 manufacturing facility or a large company is leaving the  
14 state, we mobilize, we get everybody together and we figure  
15 out how do we keep them? How do we make sure that they stay  
16 here? And that is important. But we have to make sure that  
17 we foster a culture of innovation, that understands the  
18 networked world that we are living in, and the reality of  
19 what the next manufacturing world is going to be like. We  
20 need policies that promote entrepreneurship on all levels  
21 and recognized that the knowledge economy is not the enemy  
22 of manufacturing, but rather the tool we will use to find  
23 more efficient ways to produce the products we need.

24 So, I encourage the Commission to start thinking  
25 differently about manufacturing, recognizing the potential

1 that small manufacturing firms offer, and looking to  
2 agencies around state government like ourselves and others  
3 who are starting to come around and realize that this is a  
4 real potential, and that we want to work together as a  
5 partnership. So, I want to thank you guys for allowing me  
6 to be here.

7 MR. RILLERA: Thank you, Brook. Is Carrie on the  
8 line?

9 MS. ROGERS: I just got reconnected.

10 MR. RILLERA: Carrie Rogers from the Los Angeles  
11 Economic Development Corporation.

12 MS. ROGERS: Yes, I apologize, I was on the line and  
13 we had some technical issues on this end, so I apologize for  
14 just re-joining late. Thank you, Larry, and the Commission  
15 for the opportunity to provide you with some information  
16 about our program successes for businesses and job seekers  
17 in LA County, and an overview of LA County's clean energy  
18 manufacturing. As he mentioned, the Vice President of  
19 Business Assistance for the LA EDC, we are a 501(c)(3)  
20 nonprofit established in 1981, and our mission is very  
21 simple, it is business attraction, expansion, retention, and  
22 job growth in LA County. Since 1996, we helped to create  
23 over 161,000 jobs, helped to retain almost 1,200 businesses,  
24 and we have been successful just recently in securing five  
25 ARRA contracts for LA County. So, if we could go to the

1 first slide, please?

2           Knowing that there were some ARRA funds coming down  
3 through a number of different resources, we worked closely  
4 with the Workforce Investment Boards in LA County, we have  
5 seven of them, and developed a program that we believed  
6 would really target businesses that were at high risk. And  
7 the reason this was important is because businesses, when  
8 they are at higher risk of going out of business, of course  
9 they are going to lay off employees and displace those  
10 workers, and by being able to target businesses at risk,  
11 assessing their issues and needs, developing an Action Plan  
12 for sustainability, we believed that we could help them in  
13 averting and avoiding laying off those important workers.  
14 The participants in the program are SELACO WIB, the SASSFA  
15 WorkSource Center, Pacific Gateway Workforce Assessment  
16 Network, and the City of LA WIB, which we just started that  
17 specific contract July 1<sup>st</sup>. The successes we have had so far  
18 is that we have contacted over 4,500 at risk businesses.  
19 That list was - we used Dunn & Bradstreet to be able to  
20 determine the high stressed businesses, and within certain  
21 industry sectors. We have sent over 3,000 e-mail blasts and  
22 those are going out specifically to the C-level executives  
23 at each of these companies. Some companies may have four or  
24 five, some may just have one, being a sole proprietor. We  
25 provided over 1,100 in-person consultations and assessments

1 of businesses, what their needs are, and developing Action  
2 Plans. We have developed 363 Action Plans of resources for  
3 businesses, and thus far have been able to retain over 1,300  
4 jobs and, with a customer satisfaction rating of over 96  
5 percent. Next slide.

6 A second program that we participated in was rather  
7 unique, called the Transitional Subsidized Employment  
8 Program, funded by ARRA, and it was headed up by the South  
9 Bay Workforce Investment Board through LA County, and the  
10 purpose of it was to place GAIN eligible employees in LA  
11 County businesses. And if you were a for-profit business,  
12 you were allowed to have that employee for six months; a  
13 non-profit business could have that employee for 12 months.  
14 The goal for LA EDC in this program was to do extensive  
15 outreach to LA County businesses, to provide them with  
16 information about this free TSE Employment Program, and to  
17 refer 400 workers. The way the program worked, which I  
18 think is so important, is that it was really a win-win-win  
19 program, meaning that businesses were able to utilize an  
20 employee for six months with no cost. There are only  
21 billing costs that they did provide was an in-kind  
22 supervision, which of course you would provide to anybody  
23 that you would bring on, whether it would be an unpaid  
24 intern, or an employee. And for the GAIN eligible employee  
25 that was placed into the program, the beauty of it was that

1 they got six months to really show their skills. Now,  
2 instead of just going on interviews, or being unemployed,  
3 they are actually learning new skill sets and they are  
4 really on basically, what we like to say, a six-month  
5 interview with this company. And in the event the company  
6 is looking to hire after the six months, it gives that  
7 person really just a foot up, you know, they have been  
8 showing themselves, their skills, their successes, to the  
9 business. So that was very successful and it also took  
10 people off of the rolls. The outcome is that we contacted  
11 over 9,600 companies in LA County, again, we sent e-mail  
12 blasts to almost 2,000 C-level executives. From there, we  
13 had 759 workers requested, with 225 placed. The customer  
14 satisfaction rating that we received from businesses  
15 throughout LA County was 96.2 percent, and the total  
16 employees placed throughout the county program exceeded  
17 10,000. So, it was quite a significant successful program.

18           Clean Energy Manufacturing in LA County, I am going  
19 to give you a little bit of information about this. The LA  
20 County has a number of different industries that we are  
21 working on either attraction efforts or expansion efforts,  
22 within battery operated vehicles and trucks, and while I was  
23 on and listening to the last panel, I did hear somebody  
24 talking about some battery operated vehicles, and we know  
25 that there have been a lot of DOE grants, there has been a

1 lot of interest with battery operated vehicles, and we  
2 certainly have had a good share of that, as well. We have  
3 been successful with a company called BYD, Build Your Dream,  
4 they are based out of China, they have 200,000 employees in  
5 China, and we were successful in bringing their headquarters  
6 here to the City of LA a couple of months ago, and they are  
7 in Phase 2 and Phase 3 of an expansion effort into LA  
8 County, with Phase 2 being a manufacturing and assembly, and  
9 Phase 3 being their logistics, someplace located near one of  
10 our ports, the Port of LA or Port of Long Beach. And they  
11 have also entered into an agreement with KB Home up in the  
12 Antelope Valley for some solar installation on new homes  
13 there. A couple of other companies that we are working on  
14 attraction and expansion efforts are also, one of them is a  
15 truck company that is a zero emissions, fully electric  
16 medium-duty truck. They are looking to secure additional  
17 financing, \$10 million is what they need to get a plant up  
18 and running. We are working with Coda, which is  
19 headquartered in Santa Monica, California. They are looking  
20 at an expansion for some assembly work, and we are working  
21 on sites here in LA County with a potential of 250 jobs.  
22 Lithium batteries, as you know, have been - there has been  
23 quite a demand for these, and quite an expansion of not only  
24 business efforts, but also of new companies. We have a  
25 company called AeroVironment in Monrovia, they create

1 lithium batteries, but they also have another component to  
2 their company, which is unmanned aircraft manufacturing.  
3 They were successful in securing the battery contract for a  
4 brand new Nissan, it is called the Nissan Leaf. I think you  
5 have all seen some of the commercials coming out recently.  
6 The company has 230 high tech jobs and will be growing to  
7 330, and they have also secured a large contract as the  
8 developer of the battery recharging stations for these  
9 electric cars. And another company called CFX Battery,  
10 located in Azusa has 27 employees and is expanding, and they  
11 are a manufacturer of lithium batteries, as well.

12 MR. RILLERA: Carrie, do you want to wrap up?

13 MS. ROGERS: Sure. We have a number of companies on  
14 the solar front, as well, especially in our High Desert area  
15 called the Antelope Valley where there is a lot of heat and  
16 we have textile and plastic manufacturing companies looking  
17 at LA County from out of the area, one company from Germany  
18 is interested in LA County, as well as the City of LA, which  
19 has created a clean tech manufacturing corridor, which has  
20 received a lot of press, and that is where the City has a  
21 vision to become the National Center for clean tech research  
22 and development and industrial manufacturing businesses, and  
23 they have created all kinds of incentives, including rebates  
24 from the Department of Water and Power for the City of Los  
25 Angeles, and the Port of LA, in order to be able to drive

1 businesses into this clean tech corridor. And I am happy to  
2 answer any questions you might have.

3 CHAIRMAN DOUGLAS: Thank you. Let's go to the last  
4 speaker on this panel and then take questions.

5 MR. RILLERA: The last speaker is Kelly Pretzer with  
6 San Francisco.

7 MS. PRETZER: Thank you. And like the other  
8 speakers here today, my focus is on recruitment and  
9 retention of clean tech companies into the City of San  
10 Francisco with our Office of Economic and Workforce  
11 Development. I will start by kind of saying what is sort of  
12 our "why San Francisco" pitch, which I think in many ways  
13 extends to "why the State of California," as well. And the  
14 first and always most important, I would say, natural  
15 resource we have in California are Californians and San  
16 Franciscans. In San Francisco, specifically, we have almost  
17 44 percent of residents which have obtained a Bachelor's  
18 Degree or higher, we also have just launched a green  
19 training academy within our workforce development program,  
20 as well, giving all San Franciscans the skills that they  
21 need to be successful in this new industry. San Francisco  
22 has also been recognized a number of times for its forward  
23 thinking policies for procurement, as well as regulations  
24 and mandates. And, of course, the same goes for the State  
25 of California. There is already a great critical mass of

1 activity in San Francisco, we have over 200 clean technology  
2 companies in the City. We know that this dense  
3 concentration and clustering of companies is very important  
4 for success, and who knows who you will meet grabbing a cup  
5 of coffee or walking around the corner in the City? And  
6 also, an important asset for the City of San Francisco is  
7 its geography, proximity to both Silicon Valley, as well as  
8 Sacramento, its location next to UC San Francisco, UC  
9 Berkeley, UC Davis, UC Santa Cruz, the list goes on and on  
10 and on, and to be surrounded by such great minds and great  
11 thinkers, San Francisco is well positioned relatively in  
12 that regard.

13           Some City policies, we launched our Climate Action  
14 Plan in 2004, which set our overall emissions to be reduced  
15 by 20 percent below 1990 levels, and we are at 1990 levels  
16 now and still continuing to move down. We passed our Green  
17 Building Ordinance in 2008, which we like to taut as the  
18 strictest Green Building Ordinance in the nation, requiring  
19 a LEED Silver certification for large scale constructions  
20 this year, that will be up to LEED Gold next year. We also  
21 offer priority permitting for those who are building such  
22 buildings and meeting those standards. GoSolar SF, with the  
23 great work happening with the California Solar Initiative  
24 and also some incentives offered at the local level, we have  
25 seen a 450 percent increase in solar application activity in

1 2009 since that program was launched. A regional  
2 collaboration with the Cities of Oakland and San Jose for EV  
3 readiness and preparedness for when that Nissan Leaf does  
4 hit the streets, we want to make sure that San Franciscans,  
5 as well as those in the Bay Area, are well equipped and  
6 prepared to take their car on the road. And also, just  
7 recently, we launched Green Finance SF, which is the City's  
8 PACE Program. And I mention all of these because they are  
9 important for the City as an environmental imperative, you  
10 know, they are the right thing to do, but also an economic  
11 imperative, we see that making San Francisco and also,  
12 again, by extension, California, a compelling location for  
13 clean technology companies, both internationally, but also  
14 locally.

15 So a closer look at our clean tech economy, there  
16 are over 225 companies. We see the greatest density of  
17 those in the green building and design space, also good  
18 activity in solar and renewable energy, which makes sense,  
19 is that having been around relatively longer than others, I  
20 predict to see a much pronounced uptick in energy  
21 efficiency, as well as electric vehicles in the coming  
22 years. Something that we are particularly proud of, though,  
23 are the international firms that have chosen San Francisco  
24 as their headquarters. I think our biggest success story  
25 has been Suntech, which is the largest solar panel

1 manufacturer in the world, which chose San Francisco as its  
2 U.S. Headquarters, starting with five employees, now up to  
3 almost 100. An interesting data point which could be  
4 discussed later is that they did open a manufacturing  
5 facility in the U.S., though, that was opened in Arizona.  
6 Also, a concentration of finance firms with over 40 venture  
7 capital and finance firms with clean tech portfolios that  
8 have a location in San Francisco.

9           So, what does my office do? We provide city-wide  
10 leadership and really as a source of assistance and  
11 resources for these companies as they are evaluating their  
12 location decisions, providing one point of contact not only  
13 for the incentives programs and services available, but also  
14 as a point of contact within the other City Departments, as  
15 well as with the State. The most important tax incentives  
16 that we offer, and this is the part of the conversation that  
17 companies like to get to very quickly, San Francisco does,  
18 as its business tax, have a payroll-based tax, a 1.5 percent  
19 payroll tax. We have excluded clean technology companies  
20 that are under 100 employees from paying that tax. I will  
21 say that it is not highly utilized, I think about 12  
22 companies are taking advantage of it now. But, in many  
23 ways, it is an important symbolic gesture that the City is  
24 willing to make this investment, and that we also understand  
25 the long road to revenue, let alone profitability, and that

1 we want to be supportive of companies as they develop.  
2 Also, very important to mention, that the City highly  
3 leverages statewide programs, especially the Enterprise  
4 Zone, this is something that is critical, particularly as we  
5 look at manufacturing activities around the City, and as - I  
6 do not know what we would do without that.

7           And I just wanted to leave you with kind of a City-  
8 wide picture of what is going on in San Francisco. As you  
9 can see, this is a map of the sort of eastern edge of the  
10 City, and as you start up at the top with the Financial  
11 District, and in many ways, San Francisco's history as you  
12 move south along the coast, you see SOMA and the City's long  
13 history with technology, Mission Bay and the creation of a  
14 biotech hub, but as we continue to move down, we see the  
15 Hunters Point Shipyard and the Bay View Industrial District,  
16 two areas that we think are very important for the  
17 development of not only clean tech generally, but also clean  
18 tech manufacturing, and that these areas have the density,  
19 as well as the building stock that we see will be most  
20 attractive and will lend itself best to these companies.

21           And so, with that, that is just a quick picture of  
22 what is going on in San Francisco. I am happy to give you  
23 any further information that you like.

24           CHAIRMAN DOUGLAS: Well, thank you very much. This  
25 has been really helpful, both to hear about the State's new

1 sort of one-stop here is where you go for information from  
2 the State, and also to hear from two of our really strong  
3 regional or local programs that do the same sort of work, so  
4 this has been really helpful. I do not so much have  
5 questions as I just want to say that I am glad you are doing  
6 what you are doing, and it is impressive, and keep doing it.  
7 And let us know how we can help because this is really  
8 important work and we want these companies to come to  
9 California and thrive in California. Commissioner Eggert,  
10 do you have any questions?

11           COMMISSIONER EGGERT: Just one comment and one  
12 question. Ms. Rogers had mentioned AeroVironment which  
13 actually was very fortunate to have known the founder, Mr.  
14 Paul MacCready, who actually gained early notoriety, I think  
15 in the late '70s, with a human powered flight machine that  
16 crossed, I believe it was, the English Channel for a prize  
17 that he was then able to reinvest back into the company.  
18 They were also involved in the early development of the  
19 General Motors electric vehicle, the EV1, that sort of spun  
20 the first wave of electric vehicles, and now we are seeing  
21 the second, and it is great to see that they are still  
22 active and actually growing in that area, and I think a  
23 large part due to the work of LA and all the talent that  
24 exists down there. And actually, that was just a general  
25 comment. I wanted to just pull out of a number of the

1 panelists on this idea of access to an educated workforce as  
2 being sort of a critical component, and an attracting  
3 feature for companies, and I think we owe a lot of credit to  
4 our world class university system here in producing that  
5 talent.

6 I did have a question to Ms. Rogers and Ms. Pretzer.  
7 You had mentioned the idea of giving priority permitting to  
8 green buildings that meet the LEED standards. Have you  
9 thought about, either Ms. Pretzer or Ms. Rogers, about  
10 expanding that kind of concept to manufacturing facilities  
11 that are producing some of these clean energy products?

12 MS. PRETZER: Sure, I can take that. So, the  
13 priority permitting would apply to - maybe I need a  
14 clarification on the question, so if a manufacturing  
15 facility were to meet LEED Standards, of course they would  
16 see that priority permitting.

17 COMMISSIONER EGGERT: So, that does extend already  
18 to manufacturing facilities?

19 MS. PRETZER: Absolutely, that is actually any large  
20 commercial development that we see in the City. It brings  
21 up to a larger point, we do not see many manufacturing  
22 facilities being built in the City of San Francisco, but  
23 were that to happen, absolutely.

24 MS. ROGERS: And I would say for LA County, you  
25 know, we have 88 cities plus the county, itself, so a number

1 of those cities are doing just what you are mentioning,  
2 which is absolutely streamlining the permit process, and  
3 certainly for those clean tech companies that they want to  
4 have within their jurisdiction. But I would say that it is  
5 not all the cities within LA County, and that is really  
6 where our challenge comes from at the county-wide level, as  
7 well the EDC level and working with our cities, is for them  
8 to recognize that they need to be more business friendly,  
9 otherwise we are going to drive these companies not just out  
10 of LA County, but they perhaps even out of the State of  
11 California.

12 COMMISSIONER EGGERT: Yeah, thank you for that. I  
13 think permitting obviously is an issue that comes up  
14 frequently at the large scale in terms of new commercial and  
15 industrial facilities, and all the way down to the small  
16 scale like people putting in chargers in their homes, to  
17 facilitate Leaf deployment. And I know both LA and San  
18 Francisco have active programs to address that institutional  
19 challenge, which can be sort of a very low cost way to  
20 facilitate more rapid deployment of these technologies. I  
21 think I do not have any further questions. I found this  
22 panel to be very informative and really appreciate your  
23 contributions.

24 CHAIRMAN DOUGLAS: Yeah, thank you very much.  
25 Thanks for being here.

1 MS. PRETZER: Thanks.

2 CHAIRMAN DOUGLAS: Now, Suzanne, are we to public  
3 comment?

4 MS. KOROSEC: We are to public comment, that part of  
5 the day when all the stalwart people who hung in this long,  
6 if you have any comments that you would like to make, I do  
7 not believe we have any questions or comments that we have  
8 been told about online, but let's go ahead and open the  
9 lines just to see if we have anybody. The WebEx lines are  
10 open if there is anyone online who needs to make a comment  
11 or question at the end here. Okay. I think we are -

12 COMMISSIONER EGGERT: [Tapping] Is that Morris Code,  
13 somebody is trying to -

14 MS. KOROSEC: That is Morris Code, that is what it  
15 sounds like.

16 COMMISSIONER EGGERT: And actually, just - is there  
17 other mechanisms by which to submit input into the process?

18 MS. KOROSEC: Yes, as I announced at the beginning  
19 of the workshop, we are accepting written comments up until  
20 July 29<sup>th</sup>, and the format for submitting those is in the  
21 Notice that is out on the table in the foyer, and also  
22 available on the Website.

23 CHAIRMAN DOUGLAS: Excellent. Well, in that case, I  
24 will thank everybody once against for participating and  
25 especially for those of you who have hung in with us until

1 the end of the day, we have really appreciated your  
2 participation, we have gotten a lot out of it, and so thank  
3 you very much. And we are adjourned.

4 [Adjourned at 4:23 P.M.]

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