

**DOCKETED**

<b>Docket Stamp Updated:</b>	4/21/2023 12:10:23 PM
<b>Docket Number:</b>	23-BUSMTG-01
<b>Project Title:</b>	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
<b>TN #:</b>	249845
<b>Document Title:</b>	Transcript of the April 12, 2023 Business Meeting
<b>Description:</b>	N/A
<b>Filer:</b>	Liza Lopez
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	4/21/2023 11:41:49 AM
<b>Docketed Date:</b>	4/21/2023

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<b>Submission Date:</b>	4/21/2023 11:27:44 AM
<b>Docketed Date:</b>	4/21/2023

BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of: )  
 ) 23-BUSMTG-01  
*Business Meeting* )  
 \_\_\_\_\_ )

MONDAY, APRIL 12, 2023

10:00 A.M. - 3:30 P.M.

In-person at:  
 Warren-Alquist State Energy Building  
 1516 Ninth Street  
 Art Rosenfeld Hearing Room  
 Sacramento, California 95814  
 (Wheelchair Accessible)

*Remote Access Only via Zoom*

*Please note that the California Energy Commission (CEC) aims to begin the business meeting promptly at the start time and the end time is an estimate based on the agenda proposed. The meeting may end sooner or later than the time indicated depending on various factors.*

*Pursuant to the California Code of Regulations (CCR), title 20, section 1104(e), any person may make an oral comment on any agenda item. To ensure the orderly conduct of business, such comments will be limited to two minutes or less per person.*

Reported by:  
 Peter Petty

APPEARANCES (\*Present via Zoom)

Commissioners

David Hochschild, Chair  
Noemi Gallardo  
Patty Monahan

Staff Present:

Drew Bohan, Executive Director  
Linda Spiegel, Chief Deputy Director  
Linda Barrera, Chief Counsel  
Mona Badie, Public Advisor  
Kari Anderson, Chief Counsel's Office

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

2 APRIL 12, 2023

10:03 a.m.

3 CHAIR HOCHSCHILD: Good morning, friends. I'm  
4 David Hochschild, and welcome to today's business meeting.  
5 Today is Wednesday, April 12<sup>th</sup>. I call this meeting to  
6 order. Joining me are Commissioner Gallardo and  
7 Commissioner Monahan, Vice Chair Gunda and Commissioner  
8 McAllister are away at a conference. Let's begin with the  
9 Pledge of Allegiance.

10 (Whereupon the Pledge of Allegiance was recited.)

11 CHAIR HOCHSCHILD: Thank you. I want to just  
12 begin with an update that the Energy Commission is sad to  
13 share the news that Jim Walker has passed away, a former  
14 Commissioner and Executive Director of this agency. And  
15 you know all of us who are serving here both as  
16 Commissioners and as staff, know that we stand on the  
17 shoulders of giants and the vision it took to get this  
18 agency up and going. And the early successes, some of the  
19 very first large-scale renewable projects in the world,  
20 were built here in California. Including the first utility  
21 scale wind projects in the world, which I know Jim was  
22 intimately involved in. I never had the opportunity to  
23 meet him. But I have heard from a number of his former  
24 colleagues and friends, some of whom are here today, and I  
25 want to thank you for being here.

1           We're going to do public comment first, and  
2 you're welcome to speak at that time. We will also at Item  
3 5, be introducing a resolution, which I'll be presenting  
4 and be sharing with Virinder Singh to pass on to Mr.  
5 Walker's family. But we just wanted to send our  
6 condolences to his family and to all those who knew and  
7 worked with him.

8           With that, we'll begin with Item 1, Public  
9 Comment or Item 2, Public Comment. I don't have any other  
10 agency announcements unless there was anything else. (Off-  
11 mic colloquy.) Okay, public comment. Thank you.

12           MS. BADIE: Thank you. Good morning. My name is  
13 Mona Badie, the Energy Commission's Public Advisor . The  
14 Commission welcomes public comment at its business  
15 meetings. There'll be multiple opportunities for public  
16 comment today.

17           This initial public comment period is for any  
18 item including informational or non-voting items on the  
19 agenda. If you want to comment on a voting item, you can  
20 comment now or wait for the dedicated public comment period  
21 for that item to make your comment.

22           Some brief instructions to notify us if you would  
23 like to comment at this time. If you're in-person, please  
24 use the QR code posted at the table in the back where  
25 Public Advisor is seated. There's Dorothy raising her

1 hand. If you're on Zoom, you can click the "raise hand"  
2 feature on your screen to notify us. And if you're joining  
3 by phone, please press \*9 to raise your hand.

4 To ensure we can hear from everyone and get  
5 through the agenda today, we are asking comments to be  
6 limited to two minutes or less per speaker, and one speaker  
7 per entity. And you will be called on when it is your time  
8 and you will see a timer on the screen.

9 Okay, first we will go to public comment in the  
10 room. We have Virinder Singh. If you could approach the  
11 podium please, and make your comment. Thank you.

12 MR. SINGH: Okay, I'm here to pay homage to the  
13 late Dr. James Walker. In doing so, I will read excerpts  
14 of a letter from our President and CEO, Mr. Tristan  
15 Grimbert, and respecting the brevity that Mona mentioned.

16 So Dear Chairman Hochschild and Commissioners, I  
17 am both honored and in sorrow to have this opportunity to  
18 remember Dr. James Walker. Jim, as we knew him, did not  
19 fit within a single archetype. He was an academic and a  
20 business entrepreneur, a pioneer, and the holder of  
21 important institutional memories. He served under  
22 Republican presidents, and a certain Democratic Governor of  
23 California. He was passionate about the environment. And  
24 his passion led him to be an early pioneer of the  
25 California wind industry. As Californians, we're all

1 benefiting from Jim's leadership at the CEC and our state's  
2 private sector.

3 Jim had a brilliant intellect. He was extremely  
4 curious and believed in science. He cared about forging  
5 trust and consensus. Most notably on that front, he  
6 founded the American Wind Wildlife Institute, now the  
7 Renewable Energy Wildlife Institute, which brings together  
8 renewable energy development companies and national  
9 environmental nonprofits to pursue proactive research.  
10 Which in turn supports the building of clean megawatts that  
11 minimizes their impact on our common biological  
12 inheritance. It is the perfect embodiment of Jim's  
13 commitment to our collective development of knowledge and  
14 best practices to protect our environment.

15 Jim was a mentor to many in the renewable energy  
16 industry and beyond. Women in Wind Energy, now known as  
17 Women of Renewable Industries and Sustainable Energy,  
18 WRISE, honored Jim nine years ago for his generosity of  
19 time and knowledge to a new generation of leaders in the  
20 industry.

21 Jim was a man of the world. While his importance  
22 to California's energy policy pathway is immense he was  
23 very busy elsewhere, spreading the benefits of renewable  
24 energy. For example, he developed wind projects in Greece,  
25 and was instrumental in our company building our very first

1 wind project in Oaxaca state in Mexico.

2 Most importantly, Jim was a man who deeply cared  
3 about our world and who had an entrepreneurial passion that  
4 helped to make our industry what it is today. He was also  
5 somebody you wanted to talk with. He could guarantee that  
6 at a shared dinner, you will be accompanied by a  
7 fascinating conversation, a questioning of assumptions, and  
8 some very humorous anecdotes. It was central to the  
9 evolution of our company and our industry.

10 We are grateful for his impact. We miss him  
11 greatly. We will continue to honor him by earnestly  
12 pursuing our state's sustainable energy future.

13 CHAIR HOCHSCHILD: Thank you so much, Virinder.

14 MS. BADIE: Thank you. We also have Susie Wong  
15 in the room to make a public comment. If you can please  
16 approach the podium and spell your name before making your  
17 comment.

18 MS. WONG: Susie Wong, S-U-S-I-E W-O-N-G. Good  
19 morning, Commissioners. I'm Susie Wong, representing ReMo  
20 Homes, a zero carbon cost effective, modular, and  
21 manufactured home company, based in Los Angeles.

22 We thank the California Energy Commission for the  
23 opportunity to apply for the EPIC grant for advanced  
24 prefabricated zero carbon homes, giving ReMo Homes the  
25 opportunity to collaborate with the Chemehuevi Tribe of

1 Havasu Lake in the City of San Fernando.

2 In our appreciation for offering the EPIC grant  
3 funding opportunity to accelerate ReMo's work of  
4 development, testing and demonstrating zero-carbon cost-  
5 effective modular and manufactured homes that can be  
6 readily deployed in under-resourced communities and tribes.  
7 Which is vital to ReMo, a minority and disabled veteran  
8 owned business comprised of accomplished and talented  
9 executives from the aerospace, semiconductor, and  
10 traditional construction industries.

11 Thank you again and ReMo Homes looks forward to  
12 an ongoing constructive relationship with the California  
13 Energy Commission. Thank you.

14 MS. BADIE: Thank you.

15 That is it for our in-person, and we have some  
16 folks on Zoom. Kristen Headland, I'm going to open your  
17 line and you may make your comment.

18 MS. HEADLAND: Hello, my name is Kristen  
19 Headland, K-R-I-S-T-E-N Headland, H-E-A-D-L-A-N-D. Good  
20 morning, Commissioners. I live in Morro Bay, California.  
21 I'm very interested in hearing the report from the windmill  
22 farms on the East Coast. I would note that the report does  
23 not cover the State of Maine where the floating wind mill  
24 farms are located. This is the closest to what is being  
25 proposed on our coast. We have a beautiful harbor that has

12

1 wildlife. Tourists come from all around the world to visit  
2 our harbor. And our economy is dependent on tourism. So I  
3 look forward to any future meetings that you're going to  
4 have. And thank you very much for your time.

5 MS. BADIE: Thank you.

6 Next we have Abby Arnold. I will open your line,  
7 please make your comment. Abby, you might need to unmute  
8 on your end.

9 MS. ARNOLD: Good morning. This is Abby Arnold,  
10 A-B-B-Y A-R-N-O-L-D. Commissioners, I'd like to thank you  
11 and the public for offering us this opportunity to reflect  
12 on our friend and colleague, Dr. James Walker. Who among  
13 many other accomplishments founded our institute, Renewable  
14 Energy Wildlife Institute, formerly WWI.

15 Jim's profound impact on so many is a  
16 confirmation of what a remarkable man he was. Jim passed  
17 during the same week the newest IPCC Report No. 6 was  
18 released, a warning that we are closer than ever before to  
19 being on the brink of a global temperature increase of 1.5  
20 degrees Celsius. Biodiversity and human civilization are  
21 at risk. And we, and you, and California are at a pivotal  
22 moment.

23 Over 15 years ago, Jim understood the urgency of  
24 getting ahead of the challenges involving renewable energy  
25 production and wildlife and ecosystems. Jim laid out a

1 path forward for us, for all of us. His passion and vision  
2 along with the continued support and involvement of  
3 realized partners and friends, enabled us to continue to  
4 push forward crucial work that is needed to responsibly  
5 meet net zero goals. Our world has lost a fierce advocate  
6 for renewable energy and conservation. And we have lost a  
7 dear friend who offered me and so many others, including  
8 those of you in that room, his time, his patience, and his  
9 wisdom. A toast to Jim, we all want to celebrate your  
10 life. And thank you.

11 Thank you.

12 MS. BADIE: Thank you.

13 That concludes public comment. Back to you,  
14 Chair.

15 CHAIR HOCHSCHILD: Thank you so much. And I also  
16 wanted to wish everyone a Happy Easter and Spring Equinox,  
17 Nowruz, Passover, to all who celebrate.

18 And also to share there's two items, Item 8  
19 regarding tire efficiency and Item 10 regarding Russell  
20 City, which are going to be taken up at the next meeting,  
21 not today.

22 So with that, let's move on to Item 3 Consent  
23 Calendar. Any public comment on that?

24 MS. BADIE: Thank you.

25 Again, this is Mona Badie, the Public Advisor .



1 If you want to make a comment on the Consent Items 3a  
2 through j, in the room there is no one for Item 8. If you  
3 are on Zoom, please raise your hand to comment on this  
4 item. I'll give it a few seconds here. And I'm not seeing  
5 any hands. Back to you, Chair.

6 CHAIR HOCHSCHILD: Okay, unless there's any  
7 Commissioner discussion, I'd welcome a motion on that from  
8 Commissioner Monahan.

9 COMMISSIONER MONAHAN: I move to approve this  
10 item.

11 CHAIR HOCHSCHILD: Is there a second from  
12 Commissioner Gallardo?

13 COMMISSIONER GALLARDO: I second.

14 CHAIR HOCHSCHILD: All in favor say aye.  
15 Commissioner Monahan?

16 COMMISSIONER MONAHAN: Aye.

17 CHAIR HOCHSCHILD: Commissioner Gallardo?

18 COMMISSIONER GALLARDO: Aye.

19 CHAIR HOCHSCHILD: And I vote aye as well. Item  
20 3 passes unanimously. We'll turn now to Item 14? Yes,  
21 Item 14. I welcome Michael Ferreira to present.

22 MR. FERREIRA: Good morning, Chairman,  
23 Commissioners. My name is Michael Ferreira from the Energy  
24 Research and Development Division. Today, I am requesting  
25 approval for four grant agreements selected from the

1 Realizing Accelerated Manufacturing and Production for  
2 Clean Energy Technologies solicitation, also known as RAMP.

3 This funding will help clean energy entrepreneurs  
4 advance their technology to the pilot production stage at  
5 California manufacturing facilities. Next slide, please.

6 Benefits of the agreements being discussed today  
7 include support for clean energy entrepreneurs, increased  
8 safety and electricity service reliability, improved  
9 affordability of electrical systems, and the creation of an  
10 estimated 87 new jobs. Next slide, please.

11 The RAMP program is the last step in the  
12 entrepreneurial ecosystem developed by the Market  
13 Facilitation Office to propel clean energy entrepreneurs to  
14 the initial production phase for their technology. One  
15 step closer towards commercializing their product at full-  
16 rate production, and one step closer to supporting  
17 California's energy goals.

18 The RAMP program provides the means to guide  
19 entrepreneurs from the end of the prototype phase, to  
20 navigating through the world of initial production scale-up  
21 in manufacturing their technology. Next slide, please.

22 Startups usually find it hard to scale-up  
23 production, because of a series of design or economic  
24 issues that can impact an emerging technology's progress  
25 towards commercialization.

1           Some of the challenges startups face during this  
2 transition include securing the necessary funds for  
3 activities like buying equipment, product testing and  
4 certification. Adapting their emerging technology to fit  
5 the scope of established manufacturing processes. And  
6 finally, companies may lack the required knowledge and  
7 expertise in the manufacturing field.

8           The purpose of this solicitation is to help clean  
9 energy companies advance their technology to the Low-Rate  
10 Initial Production stage, known as LRIP. LRIP as the first  
11 step in making the transition from highly customized hand-  
12 built prototypes, which are used for performance testing  
13 and vetting the production process, to the mass-produced  
14 end product in the Full-Rate Production phase. In short,  
15 moving to the LRIP stage is about maturing a technology to  
16 meet the requirements of potential customers within the  
17 technology's beachhead market. Next slide, please.

18           The CEC has conducted two prior solicitation  
19 rounds of RAMP, we wanted to take this opportunity to talk  
20 about successes of the first two rounds.

21           There have been 14 companies awarded in total.  
22 Combined, these recipients now employ nearly 600 people  
23 and collectively have raised nearly \$480 million in  
24 subsequent funding.

25           Next we will look at three previous RAMP

1 projects.

2           The first company highlighted is Cuberg, who was  
3 awarded in 2019 to scale production of their high energy  
4 density lithium meta TPV battery. Their battery is over 40  
5 percent more energy dense than leading Lithium ion  
6 batteries, which equals about a 70 percent increase in EV  
7 driving range.

8           Their successful demonstration of  
9 manufacturability and performance led to Cuberg's  
10 acquisition by Northvolt in 2021, which then received a \$14  
11 billion order from Volkswagen.

12           Cuberg's team is now also in partnership with  
13 aviation companies for electrified transport applications.  
14 Next slide, please.

15           Another successful RAMP recipient is Antora  
16 Energy who has developed a thermal battery that can provide  
17 long-duration grid storage, or industrial process heat.  
18 The key to their system is an innovative thermophotovoltaic  
19 cell, which can convert heat into electricity at high  
20 efficiencies.

21           Antora's RAMP project focused on scaling up  
22 production of these TPV cells and earlier this year they  
23 commissioned a production line capable of producing 2  
24 Megawatts of TPV cells a year.

25           Antora is also demonstrating their full system in

1 Fresno as they continue to scale deployments of their  
2 batteries. Next slide, please.

3 The last one is Ubiquitous Energy who have  
4 developed a transparent solar coating to turn windows and  
5 surfaces into renewable generators.

6 Ubiquitous was awarded in 2021 to scale  
7 manufacturing of their solar window technology. Since  
8 their RAMP award they have raised nearly \$50 million in  
9 private investment. And in 2022, they entered a  
10 partnership with Andersen Corporation to jointly develop  
11 energy generating window and door products. Next slide,  
12 please.

13 Now moving on to the new RAMP projects proposed  
14 for approval. Next slide.

15 The first agreement is with Liminal Insights to  
16 build a pilot line for their battery inspection system at  
17 their facility in Emeryville. Their EchoStat Systems uses  
18 ultrasound imaging to detect flaws during production. And  
19 machine learning to continually improve the manufacturing  
20 process, resulting in improved yield, quality and safety of  
21 batteries used in electric vehicles. Next slide, please.

22 The next agreement is with Skyven Technologies to  
23 build a pilot manufacturing line for their industrial heat  
24 pump technology at a facility in Fresno, California.

25 A key barrier to achieving the State's energy

1 goals is a lack of efficient and economically attractive  
2 technologies to electrify the massive thermal energy  
3 demands associated with steam production in the industrial  
4 sector. Skyven's heat pump is a drop in replacement for  
5 natural gas boilers that can produce higher temperature  
6 steam than competing heat pumps and is three times more  
7 efficient than electric boilers. Next slide, please

8           The next agreement is with Next Energy  
9 Technologies to establish an assembly line for its organic  
10 photovoltaic window system in Goleta, California. This  
11 solar window technology transmits visible light, allowing  
12 for normal use of the window, while at the same time  
13 absorbing UV and infrared light to provide on-site energy  
14 generation.

15           Their organic semiconductor coating can be  
16 directly integrated into the window manufacturing process,  
17 lowering costs, and allowing their technology to target a  
18 one-year payback on incremental costs. Next slide, please.

19           The last agreement is with TS Conductor Corp to  
20 expand manufacturing capabilities at its facility in  
21 Huntington Beach, California. The facility will produce  
22 advanced, high efficiency conductors that can reduce  
23 electricity line loss by 40 percent.

24           These conductors embed sensing fibers in the  
25 core, which enables self-monitoring and environmental

1 sensing, improving grid resilience and reliability. These  
2 conductors also have an inflated cover preventing them from  
3 sparking and causing wildfires.

4 The project aims to commission a new  
5 manufacturing line capable of producing up to 2,300 miles  
6 of covered smart conductors per year, and reduce  
7 manufacturing costs by 50 percent. Next slide, please.

8 Staff recommends approval of these four grant  
9 agreements and staff's findings that these projects are  
10 exempt from CEQA. This concludes my presentation and thank  
11 you for your consideration. Staff is available for  
12 questions.

13 CHAIR HOCHSCHILD: Great job. Thank you,  
14 Michael.

15 We'll go to public comment on Item 14.

16 MS. BADIE: Hello. This is Mona Badie, the  
17 Energy Commission's Public Advisor . The Commission  
18 welcomes public comment on Item 14. This is the RAMP EPIC  
19 projects.

20 And we have one person in the room to comment.  
21 And also if you are on Zoom and would like to comment on  
22 this item, please raise your hand. We will first take  
23 Jason Huang in the room. Please approach the podium to  
24 make your comment and spell your name for the record as  
25 well. Thank you.

1 MR. HUANG: (Indiscernible).

2 COURT REPORTER: Sorry, Mr. Huang is not audible.

3 CHAIR HOCHSCHILD: You have to push the button on  
4 the mic. Thank you.

5 MR. HUANG: Sorry, I'll repeat. I'm Jason Huang,  
6 CEO of TS Conductor Corporation. We're very grateful to  
7 the California Energy Commission for approving our  
8 application for \$3 million for an advanced manufacturing  
9 facility in Huntington Beach, California. Our small  
10 company is also a Minority Business Enterprise.

11 With our advanced create assisting technology, we  
12 choose California for our manufacturing, because we share  
13 the urgency with the state to inspire and produce the  
14 solutions the world needs at a faster pace. We also share  
15 California's vision and ambitious essential climate clean  
16 energy goals. And we are also a public benefit corporation  
17 with a focus on sustainable development in greenhouse gas  
18 emission reduction.

19 Now I'm happy to say that we are one more of many  
20 partners of the California Energy Commission working on  
21 solutions that remedy the past and assure a much more  
22 sustainable future. Thank you for your support.

23 CHAIR HOCHSCHILD: Thank you.

24 MS. BADIE: Thank you.

25 We will transition to Zoom. We have a few hands



1 raised. First up, we have Abby Arnold. Abby, I'm going to  
2 open your line. Please limit your comment to two minutes.  
3 (No audible response.) Okay, Abby, I don't know if you can  
4 unmute on your end. We'll come back to you if you want to  
5 raise your hand or lower your hand.

6 Next we'll go to Courtney McKeon. I'm going to  
7 open your line, Courtney. Please proceed with your  
8 comment.

9 MS. MCKEON: Hi, this is Courtney McCann with  
10 Skyven Technologies. C-O-U-R-T-N-E-Y, last name M-C-K-E-O-  
11 N. I just wanted to thank the Commission for this  
12 opportunity and for your consideration and time. Skyven is  
13 very much looking forward to working with the CCC to bring  
14 steam-generating heat pumps into low-rate initial  
15 production and to reduce greenhouse gas emissions in  
16 California. Thank you very much.

17 MS. BADIE: Thank you.

18 Next we have Bruno Caputo. I'm going to open  
19 your line, Bruno. Please make your comments.

20 MR. CAPUTO: All right. This is Bruno Caputo  
21 with Next Energy Technologies. We'd like to thank the CEC  
22 for their continued support for commercializing Next's  
23 window PV products. We've worked closely on our technology  
24 together and we're excited for the next steps towards  
25 initial production. The commercialization of the next

1 window PV system will result in greater electricity  
2 reliability, lower energy costs, increased health and  
3 safety and greater solar PV supply chain diversification.

4           Next's clean on-site energy generating technology  
5 will also increase the health and safety of California  
6 ratepayers by significantly reducing greenhouse gas  
7 emissions, since buildings are responsible for about 25  
8 percent of California's total greenhouse gas emissions. So  
9 thanks again to the CEC for including us and always being  
10 an advocate for this work. This project will create  
11 California based jobs while also lead to more readily  
12 available sustainable energy choices. Thank you so much.

13           MS. BADIE: Thank you.

14           That is it for public comment for Item 14. Back  
15 to you, Chair.

16           CHAIR HOCHSCHILD: Thank you. Well, first of all  
17 congratulations to all of the companies getting awards  
18 today. And to all the Energy Commission staff who've  
19 worked so hard in the ERDD Division to make these grants  
20 possible.

21           I wanted to just reiterate thunderously my  
22 support not just for today's grants, but for the program in  
23 general we're doing in R&D. It is really leading the  
24 world. I think you see both the breadth and the depth of  
25 the technologies and the value, you know, increased

1 efficiency on transmission lines and heat pumps and  
2 electric vehicle batteries and so forth.

3           And just to share that we did a few months ago,  
4 visit Cuberg right here in the Bay Area. And this is just  
5 a great example the value of our product. The CEO told us  
6 their company would have folded and shut down, but for  
7 getting that grant. They got the grant from the Energy  
8 Commission and then they went on to get a huge investment  
9 from Northvolt. And they're scaling up manufacturing and a  
10 great technology.

11           And, you know, I just want to say this is the  
12 role we shouldn't be playing. This is the role of  
13 government. It is that seed bed roll. (phonetic) We take  
14 these risks early on. And you know, not everyone will be a  
15 story like that. There's a bunch that fail, and that's  
16 part of the process. But on balance, we're winning. And  
17 this program, you know, which is really a visionary program  
18 for a long time we've had in partnership with the Public  
19 Utilities Commission is providing value, not just for our  
20 clean energy goals. But also ultimately for ratepayers  
21 because we're driving down the cost of these technologies.  
22 And so this is really like checking every box. It's in  
23 state manufacturing. Its clean energy. It's ratepayer  
24 benefits, equity benefits. We know we're doing almost 70  
25 percent of our demonstration projects from this program in

25

1 low-income and disadvantaged communities.

2           So I just really wanted to pause and recognize,  
3 in particular, the CEC staff who've been working so hard on  
4 these. And if I can just ask the folks in the ERDD program  
5 are here today to stand up. Adam and Anthony, Michael, and  
6 the others, I just want to give you guys a round of  
7 applause for all you do. (Applause.)

8           Thank you, thank you. Thank you guys. They're  
9 shy, aren't they? Thank you for all you do. This is  
10 really an incredible, incredible program and a great, great  
11 suite of products.

12           And to those innovators who are getting the  
13 grants today, you know, thank you for doing your work. And  
14 thank you for doing it in California. I just want to  
15 stress again the value of being here. And I do know there  
16 are challenges, right? I want to be really clear about we  
17 see that. We know that. But there's also a lot of value.  
18 And there's a part of the value is being in this ecosystem  
19 of incredible entrepreneurs together, learning from each  
20 other, supporting each other working together.

21           That kind of geographic concentration in one  
22 state has produced incredible results. You know, earlier  
23 in the meeting we were recognizing Jim Walker, the former  
24 Energy Commission leader who was involved in doing the  
25 first large-scale wind project in the world. And that was

26

1 kind of dismissed as a crazy thing. And now wind is one of  
2 the fastest growing lowest-cost sources of energy in the  
3 world. And that's California at work again.

4 So this is, I hope we're seeing here the sort of  
5 seeds of industries that are going to become very, very  
6 large and very, very big for us. So I just want to  
7 recognize the significance of that. And I love, again, the  
8 diversity of the technologies across all of our areas of  
9 need here.

10 So congratulations. Thank you, Michael, great  
11 presentation. I'd welcome any other comments from my  
12 colleagues. Yes, Commissioner Gallardo?

13 COMMISSIONER GALLARDO: I also wanted to  
14 recognize Erik. He didn't stand up earlier, but he's  
15 definitely part of that team, Erik. (Applause.)

16 And speaking of diversity, Chair, I think it also  
17 is great that we are investing throughout the state. So  
18 there's a diversity in the geography, right. There's  
19 companies all over the state and so that's wonderful to  
20 see. And I think Mr. Huang mentioned that the company was  
21 a minority owned business enterprise, which is also  
22 wonderful that we can support supplier diversity. So I  
23 just wanted to highlight those quick things. Thank you.

24 CHAIR HOCHSCHILD: Yeah. And I would just  
25 highlight Commissioner Gallardo and I are going down to

1 Salton Sea for another Lithium Valley visit with a number  
2 of colleagues in 10 days or so. And, you know, a lot of the  
3 work particularly related to batteries, ultimately we hope  
4 it's going to be supplied by sustainably produced  
5 California lithium. That resource can produce 600,000 tons  
6 a year. The global market last year was 400,000 tons. So  
7 really we're geographically fortunate to have a resource  
8 like this. That's by far the greenest way to produce  
9 lithium in the world. And that combined with all the  
10 innovation, it's just a really exciting time.

11 So I would welcome a motion on Item 14 from  
12 Commissioner Gallardo, if you'd be willing?

13 COMMISSIONER GALLARDO: I move to approve Item  
14 14.

15 CHAIR HOCHSCHILD: Is there a second?

16 COMMISSIONER MONAHAN: I second.

17 CHAIR HOCHSCHILD: All in favor say aye.  
18 Commissioner Gallardo?

19 COMMISSIONER GALLARDO: Aye.

20 CHAIR HOCHSCHILD: Commissioner Monahan.

21 COMMISSIONER MONAHAN: Aye.

22 CHAIR HOCHSCHILD: And I vote aye as well. Item  
23 14 passes unanimously. We will turn now to Item 4 East  
24 Coast Offshore Wind Study Tour. Welcome, Elizabeth Huber.

25 MS. HUBER: It looks like this is on already.

1           Good morning, Chair and Commissioners. My name  
2 is Elizabeth Huber and I am the Director of the Siting  
3 Transmission and Environmental Protection Division or STEP.

4           In addition to ensuring a safe and reliable  
5 electric system by reviewing a proposed power plant's  
6 design, analyzing its potential for adverse environmental  
7 impacts, and ensuring that these permitted power plants  
8 comply with all laws and conditions of their CEC license --  
9 which we'll hear some in a little while from some  
10 colleagues -- the STEP Division also plays a role in  
11 planning California's future electric system  
12 infrastructure. The Division has led and proactively  
13 collaborated with partner agencies on multiple landscape  
14 level planning efforts, developing a future electric system  
15 infrastructure around land use and transmission planning,  
16 and more recently offshore wind planning activities.

17           Today's informational item is focused on our  
18 offshore wind activities and to share what was learned on  
19 our East Coast Offshore Wind Energy Study Tour. Next  
20 slide, please.

21           For prospective, as you're aware Assembly Bill  
22 525 requires the CEC to complete three interim reports that  
23 will inform the final AB 525 Offshore Wind Strategic Plan.  
24 As of April 2023, the CEC has completed two of those three  
25 interim reports. The reports include the maximum feasible

1 capacity and megawatt planning goals for 2030 and 2045,  
2 which resulted in -- thanks to all of you -- an  
3 aspirational floating offshore wind goals of 2 to 5  
4 gigawatts for 2030 and 25 gigawatts for 2045.

5           The second interim report completed was a  
6 preliminary assessment of economic benefits of offshore  
7 wind related to sea port investments and workforce  
8 development.

9           The third interim report, the permitting roadmap,  
10 is forthcoming.

11           In addition to AB 525, Governor Newsom has  
12 directed the CEC through the state's budget process to  
13 develop a \$45 million grant program to make investments in  
14 facility planning and development activities that will  
15 advance the capabilities of deploying offshore wind energy.  
16 The program will include grant categories that target  
17 different phases of preparing ports, and waterfront  
18 facilities support offshore wind energy development. This  
19 directive was the basis for the East Coast Tour. Next  
20 slide, please.

21           As California leads the way on the Pacific Coast,  
22 the East Coast of the United States already has two  
23 operating offshore wind farms, totaling more than 40  
24 megawatts with an additional 35 gigawatts identified. All  
25 of which are part of the US offshore wind development



1 pipeline. The US Department of Energy tracks the pipeline  
2 activities from operation, under construction approved,  
3 site control and planning. This pipeline consists of 10  
4 Eastern States and California.

5 Therefore, last month, a delegation of key  
6 California senior energy and agency leaders and staff,  
7 tribal leaders and advocates, and nonprofit stakeholders  
8 participated in a fact-finding mission designed to educate  
9 ourselves on the various components of sustainable,  
10 environmental, and equitable offshore wind energy  
11 development on the East Coast including manufacturing  
12 infrastructure, and workforce development, and operation  
13 and maintenance. All with a view toward increased  
14 understanding of technical, economic, and policy  
15 challenges, opportunities, and best practices that might be  
16 applied to California's pursuit of offshore wind  
17 development.

18 The tour was organized by the Renewables 100  
19 Policy Institute, a California-based 501(c)3 and was made  
20 possible with funding by Climate Imperative. Next slide,  
21 please.

22 The first stop on the tour was a site visit with  
23 experts at ProvPort, Inc. Managed by Waterson Terminal  
24 Services, the port has been an epicenter of early offshore  
25 wind adoption in the United States. Formerly a municipal

1 port and now a 5013, operated to benefit the City of  
2 Providence ProvPort has been the host port for the Block  
3 Island Wind Farm, a first of its kind deployment of five  
4 offshore wind turbines off the Rhode Island coast. The  
5 port specializes in component stevedoring such as towers,  
6 blades and pre-assembly and cargo handling. And works  
7 closely with the building trades.

8           ProvPort is in the process of expanding and  
9 preparing to host the Ørsted/Eversource ProvPort Facility,  
10 which will enable the 704 megawatt Southfork/Revolution  
11 Wind Farm Project that is expected to provide over 300  
12 megawatts to Connecticut and 400 megawatts to Rhode Island  
13 by 2025.

14           Other ports in Rhode Island supporting offshore  
15 wind development include the port of Davisville, a state-  
16 run facility closer to the ocean than ProvPort that is  
17 currently examining how existing port infrastructure can be  
18 repurposed in preparation for offshore wind activities.

19           And then at the East Providence Bay, a portion of  
20 the existing site is being turned into a port to  
21 accommodate offshore wind utilities. The facility has  
22 secured its permits and is now seeking federal funding, as  
23 the state has already invested 75 million in this project.

24           Rhode Island leadership shared that realizing the  
25 offshore wind potential will require a network of ports

1 along with manufacturing, construction and operation and  
2 specific supply chain opportunities that include subsea  
3 cable manufacturing, foundation marshalling, scour  
4 protection, and stone staging for the monopile foundations,  
5 wind turbine generator component manufacturing, crew vessel  
6 support, sea fastening/grillage fabrication and marine  
7 coordination just to name a few. Next slide, please.

8           The delegation then visited the US Maritime  
9 Research Center, a nonprofit educational resource center  
10 focused on Marine operations and risk. A tour of its  
11 offshore wind simulator project allowed the group to have  
12 an immersive virtual experience at a time of year when  
13 sailing out to the Block Island Wind Farm was not possible.  
14 Computer-generated data collected by other vessels and  
15 built into the simulator in real-size scale and location  
16 gave participants a realistic sense of what it is like to  
17 navigate waters at an offshore wind farm.

18           The group also met with offshore wind experts  
19 from the University of Rhode Island, the Rhode Island  
20 Department of Environmental Management, and the Rhode  
21 Island Office of Energy Resources. These state agencies  
22 offered some history of the Block Island Wind Farm, which  
23 started its planning process in 2007 and became fully  
24 operational in 2016. Among lessons learned, it was shared  
25 that submerged cable lines that (indiscernible) property

1 east permitting compared to those under local jurisdiction  
2 due to expertise and capacity at the state level.

3 We also met with the Rhode Island Regulatory and  
4 Energy Commission, who had been looking at costs with the  
5 Block Island Wind Farm project electricity costs reported  
6 to be about 23 cents per kilowatt hour with the 3.5 percent  
7 escalator. The current wind farm however, under  
8 development expected to be operational by 2025, is the 400  
9 megawatt Revolution Wind Project. And it is estimated to  
10 come in at 9 cents per kilowatt hour, which is within the  
11 range of the New England power purchase agreements of 8  
12 cents to 14 cents per kilowatt hour.

13 The lesson learned here is that the power  
14 purchase agreements are essential for developer engagement.  
15 And that California should ensure that the state's  
16 permitting process should continue to align with the Bureau  
17 of Ocean Energy Management or BOEM permitting processes.  
18 Next slide, please.

19 The delegation next traveled to New London,  
20 Connecticut to view the offshore wind port development at  
21 the Connecticut Port Authority State Pier, which together  
22 with the offshore wind development joint venture of Ørsted  
23 and Eversource is investing more than 280 million to  
24 redevelop the state port to receive offshore wind component  
25 deliveries.

1           The port will be the first operational US based  
2 heavy-lift marine terminal to accommodate offshore wind  
3 towers, NASA nacelles and blades, along with other maritime  
4 cargoes.

5           The offshore wind projects commissioned by  
6 Connecticut New York and Rhode Island totaling  
7 approximately 160 turbines with an output of nearly 2  
8 gigawatts, or enough to power over 1 million homes, are  
9 scheduled for assembly and delivery from the New London  
10 Port starting this summer. The port aims to be zero  
11 emission with an electric plug in infrastructure for dock  
12 vehicles.

13           The port personnel emphasize the importance of  
14 engaging stakeholders early and often, and that they had to  
15 address the avoidance of construction activities during the  
16 mating season of the threatened Peregrine Falcon and the  
17 protection of the Winthrop Point living coastline, as well  
18 as a section of the port to be designated specifically for  
19 fishing boats. Next slide, please.

20           On the final day of the tour, the delegation  
21 visited the Port of Paulsboro in New Jersey, where the  
22 company EEW American Offshore Structures, has been  
23 developing a manufacturing plant to construct offshore wind  
24 components such as the enormous monopiles that the group  
25 got to see up close, giving us a sense of the magnitude of

35

1 the equipment involved. And realizing offshore wind  
2 projects, which you can also see on the photo to the left,  
3 right here.

4 The State of New Jersey has heavily invested in  
5 the project which leverages the state's heavy industrial  
6 and welding workforce. The lead port construction engineer  
7 explained that workforce training is key, especially  
8 teaching specialized welding techniques. Next slide,  
9 please.

10 The delegation then traveled to Baltimore,  
11 Maryland to join the annual IPF Offshore Wind Conference,  
12 where over 3,000 participants gathered to network and learn  
13 about current policies, technical and marketing issues  
14 facing the United States offshore wind development.

15 I participated in a conference panel on investing  
16 in the industry, bidding credits for offshore wind lease  
17 areas, where we discussed investing money and supply chain  
18 and workforce development. And eligible uses of the  
19 bidding credit money as well as the growth potential this  
20 has for supply chain development in the United States.

21 Reid Boggiano, Senior Analyst at California  
22 State Lands Commission spoke on a pilot panel titled "West  
23 Coast California, Floating Offshore Wind's Golden  
24 Opportunity" regarding their recent studies on existing  
25 port retrofits in California.

1           Our formal itinerary ended with a panel titled  
2 "East Meets West: State Driven Solutions to Transmission  
3 Constraints and Technical Barriers" where Le-Quyen Nguyen,  
4 Deputy Secretary for Energy at the California Natural  
5 Resources Agency joined the discussion about the state  
6 planning process, what each state can learn from one  
7 another, and what additional outside-the-box thinking is  
8 required. Next step, please.

9           The delegation discussed various comparisons  
10 between East and West Coasts' offshore wind development,  
11 including fixed bottom most development on East Coast  
12 versus floating development in California. Their  
13 permitting progress, East Coast is ahead with 700 to 800  
14 megawatt projects coming on this year with transmission  
15 capabilities, neighbor-state collaboration, and finally  
16 financing were a major challenge on both coasts.

17           However, the consensus from everyone we met  
18 indicated that the key activities that need to be addressed  
19 early include port redevelopment, which includes the  
20 ability for manufacturing and assembly facilities to be  
21 permitted. And of course financing for those facilities,  
22 transmission expansion, and associated permitting with  
23 transmission, power purchase agreements, and then most  
24 importantly, compromise. Having the port and  
25 infrastructure ready to receive offshore wind equipment for

1 assembly is key to successful development. And  
2 transmission obviously, with multi-agency permitting, needs  
3 to ensure there is a mechanism in place to transmit that  
4 energy developed from offshore wind. And power purchase  
5 agreements are fundamental to the success of the developers  
6 in the local communities.

7           It was emphasized by our New England Coast  
8 colleagues that regional collaboration is essential, rather  
9 than everyone competing and trying to do all for  
10 themselves. We need to find compromises and not look at  
11 the deployment offshore wind from a winner and loser  
12 perspective. We need to engage early and often with our  
13 diverse stakeholder community.

14           With every site tour, the message is clear that  
15 bicoastal collaboration is welcome and can help both East  
16 and West Coast states avoid mistakes and inefficiencies as  
17 well as speed up the learning process to deploy offshore  
18 wind. Next slide, please.

19           We are nearly three-fourths complete on our AB  
20 525 mandates. And I would be not able to stand here today  
21 and share what we have done including my ability to go to  
22 the East Coast if it were not for a great team. For those  
23 of you don't know, a year ago we had 1.5 p-y for offshore  
24 wind. Thanks to my Deputy Director Gina Tosi, we were able  
25 to staff quickly once the budget was passed.



1           The team includes the leadership of Melissa  
2 Jones, Jim Bartridge, our Project Manager Rachel MacDonald,  
3 and our team from Eli Harland, Paul Deaver, Kristy Chew,  
4 Lizzy Barminski, Danielle Mullany, and our retired  
5 annuitant, Scott Flint.

6           Finally, the next fact-finding opportunity for  
7 those in the offshore wind space will be the CEC's May 8  
8 Symposium "On With The Wind Toward Getting to 25 gigawatts  
9 of Offshore Wind by 2045."

10           Thank you for your time. And this concludes my  
11 presentation.

12           CHAIR HOCHSCHILD: Thank you. That was terrific.  
13 And congratulations again on all the progress. And I want  
14 to just recognize, I believe there's eight people now  
15 working full time on offshore wind of the Energy  
16 Commission.

17           And I really want to just raise up that this  
18 technology is going mainstream. The UK already has 10  
19 gigawatts installed and they're going to 50 gigawatts by  
20 the end of the decade, by 2030. So they're going to get  
21 the majority of their electricity from offshore wind. I'm  
22 a big believer in these study tours, and particularly on  
23 categories of technology like this where we're actually  
24 behind. East Coast is ahead of us, Europe is way ahead of  
25 us. And, you know, we do not want to reinvent the wheel.

1 We have to learn from folks who are further along than we  
2 are. And I really appreciate the time you spent.

3 I did want to provide an opportunity for our  
4 Executive Director Drew Bohan to share any observations or  
5 comments he has. He was able to join on this, so Drew,  
6 anything you'd like to add?

7 MR. BOHAN: Thank you, Chair. Let me make sure I  
8 get my video on my apologies. Oh, it's all right.

9 I would just add -- I think Elizabeth covered it  
10 really well -- but I would just add there's no substitute  
11 for seeing this stuff up close. And one of the facilities  
12 we went to was, I forget exactly but I want to say 40  
13 acres, and all they manufactured was a part at the bottom  
14 of the sea that is designed to collect rust, an electrical  
15 component. And the platform where folks go up into the  
16 tower to stand, and a door. And this was about 40 acres,  
17 just to do those portions of it.

18 So it really helped us understand that what the  
19 developers need they've told us is three things. They need  
20 a port. They need transmission, a transmission solution.  
21 And they need some sort of signal that this will be funded.  
22 And there's various ways to do each of these things. But  
23 the port one in particular was valuable to see the scale  
24 that it's going to take, and the size. So it was great to  
25 see Humboldt some weeks ago when we traveled up there.

1 That's obviously very large. But I would just say these  
2 activities that we're endeavoring to do, there's no  
3 substitute for seeing what it looks like up close.

4 CHAIR HOCHSCHILD: Yep, agree.

5 Any comments from my colleagues on this? Yeah,  
6 Commissioner Monahan?

7 COMMISSIONER MONAHAN: Well, actually I think I  
8 might need you, Elizabeth, to go. And I just want to say  
9 first I really loved how you did this by like what are the  
10 lessons learned from each of the site visits. I just  
11 thought that was a really helpful way to encapsulate and  
12 the fact that this was such a wide-ranging set of issues  
13 that you examined environmental issues through practical  
14 engineering. And also community engagement, which I think  
15 is really critical and which we've been doing, I think  
16 pretty well, but of course need to do more as we move  
17 forward. And so I just want to say, first off, that was a  
18 tremendous presentation.

19 The Chair and I were lucky to be part of a trade  
20 mission to Japan. And we talked then about this potential  
21 for a collaboration with Japan, since they too are looking  
22 at deep waters for offshore wind, so some similarities with  
23 California.

24 And I was curious when you were listening in on  
25 the international discussion whether there are other

1 countries that we may want to think about collaborating  
2 with or studying together as we explore some of the more  
3 complexities that we're facing in California.

4 MS. HUBER: No, it's a great question. So one of  
5 the things that we've learned, like we've done Memorandums  
6 of Understanding out here with different countries, that  
7 was very helpful for them, was the work in Denmark and  
8 Norway and Germany. Germany is leading on the  
9 manufacturing. So for instance, what Drew was describing,  
10 these are anode cages. And these cages go around those  
11 huge monopiles where they can absorb the rust and allow the  
12 natural habitat to adapt to those cages.

13 So that was very helpful to the East Coast in  
14 order to get those five and those are fixed bottom offshore  
15 wind turbines. But in order to even be able to say that  
16 they've deployed, they had to work with their European  
17 partners. And in particular, were these three countries  
18 where they've established MOUs and have learned best  
19 practices, because of their history of already deploying  
20 offshore wind and having successes, including learning how  
21 to go out and do maintenance. That's why we visited that  
22 simulator to see what it takes to get a vessel out and bump  
23 up against that monopile and then actually get off and  
24 climb.

25 So those were lessons learned that they actually

1 experienced in Norway where they were actually able to go  
2 out and do a simulation. In real time though, at a real in  
3 the ocean near a turbine. So they were they were singing  
4 their praises.

5 COMMISSIONER MONAHAN: And we have an MOU with  
6 Denmark. Do we have an MOU with Norway or with Germany on  
7 this?

8 MS. HUBER: I know we have a Have a very  
9 comprehensive MOU with Germany. We've had comprehensive  
10 ones with Norway, but my understanding with the leadership  
11 of the Chair, we are embracing engaging with Norway to do  
12 one specifically with Norway on offshore wind development.

13 COMMISSIONER MONAHAN: I mean, you can almost  
14 envision a multi-country with California, a singular one on  
15 this issue. Because it's so important for us and for  
16 meeting our clean energy goals and reliability writ large.  
17 And there's just so much synergy that's going to be  
18 happening, I think, on a global scale here. So thank you.  
19 That was great.

20 Yeah, absolutely. And Norway is now developing  
21 what will be the largest floating wind project in the  
22 world. So some great partners there. Thank you,  
23 Elizabeth.

24 I wanted to just highlight two things for those  
25 who are listening or in the room and are interested in this

1 topic. First is that we are hosting this offshore wind  
2 symposium at the Natural Resources Agency building on May  
3 8th. It's right in advance of the wind industry conference  
4 that's happening that week in Sacramento, and I want to  
5 welcome everyone to join that we have a terrific lineup.  
6 And I believe there's a "save the date" coming out today.

7 COMMISSIONER MONAHAN: Oh, and also the best  
8 name, "On with the Wind." Where did that come from? Good  
9 branding.

10 CHAIR HOCHSCHILD: And then secondly, Elizabeth,  
11 a request for you. We did join the National Offshore Wind  
12 Research and Development Consortium. And I'd like to ask  
13 at a later date that we set an information item to have a  
14 presentation just on what we're funding through that,  
15 because there's a lot of innovation that's going to help  
16 drive down the cost of wind. And again, this is in close  
17 collaboration with all of the different sites you visited.  
18 They're jointly investing in this better mooring lines and  
19 wind turbines and so forth. And it'd be great to have an  
20 informational item on that at a time when you see fit for  
21 that.

22 I know that Jonah Steinbeck (phonetic) I believe  
23 is our representative on that for the Energy Commission.  
24 So maybe work together and let's put that on a future  
25 meeting. Thank you for the update.

1           Unless there's any other questions or comments,  
2 okay we'll move on to Item 5, which is the Resolution for  
3 Jim Walker. So what I'll do at this point is read this  
4 resolution, and then welcome any comments.

5           "Whereas, James "Jim" Walker was born July 2,  
6 1944, in Bethlehem, Pennsylvania. He earned a bachelor's  
7 degree in physics from Princeton University and a doctorate  
8 in business from the Harvard Business School; and

9           "Whereas, Walker served as an energy advisor in  
10 the Nixon and Ford Administrations; and

11           "Whereas, Walker provided leadership to the  
12 California Energy Commission in its early days serving as  
13 executive director from 1978 to 1979 and as a commissioner  
14 from 1979 to 1982; and

15           "Whereas, Walker was a visionary who spent  
16 decades pioneering wind development in California and on  
17 three continents; and

18           "Whereas, as an Energy Commission commissioner,  
19 Walker helped bring the first commercial wind farms in the  
20 world to the Altamont, Tehachapi, and San Gorgonio passes;  
21 and

22           "Whereas, after leaving the commission, Walker  
23 continued advancing clean energy policy as vice president  
24 of MCR Geothermal, and as a governmental affairs  
25 representative to Edison Mission Energy, and as vice

1 chairman of EDF Renewable Energy; and

2           “Whereas, Walker further advanced clean energy as  
3 director and co-founder of Nordic Windpower, a wind turbine  
4 manufacturer; co-founder of Princeton Development  
5 Corporation, an independent developer of energy efficiency  
6 and renewable energy projects in the U.S. and Europe; and a  
7 principal with Asociados PanAmericanos, a developer of  
8 community wind projects in Mexico; and

9           “Whereas, Walker provided leadership to the U.S.  
10 wind industry as board president of the American Wind  
11 Energy Association from 2008 to 2009 and as the  
12 association’s Wind Industry Person of the Year in 2007; and

13           “Whereas, in 2008, Walker founded the American  
14 Wind Wildlife Institute (now known as the Renewable Energy  
15 Wildlife Institute), which facilitates the responsible  
16 development of wind and solar energy while protecting  
17 wildlife and wildlife habitat; and

18           “Whereas, in 2008, Walker co-founded and then  
19 served as Chairman of Pacific Environment, an environmental  
20 organization based in San Francisco, whose objective is to  
21 protect the living environment of countries around the  
22 Pacific Rim; and

23           “Whereas, Jim is remembered by friends, family,  
24 and colleagues as a man of exceptional personal grace and  
25 good humor, as thoughtful and generous, as an inspirational



1 leader for our times.

2 "NOW, THEREFORE, BE IT RESOLVED that the  
3 California Energy Commission recognizes and commends James  
4 "Jim" Walker for his outstanding contributions to a  
5 sustainable energy future."

6 Let's give a round of applause to Jim Walker.  
7 (Applause.) So in a few minutes I'll present this to  
8 Virinder and we'll take a photo, but I would welcome any  
9 additional public comment at this time.

10 MS. BADIE: Hi. This is Mona Badie, the Public  
11 Advisor for the Energy Commission. There's two ways to  
12 comment on Item 5, the resolution commemorating Jim Walker.  
13 If you're in the room, and you'd like to join the queue to  
14 make a public comment, please visit the Public Advisor's  
15 table. There's QR codes on the wall near Dorothy. And if  
16 you are on Zoom you will use the raise hand feature to  
17 notify us you would like to comment. And if you are on the  
18 phone, you can press \*9 to raise your hand to make a  
19 comment.

20 And there's no comments in the room, and I'm not  
21 seeing any raised hands on Zoom.

22 CHAIR HOCHSCHILD: Okay. Well, I'll just say  
23 before we vote on this that I did hear from a number of  
24 folks who worked with him and knew him and that he was also  
25 a mentor. I never had a chance to meet him. But I'll just

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1 reflect back that I feel enormously grateful for the early  
2 mentorship I had in my career. And I just, you know, I  
3 recognize when I hear that other people being an  
4 inspiration, I'm so grateful to have had people in my life  
5 who do that. And I just wanted his family to know we see  
6 that and appreciate that.

7 So with that I would welcome a motion on Item 5  
8 from Commissioner Monahan.

9 COMMISSIONER MONAHAN: I move to approve Item 5.

10 CHAIR HOCHSCHILD: Is there a second from  
11 Commissioner Gallardo?

12 COMMISSIONER GALLARDO: I second.

13 CHAIR HOCHSCHILD: All in favor say aye.  
14 Commissioner Monahan.

15 COMMISSIONER MONAHAN: Aye.

16 CHAIR HOCHSCHILD: Commissioner Gallardo?

17 COMMISSIONER GALLARDO: Aye.

18 CHAIR HOCHSCHILD: And I vote aye as well. Item 5  
19 passes unanimously. If we could then present the  
20 resolution, I'll come down. In fact, why don't we all go  
21 down and let's just take a picture, Virinder, if we can  
22 present it to you. Thanks.

23 (The resolution was presented and photos taken.)

24 MS. BADIE: Hi, Chair. We have one more comment  
25 on Zoom. Bob Hoffman would like to make a comment for this

1 item. Bob, I'm going to unmute your line. And you can  
2 make your comment now, please.

3 MR. HOFFMAN: Thank you. Can you guys hear me?

4 MS. BADIE: Yes.

5 MR. HOFFMAN: Great. Yeah, thanks. I submitted  
6 a letter to the Commissioners and I won't read the whole  
7 letter. Jim was a great and close friend of mine, and a  
8 mentor to me early in my career when I was in Mission  
9 Energy and Jim was the lobbyist for Governor, an advisor.  
10 And I want to just read one paragraph that I remember of  
11 Jim, that you know, he was one of the CEC pioneers that  
12 pride himself in stopping the development of 10 coal-fired  
13 power plants that were planned in California in the 1990s.

14 And I worked with Jim. He brought me out as a  
15 consultant to enXco who developed the Shiloh project up in  
16 the, you know, the Suisun Bay (phonetic) Area. And  
17 ironically, PG&E had proposed a 1,600 megawatt Montezuma  
18 coal-fired power plant that was sited basically where enXco  
19 Shiloh wind farm sits. And in fact, the Birds Landing  
20 Substation is where that coal-fired power plants switchyard  
21 would have been. So, you know, 20 or 30 years later, Jim  
22 put wind where coal was planned to exist.

23 So I just wanted to propose or suggest that it  
24 would be fitting to rename Birds Landing Substation as the  
25 Jim Walker Substation in his memory. And thanks.

1           Now, there's a letter I submitted if folks want  
2 to read some of the details of my experience with Jim.

3           And just to finally summarize, Jim left his mark  
4 on me and will live on through everyone that Jim was  
5 fortunate to cross paths with, and capture what he had to  
6 offer. Thank you.

7           CHAIR HOCHSCHILD: Thank you.

8           Any additional comments?

9           MS. BADIE: That is it for public comment. Thank  
10 you.

11          CHAIR HOCHSCHILD: Yeah, thank you.

12          You know, I'll just share one additional thought.  
13 You know, one of the reasons I really hold -- and I think  
14 we all hold so much respect for Jim and leaders like him of  
15 that era -- is to be an advocate for renewable energy at  
16 that time, was a lot harder. The costs were so much  
17 higher, the technology was not mature. And now it's  
18 actually a pretty -- you can make an economic argument  
19 alone for renewables, right. It's the cheapest resource  
20 right now in California. But that time is far from that  
21 and the pathway to get here was not totally clear.

22          So I just think the human qualities of boldness  
23 and commitment, you know, and the tenacity required to do  
24 that is phenomenal. And so we know we stand on the  
25 shoulders of giants here today, because we wouldn't be here

1 today and renewables wouldn't be here today without the  
2 early work. So I just really want to pay tribute.

3 And Virinder, when you do pass the resolution on  
4 to Jim's family, just please convey all of our gratitude  
5 from Commissioners and staff at the Energy Commission for  
6 his remarkable leadership.

7 And thank you all for those comments.

8 We'll turn now to Item 6, Electric Program  
9 Investment Charge, and the 2022 Annual Report. Fritz Foo.

10 MR. FOO: Good morning, everyone. My name is  
11 Fritz Foo. I am a Supervisor in the Energy Research and  
12 Development Division, Supervisor of External Engagement.  
13 And I'm very enthused and excited today to present our 2022  
14 EPIC Annual Report. Next slide, please.

15 Just to give a little bit of background, EPIC is  
16 a ratepayer-funded program. And over the past 10 years, it  
17 has invested over a billion dollars into companies in  
18 California's clean energy economy. Over 70 of those  
19 technologies have been commercialized. And importantly of  
20 those companies and other investments, we've garnered over  
21 \$10 billion in terms of private investment that those  
22 companies have attracted. And their average employment has  
23 gone up over 20 percent.

24 And I really want to highlight that, because to  
25 the earlier business meeting item, this is really the role

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1 of publicly funded research. We are able to fill these  
2 gaps at an early stage when these technologies are deemed  
3 too risky for private investment or recognition. And this  
4 validation from EPIC is really what enables them to  
5 continue to move on to the later stages of technologies,  
6 technology readiness, manufacturing scale up. So yeah,  
7 next slide.

8           Just to provide a topical overview of the  
9 cumulative investments to date, a large part of it really  
10 has been focused on that clean energy economy, things like  
11 the regional clusters, the different types of grant  
12 offerings available. But also increasingly, as we've seen  
13 more climate disasters, the exacerbation of those weather  
14 phenomena, there's been more focus on things like  
15 resiliency and safety. Of course, with the build out of  
16 renewable there's also a focus on energy storage, on  
17 decarbonization, electrification. And also taking a look  
18 at those last two categories, really in zero emission  
19 vehicles as well as industry and agriculture. EPIC is also  
20 addressing those areas as well. Next slide, please.

21           Just to highlight in 2017, Assemblymember Reyes  
22 passed AB 523. And that required 25 percent of EPIC's  
23 Technology Demonstration Deployment Funds to be used in,  
24 and benefiting disadvantaged communities. And an  
25 additional 10 percent in low-income located in and

1 benefiting low-income communities.

2 Now, at the time EPIC was already meeting those  
3 goals. But we're very proud to have now gone above and  
4 beyond to the point where over 70 percent of our resources,  
5 our investments, are given to under resourced communities.  
6 And now that includes \$22 million in California Native  
7 American tribes. Next slide.

8 And related to that, we joke that we feature Blue  
9 Lake Rancheria every year. But really this is a good  
10 demonstration and example of how a publicly funded research  
11 project after its completion, after we've handed it back to  
12 the project owners, can continue to demonstrate benefits  
13 publicly.

14 So in December of last year an earthquake hit the  
15 Humboldt region. And the Blue Rancheria Microgrid, which  
16 was funded by EPIC was able to island within seconds. And  
17 also provide critical services, including emergency medical  
18 services. And also, as you can see in the picture, the  
19 casino was able to maintain its power as the outage  
20 occurred. Folks were able to go to the gas station and gas  
21 their car, get a charge on their electric vehicles. So  
22 again, we really want to highlight that this is the value  
23 of these publicly funded dollars, these microgrids that  
24 otherwise maybe would not have occurred with that. Next  
25 slide, please.

1           So taking a look at 2022 it was a historic year  
2 in terms of the Clean Energy Transition. There was a lot  
3 of federal infusion of dollars, but also at a state level  
4 significant policies were passed setting higher goals. And  
5 so in terms of the six projects that were highlighted in  
6 this year's EPIC annual report, the first we have three  
7 different subjects or topics.

8           The first is increasing resilience and  
9 reliability. Again, as we've seen in the past several  
10 years, increasing wildfires and climate weather phenomena  
11 there's a greater need and urgency to invest in  
12 technologies that support that.

13           The second element really is this idea of our  
14 energy storage economy, both the development and  
15 manufacturing side domestically, but also at the tail end  
16 when we try to recycle and figure out what to do with some  
17 of these, for example, electric vehicle batteries at the  
18 end stage of their life. And that also in talking about  
19 this energy storage, California economy, that also includes  
20 alternative energy storage technologies as well.

21           And of course, as I like to think about it, the  
22 Clean Energy Transition is the first phase that was the  
23 build out of renewables. The second phase really is the  
24 use of, of energy storage and load flexibility to really  
25 get the most value out of the electricity that we're



1 generating and deploying it at different times of the day.  
2 And that is, of course, the electrification of everything.  
3 Once we have those clean electricity on our grid, we're  
4 able to deploy that in valuable ways. Next step, please.

5           So the first project I want to highlight on  
6 resiliency was the Miramar Microgrid. This is a project  
7 that really demonstrates the close partnership that the  
8 Energy Commission has with the military. So this was a  
9 microgrid at Miramar down in San Diego, near San Diego,  
10 that was funded primarily by the Department of Defense and  
11 Department of Energy. But the EPIC research dollars here  
12 were able to enable an ongoing installation of energy  
13 storage on site. This is the energy storage on site allows  
14 the incorporation of renewable landfill gas from nearby  
15 SDG&E that bolsters their islanding capabilities. But also  
16 importantly, this microgrid has become now an example for  
17 the rest of the Department of Defense's military bases.

18           So as we've interviewed them and spoke with them,  
19 they get interviews all the time, the Department of Defense  
20 is actively figuring out how to propagate these microgrid  
21 resources at other stages, not only in California, but  
22 nationally and internationally as well. So again, another  
23 example of how these kinds of publicly funded dollars can  
24 really extend beyond California's borders.

25           I also want to note on one quick thing on the

1 Miramar Microgrid, they were able to participate last year  
2 in the emergency load reduction program. That really was  
3 enabled by the EPIC grant and the relationships that were  
4 fostered in part by the Energy Commission staff. And so  
5 the ELRP over that 10 days they were able to garner over  
6 \$300,000 in incentives by participating and being able to  
7 reduce their load. And they've also aside from those  
8 instances also been able to reduce their load multiple  
9 times for load flexibility as well before that. Next  
10 slide, please.

11           The next one we want to highlight on resiliency  
12 and reliability is Pyregence. This is a consortium of  
13 researchers that are really advancing wildfire and climate  
14 change forecasting and modeling. So the EPIC dollars  
15 coalesce this group of researchers, they come from all over  
16 the US. And it's important to note that with these models  
17 being combined with these researchers working together,  
18 they have been able to improve both the granularity and the  
19 timeliness of these wildfire modeling and climate change  
20 modeling.

21           And it's something I really want to highlight is  
22 this software is entirely Open Source. And what that means  
23 is that not only can folks -- not only do they invite folks  
24 to test their software, submit open lines of code, it also  
25 means that anyone can use it as well. And that has been

1 very valuable for not only folks like CAL FIRE, utilities,  
2 local regional planning agencies, insurance companies, it  
3 really has enabled folks to plan better but also actively  
4 in the middle of a wildfire respond better as well. Next  
5 slide, please.

6           The next two companies that we want to highlight  
7 focus on energy storage, and the clean energy economy.  
8 South 8 Technologies, this is located near San Diego. They  
9 spun out of the UC San Diego entrepreneurial ecosystem down  
10 there. They are developing a lithium ion gas electrolyte.  
11 So lithium batteries are ubiquitous. They power everything  
12 from electric vehicles to your laptops and cell phones.  
13 And this lithium ion gas electrolyte promises to perhaps be  
14 more affordable, but also have higher energy density, lower  
15 temperature performing capabilities. The key thing to note  
16 here is that this lithium ion gas electrolyte can very  
17 readily slot into existing lithium battery technologies.  
18 And so that promises again, potentially faster charging and  
19 electric vehicles, more electric appliances, and colder  
20 climates.

21           One thing I wanted to also note is that this  
22 company, South 8 has received multiple grants from the  
23 California Energy Commission through the EPIC program.  
24 This includes CalSEED for these very early stage  
25 technologies as well as the CalTestBed. And as of late,

1 they actually won over three \$3.125 million from the ARPA-E  
2 program. So again, these EPIC dollars here, given at the  
3 state, then go on to garner federal dollars as well. Next,  
4 please.

5 Also looking at the battery manufacturing economy  
6 here in California. Next we have Smartville, interestingly  
7 enough also located in UCSD and also spun out of the UCSD  
8 entrepreneurial ecosystem down there.

9 So they have an interesting project where they're  
10 taking electric vehicle -- used electric vehicle batteries,  
11 and creating modular assemblies with them. So they're  
12 aggregating different types of electric vehicle batteries  
13 from different manufacturers that have different form  
14 factors. And with their software, with their physical  
15 unit, they're able to turn these into distributed energy  
16 generation resources. So they've deployed at UC San Diego  
17 at a library. And they actually are now also planning to  
18 deploy at the San Joaquin Peaker Plant. This is in a  
19 disadvantaged community down in San Diego.

20 And again if once that gets installed, that goes  
21 to show how they are planning to expand to provide these  
22 clean energy benefits. Noteworthy for them, they recently  
23 won a \$6 million in the ARPA-E program, and are continuing  
24 to scale up manufacturing. Next, please.

25 So the last two projects that we wanted to

1 feature focus on electrification. Gradient is located in  
2 San Francisco, and folks have been calling them the Tesla  
3 of the HVAC world where they have a unit that is addressing  
4 low-income and multifamily affordable housing barriers,  
5 specifically installing heat pumps that provide heating and  
6 cooling services. So as you can see from the picture  
7 there, their unit sits on the windowsill, below the below  
8 the windowsill I should say. And that allows not only  
9 airflow, but light to come in. This is an increased  
10 upgrade from things like swamp coolers that normally fit in  
11 those windows.

12           And in terms of the real benefit for these low-  
13 income and affordable housing folks, the interesting thing  
14 is that the customer can buy the unit directly from the  
15 company, from their website. It costs about \$2,000 and  
16 they're hoping to bring that cost down. But then the  
17 customer can install it themselves saving up to \$5,000 in  
18 installation costs. And they're able to take the unit with  
19 them after they move from that residence. And that really  
20 overcomes a barrier in terms of the tenant-renter situation  
21 of who actually gets to benefit from them after the renter  
22 leaves.

23           Radiant, I like to say really has been on a  
24 meteoric trajectory. They have become one of the real key  
25 highlights in our EPIC portfolio. In the past year, they

1 have not only garnered attention from folks like Time  
2 Magazine, but also they won an award with NYSERDA and New  
3 York City to produce 10,000 units over the next seven years  
4 in New York City for low-income and affordable housing. And  
5 on top of that they recently have received or in this past  
6 February, they were able to attract over \$18 million in  
7 (indiscernible) with private investment funding. So this  
8 is one of those companies that is now at this point in a  
9 later stage, already manufacturing and scaling up  
10 manufacturing and looking to expand.

11 CHAIR HOCHSCHILD: And where are they  
12 headquartered again?

13 MR. FOO: In San Francisco.

14 CHAIR HOCHSCHILD: In San Francisco, and where  
15 are they manufacturing?

16 MR. FOO: That I -- Santa Ana

17 CHAIR HOCHSCHILD: Santa Ana, okay. Great.

18 MR. FOO: Thank you. And the one last final  
19 thing I want to highlight very quickly on this one, this  
20 unit also uses the R-32 refrigerant, which is a low global  
21 warming potential refrigerant. And so that also provides  
22 additional emissions reductions as well. Next slide,  
23 please.

24 The final company that I would like to highlight  
25 is Twelve. Twelve is located in the East Bay Area, and

1 they are electrifying industrial chemical manufacturing.  
2 So a lot of times these processes are very mission intense.  
3 And what they're able to do with essentially a reverse  
4 electrolyzer is take carbon, water and electricity and  
5 produce carbon-based chemical precursors.

6           So the two products that they have already  
7 developed are sunglasses, and they're beginning to export  
8 aviation fuels. They partnered with Oakley, with Alaska  
9 Airlines, and are continuing to develop that. One of the  
10 important things to highlight about their device, which is  
11 featured in the picture there, this module is very readily  
12 able to take advantage of the excess renewable generation  
13 on sites and convert that into value added products.

14           And so this idea of an easy incorporation  
15 producing these chemical precursors that can easily slot  
16 into existing manufacturing processes is very valuable for  
17 reducing emissions in that sector. Next slide, please.

18           Looking ahead at 2023, it was a very exciting  
19 year for 2022. But there are of course, more challenges  
20 ahead. Taking a look at some of the topical areas, things  
21 like load flexibility, non-lithium long duration energy  
22 storage, clean hydrogen. Again, EPIC as an electric  
23 ratepayer funded program, we're always striving to provide  
24 benefits to the repairs, lowering these costs, and  
25 deploying them and making them more readily available. I

1 also want to note the floating offshore wind out there as  
2 well. Last slide, please.

3 So staff recommends approval of the 2022 EPIC  
4 Annual Report. We do plan to have a glossier, nicer  
5 version of it to be made very soon. But this report is  
6 going to be submitted to the Legislature and the CPUC on  
7 April 20th.

8 And with that, I'm happy to take any questions.  
9 Thank you.

10 CHAIR HOCHSCHILD: Great, thank you. So let's go  
11 to public comment on Item 6.

12 MS. BADIE: Good morning. This is Mona Badie,  
13 the Energy Commission's Public Advisor. The Commission  
14 welcomes public comment on Item 6 EPIC Annual Report.  
15 There are two ways to make a comment. If you're in the  
16 room, you can notify us by signing up by using the QR code  
17 at the table on the side of the dais. And if you are on  
18 Zoom, we ask that you use the raise hand feature to notify  
19 us if you'd like to make a comment here on the phone.  
20 Press \*9 , please.

21 I'll just give it a few seconds here. Okay, I'm  
22 not seeing anyone in the room or online that would like to  
23 make a comment, so back to you, Chair.

24 CHAIR HOCHSCHILD: Okay. Well, again just  
25 phenomenal work and great presentation, Fritz. Thank you,

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1 incredible. And it's particularly exciting on the heat  
2 pump technology just because Commissioner Monahan and I are  
3 just back from Japan, along with Linda Barrera, part of a  
4 climate delegation over there. And that was a major focus  
5 for us meeting with some of the heavyweight companies:  
6 Daikin and LG and others.

7           And it's just great to see the innovation  
8 happening. I think the design for easy installation is a  
9 really important feature of these things. And so that's  
10 something just, you know, making the transition easy, is  
11 really important. So I just was struck by that.

12           I already opined extensively about the tremendous  
13 work of the EPIC program earlier. So I don't have anything  
14 new to add to that, just to say a great presentation and I  
15 welcome any -- yes, Commissioner Gallardo?

16           COMMISSIONER GALLARDO: Yeah. Thank you so much,  
17 Fritz. That was a wonderful presentation, very thorough.  
18 And I wanted to highlight -- I did notice for I think it  
19 was Twelve, the job opportunities there. It was a started  
20 as a company of four, I saw it correctly. And then could  
21 turn into a company of over 200, so I really appreciate  
22 seeing that type of impact. And I'm curious, do you  
23 normally track that information for these EPIC recipients?

24           MR. FOO: We do work for the companies. They  
25 provide surveys annually, and even on a more frequent basis

1 than that, we check in with them. I'll highlight that  
2 Twelve, we've been partnered with them for I believe, over  
3 seven years, six or seven years. So that goes to show you  
4 the length of investment that it takes for these programs,  
5 or these companies to really get off the ground.

6 COMMISSIONER GALLARDO: Yeah, that's wonderful to  
7 see. And it's wonderful that we're able to continue, you  
8 know, working with them developing those relationships over  
9 all those phases. So thank you for that. And I would  
10 encourage more of that type of highlight of the workforce  
11 dynamic. And also appreciated what you mentioned on  
12 Gradient and how it's overcoming that barrier for tenants,  
13 which is significant for low-income communities,  
14 disadvantaged communities. So appreciate that and that was  
15 it. Thank you, Fritz.

16 CHAIR HOCHSCHILD: Commissioner Monahan?

17 COMMISSIONER MONAHAN: Well, the Chair was so  
18 articulate earlier that I didn't want to heap on, but now  
19 there's been some space and distance. And I want to say  
20 during your presentation, I was reaching out to my team  
21 already visiting Smartville hopefully next week. And I was  
22 like we need to visit, we need to go to these other  
23 companies, especially South 8 and the transformative  
24 potential of these companies to really ramp up our  
25 transportation electrification goals.

1           And the fact that this is happening here in  
2 California, I mean, I just want to say this is the beauty  
3 of EPIC. That we're taking our state monies to help  
4 companies that are really trying to overcome this Valley of  
5 Death. And showing how this is increasing investment. I  
6 thought your slide on the private sector investment  
7 following the EPIC early stage investment was really an  
8 important message here. You know, we want to make sure  
9 that this clean energy economy benefits companies here in  
10 California. We're the number one right now manufacturer of  
11 zero emission vehicles. We want to be the number one  
12 manufacturer of batteries. We want to capitalize on  
13 Lithium Valley to be able to use domestically extracted  
14 resources to be able to power the new energy economy. So  
15 just thank you for this presentation and really great  
16 manifestation of how state dollars are helping keep  
17 companies here in California and helping them flourish.

18           MR. FOO: I absolutely agree with that. And I'll  
19 just mention quickly before you all vote, I just want to  
20 give a quick shout out and thanks to the team. Erik Stokes  
21 for managing this project and Colleen Kredell as well for  
22 managing the project. And then Molly O'Hagan here for  
23 helping provide a lot of the bulk writing and organization,  
24 but also Misa Werner for pinch writing. It is definitely a  
25 group effort to get these projects to the finish line.

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1 CHAIR HOCHSCHILD: Yeah. Before we vote I would  
2 like to ask, Fritz, if you could work to set up a briefing  
3 with Gradient for myself and for Commissioner McAllister's  
4 offices? We do have the 6 million heat pump goal and we  
5 are planning a big building decarbonization symposium to be  
6 held here in October. And I would actually welcome that.

7 I think what's new about that is the ability to  
8 just in self-install and have it be very affordable. That  
9 to Commissioner Gallardo's point is really important for  
10 low-income communities, especially with higher heat. Like  
11 there's going to be a lot more need for cooling in the  
12 summer. So if you could work with Kat on my team and set  
13 that up for both of our offices. I think a Zoom meeting  
14 would be best. Thank you.

15 With that, I would welcome a motion from  
16 Commissioner Gallardo on Item 6.

17 COMMISSIONER GALLARDO: I move to approve Item 6.

18 CHAIR HOCHSCHILD: Is there a second from  
19 Commissioner Monahan?

20 COMMISSIONER MONAHAN: I second.

21 CHAIR HOCHSCHILD: All in favor say aye.  
22 Commissioner Gallardo?

23 COMMISSIONER GALLARDO: Aye.

24 CHAIR HOCHSCHILD: Commissioner Monahan.

25 COMMISSIONER MONAHAN: Aye.

1 CHAIR HOCHSCHILD: And I vote aye as well. Item  
2 6 passes unanimously.

3 We'll turn now to Item 7, Order Instituting  
4 Informational Proceeding. Welcome, Heather.

5 MS. RAITT: Good morning, thank you Commissioners  
6 and Chair. I'm Heather Raitt, Director for the Integrated  
7 Energy Policy Report. And staff is requesting the  
8 Commission's approval of an order instituting informational  
9 proceeding for the 2023 Integrated Energy Policy Report,  
10 which I'll refer to the report as the 2023 IEPR. But we're  
11 hoping to come up with a catchier name this year. Next  
12 slide, please.

13 So the Commission is required to prepare an IEPR  
14 every two years that provides an overview of major energy  
15 issues and trends facing California, with an update in the  
16 intervening year. The 2023 report will focus on  
17 accelerating the connection of clean energy needed to  
18 rapidly decarbonize the state's energy system while  
19 maintaining energy reliability, affordability, and  
20 enhancing equity. Decarbonizing the electric system is  
21 foundational for achieving the state's climate and clean  
22 air goals.

23 Adoption of this order appoints Commissioner  
24 Patty Monahan as the Lead Commissioner and Vice Chair Siva  
25 Gunda as the Associate Commissioner in this proceeding. It

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1 also directs the Executive Director and staff to gather and  
2 assess information that is needed to complete the 2023  
3 IEPR. Next slide, please.

4 So Commissioner Monahan has issued the scoping  
5 that identifies the topics and general schedule for the  
6 proceeding.

7 And as I mentioned, the focus this year is on  
8 accelerating the connection of clean energy resources. The  
9 state has established aggressive goals to achieve economy-  
10 wide carbon neutrality by 2045. SB 100, the joint agency  
11 analysis concluded that construction of new renewable  
12 generation and storage must be sustained at record-setting  
13 rates to achieve zero carbon retail sales of electricity,  
14 while also supporting the decarbonization of buildings and  
15 transportation. Further, the state needs to connect nearly  
16 1.4 million chargers by 2030 to power millions of light-,  
17 medium-, and heavy-duty electric vehicles to reduce air  
18 pollution that harms human health and to achieve climate  
19 goals.

20 The 2023 IEPR will identify barriers and  
21 solutions to accelerate the connection of clean energy  
22 resources, including interconnection, energization, and  
23 associated system upgrades. It will consider both  
24 transmission and distribution systems and will coordinate  
25 with ongoing proceedings at the CPUC and California ISO.

1           Further, the report will also include the  
2 development of various topics that are required by statute  
3 including a 15-year electricity and gas demand forecast.  
4 They will also look at the potential growth of hydrogen and  
5 its role in decarbonizing the electricity and  
6 transportation sectors. And it will finally also include  
7 various updates, such as from the informational proceeding  
8 on gas decarbonization and those required in statute such  
9 as estimating the benefits of the transitioning to clean  
10 transportation. And identifying strategies and options  
11 for the use of gas. Next slide, please.

12           So just to recap, I'd like to request your  
13 approval of this order instituting informational proceeding  
14 for the 2023 IEPR. And the order directs the Executive  
15 Director and staff to collect information needed to conduct  
16 the analysis identified in the 2023 IEPR scoping order.  
17 Renee Webster-Hawkins from the legal office is available to  
18 help answer any questions you may have. And so thank you  
19 for your consideration. That concludes my presentation.

20           CHAIR HOCHSCHILD: Thank you so much, Heather.  
21 Let's go to public comment.

22           MS. BADIE: Hello, there is Mona Badie again, the  
23 Public Advisor. The Commission welcomes public comment on  
24 Item 7 the IEPR OOIP. And if you're in the room, you can  
25 sign up to make a public comment by visiting the Public

1 Advisor's table and using the QR code. If you are on  
2 Zoom, we ask that you use the raise hand feature to notify  
3 us if you'd like to make a comment. And if you are on the  
4 phone, please press \*9.

5 I'll just give that a few seconds. All right,  
6 I'm not seeing anyone in any of the three venues, so back  
7 to you, Chair.

8 CHAIR HOCHSCHILD: Good, I would welcome our  
9 Commission discussion starting with Commissioner Monahan.

10 COMMISSIONER MONAHAN: Well, I want to thank  
11 Heather for being the Lead on so many IEPRs. And this one,  
12 I look forward to working with her together with Vice Chair  
13 Gunda, to make sure that we get to the finish line with all  
14 the statutorily required products. And to really tackle  
15 this meaty issue of speeding the interconnection and  
16 deployment of clean energy resources on the grid.

17 I want to say like, I do believe this is the  
18 moment for really putting our foot pedal to the metal to  
19 help interconnect clean energy resources, to interconnect  
20 solar, to interconnect storage. As we electrify  
21 transportation and buildings and industry, you know,  
22 basically we need to electrify everything we can as swiftly  
23 as possible. And ensuring that we have sort of the right  
24 policies in place to get us there will be critical.

25 I'm really happy to collaborate with our sister



1 agencies. This is really, I think, not an ownership of the  
2 CEC but a cross-agency ownership with the Air Resources  
3 Board. Which is counting on this in order to meet their  
4 advanced clean fleets rule, their advanced clean cars rule,  
5 and other regulations that they have developed or are  
6 planning to develop to make sure that we have clean air for  
7 all. And we zero out emissions from greenhouse gases.

8           We also are working very closely with the Public  
9 Utilities Commission that oversees the investor owned  
10 utilities, with the CAISO and the Governor's Office of  
11 Business and Economic Development. It really has to be a  
12 cross-agency report this year to do justice to the topic.  
13 And to make sure that we're getting all the best ideas into  
14 the hopper.

15           I just want to give a shout out to my advisor,  
16 Ben Wender, who has been stepping in to handle this. It's  
17 a hard job. There's a lot of wrangling of cats. I'm not  
18 going to name those cats, but there's so many. And then  
19 just ably stepping up, so just thank you, Ben, for that.

20           And I look forward to really working with Vice  
21 Chair Gunda's office with their deep expertise on  
22 reliability and sort of the energy system writ large. You  
23 know, having this collaboration, I think is just going to  
24 be really critical. And I look forward to actually  
25 learning a lot from the team and from the stakeholders who

1 are going to be engaging in this process. So that is all I  
2 want to say.

3 CHAIR HOCHSCHILD: Okay, Commissioner Gallardo,  
4 any comments? Yeah.

5 COMMISSIONER GALLARDO: I'm really excited about  
6 this IEPR, Commissioner Monahan and especially with looking  
7 forward to the creative name you come up with here. And I  
8 also want to commend Ben. I had a briefing and he did a  
9 wonderful job going through it. And, you know, wherever I  
10 can be helpful especially on the equity, embedding equity  
11 into the process I'll be happy to help. I, of course, will  
12 mind all the rules. Just wanted to let you know that.

13

14 CHAIR HOCHSCHILD: Yeah, I just want to second  
15 all that. I'm thrilled you're leaving the IEPR. Thank you  
16 for stepping up. And I love the focus.

17 You know, I really feel we're largely there with  
18 the big goals that we're trying to achieve on zero emission  
19 vehicles, and clean energy, and storage and all the rest,  
20 electric heat pumps. But the real focus is on how do we  
21 accelerate deployment. And it's a very challenging fraught  
22 issue, because in part what's happening is that vegetation  
23 management and wildfire mitigation have sucked huge amounts  
24 of utilities, staff time, and resources to deal with.

25 And then on top of that, more severe weather

1 including the flooding and high winds we've had, also take  
2 staff time and resources to respond to those. These are  
3 climate-driven events, but they are making it harder for us  
4 to do the climate solutions we need to so this is the right  
5 topic. I actually am kind of glad not to be dealing with a  
6 whole bunch of other big new goals. I think we're where we  
7 need to actually focus on implementation.

8           And so very timely and very grateful that you're  
9 willing to step up. And I look forward to supporting you  
10 and engaging and some solutions we can come up with  
11 together. So with that, I would welcome a motion on Item 7  
12 from Commissioner Monahan.

13           COMMISSIONER MONAHAN: I move to approve Item 7.

14

15           CHAIR HOCHSCHILD: Commissioner Gallardo, would  
16 you be willing to second?

17           COMMISSIONER GALLARDO: I second.

18           CHAIR HOCHSCHILD: All in favor say aye.

19           Commissioner Monahan.

20           COMMISSIONER MONAHAN: Aye.

21           CHAIR HOCHSCHILD: Commissioner Gallardo.

22           COMMISSIONER GALLARDO: Aye.

23           CHAIR HOCHSCHILD: And I vote aye as well.

24           We'll turn now to Item 9, which is Small Power  
25 Plant Exemption for STACK Trade Zone Park. Eric Knight.

1 MR. KNIGHT: Good morning, Chair and  
2 Commissioners. My name is Eric Knight. I'm the Manager of  
3 the Siting and Environmental Office in the Siting,  
4 Transmission, and Environmental Protection Division  
5 otherwise known as STEP. I am here with my colleague Kari  
6 Anderson from the Chief Counsel's Office and here to my  
7 left, on behalf of the Executive Director to recommend that  
8 the Commission certify the Final Environmental Impact  
9 Report and adapt a Mitigation Monitoring and Reporting  
10 Program for the STACK Trade Zone Park Project. Adopt  
11 findings that establish that the application for a Small  
12 Power Plant Exemption filed by STACK Infrastructure meets  
13 the requirements for approval. And third, request the  
14 Commission issue an order granting the requested exemption.  
15 Next slide, please.

16 In a series of filings between December 10, 2021,  
17 and April 11, 2022, STACK Infrastructure filed a small  
18 power plant exemption application for the STACK Trade Zone  
19 Park's 91 megawatt backup generating facility.

20 As you know, the CEC has the exclusive authority  
21 to certify all thermal power plants 50 megawatts and  
22 greater and related facilities proposed for construction  
23 and operation in California. Pursuant to Public Resources  
24 Code section 25541, the CEC may exempt thermal power plants  
25 that do not exceed 100 megawatts from the CEC's

1 jurisdiction, if the CEC finds that "no substantial adverse  
2 impact on the environment or energy resources."

3           If an exemption is granted, an applicant must  
4 secure the appropriate licenses and permits from relevant  
5 local, state, and federal agencies to construct and operate  
6 the project. For STACK Trade Zone Park, the City of San  
7 Jose, the California Public Utilities Commission, and the  
8 Bay Area Air Quality Management District, as responsible  
9 agencies under the California Environmental Quality Act or  
10 CEQA for short, will rely on the Environmental Impact  
11 Report prepared by the CEC for their discretionary  
12 decisions to issue permits. Staff has coordinated its  
13 review of the project with all relevant agencies. Next  
14 slide, please.

15           The STACK Trade Zone Park would include one,  
16 four-story advance manufacturing building with a 1 MW  
17 backup generator and two, four-story data center buildings  
18 with a 90 MW backup generating facility. The backup  
19 generators would provide emergency electrical power to the  
20 data center and manufacturing building in the event of a  
21 utility power outage or other service disruption. The  
22 generators will be equipped with selective catalytic  
23 reduction equipment and diesel particulate filters to  
24 comply with the U.S. Environmental Protection Agency and  
25 California Air Resources Board's strictest Tier 4 emissions

1 standards.

2           The project is proposed on two parcels of land  
3 zoned Industrial in the City of San Jose. Next slide,  
4 please.

5           By statute, the CEC is the lead agency under CEQA  
6 for a small power plant exemption or SPPE for short. In  
7 accordance with CEQA, staff analyzed the environmental  
8 effects of the entirety of the project, not just those of  
9 the backup generating facility.

10           Staff circulated a Notice of Preparation of an  
11 Environmental Impact Report or EIR, for the project to the  
12 public and public agencies from June 7, 2022, to July 6,  
13 2022. Staff received comment letters from the Department  
14 of Toxic Substances Control, Native American Heritage  
15 Commission, Santa Clara Valley Water District, and a member  
16 of the public.

17           On November 1, 2022 staff hosted a public scoping  
18 meeting to hear comments on the scope and content of the  
19 EIR. While no agencies attended this meeting, a few  
20 members of the public attended. Staff considered all  
21 comments received in our preparation of the Draft EIR,  
22 which was published on January 27, 2023. And made  
23 available for public comment for 45 days, as required by  
24 CEQA.

25           The public comment period ended on March 13,

1 2023. Comments letters were received from the applicant,  
2 the City of San Jose, the California Department of  
3 Transportation, the Bay Area Air Quality Management  
4 District, and the Santa Clara Valley Water District.

5           The Final EIR was filed in the proceeding's  
6 docket on March 30, 2023, and staff emailed a copy of it  
7 directly to each entity that commented on the Draft EIR.  
8 The Final EIR contains staff's responses to the comments  
9 received, and where appropriate, revisions to the content  
10 of the EIR. All revisions made to the EIR clarify or  
11 amplify the existing analysis and information or make other  
12 insignificant modifications. No significant new  
13 information has been added that would require recirculation  
14 of the EIR.

15           The Final EIR demonstrates that the project will  
16 not have a substantial adverse impact on the environment or  
17 energy resources with the implementation of the mitigation  
18 measures contained in the EIR. In addition, the EIR  
19 demonstrates that the project's electrical generating  
20 capacity at 91 MW would not exceed 100 MW.

21           On March 30, 2023 staff filed to the SPPE  
22 proceeding docket the Executive Director's recommendation  
23 made pursuant to California Code of Regulations, Title 20,  
24 section 1942, that the project meets the exemption findings  
25 under Public Resources Code section 25541. Also on March

1 30th, staff filed a letter from the City of San Jose  
2 stating their concurrence with the mitigation measures in  
3 the EIR and their agreement to enforce them.

4 The Final EIR, the Executive Director's  
5 recommendation, and the proposed adoption order were  
6 included as backup materials for today's business meeting.  
7 In addition, today's business meeting agenda was filed in  
8 the proceeding's docket. Next slide, please.

9 In conclusion, staff recommends approval of  
10 proposed order #23-0412-9: 1. Certifying that the Final  
11 Environmental Impact Report was prepared in compliance with  
12 the California Environmental Quality Act. 2. Adopting  
13 the Mitigation Monitoring and Reporting Program. 3.

14 Finding that the requirements of Public Resources Code  
15 section 25541 are met. And finally, granting the small  
16 power plant exemption for the STACK Trade Zone Park.

17 In conclusion, I'd like to acknowledge and thank  
18 staff Project Manager Lisa Worrall, Project Assistant  
19 Marichka Haws, Staff Attorneys Kari Anderson and Jared  
20 Babula, and the entire STEP technical team, for all their  
21 hard work on the EIR and throughout the SPPE proceeding.

22 I'd also like to thank Scott Galati, the  
23 Applicant's representative, and Tina Garg with the City of  
24 San Jose's Planning, Building and Code Enforcement for  
25 their cooperation and responsiveness to staff's questions



1 and need for information.

2 Staff is available to answer any questions you  
3 may have. In addition, Scott Galati is here in the room  
4 and available to answer any project-related questions. And  
5 I believe Tina Garg is on the line with the City of San  
6 Jose. Thank you.

7 CHAIR HOCHSCHILD: Great, thank you so much,  
8 Eric.

9 We'll go to public comment on Item 9.

10 MS. BADIE: Hello, this is Mona Badie, the Public  
11 Advisor. If you'd like to make a comment on this item, the  
12 STACK SPPE, and you're in the room please sign up using the  
13 QR code at the Public Advisor table. And if you are on  
14 Zoom, we ask that you use the raise hand feature to notify  
15 us you'd like to make a comment. If you're on the phone,  
16 please press \*9 to notify us.

17 And while we're waiting for the Zoom, we do have  
18 Scott Galati in the room. He would like to make a comment.  
19 Scott, please approach the podium, spell your name for the  
20 record, and you may begin.

21 MR. GALATI: Scott Galati, S-C-O-T-T, Galati, G-  
22 A-L-A-T-I. I'm proud to represent STACK Infrastructure.  
23 Also on Zoom, probably making a public comment today is  
24 Miles Kersten, the Director of Development with STACK  
25 Infrastructure.

1           Chair and Commission, thank you very much for  
2 having us at this meeting. And Commissioner Gallardo,  
3 congratulations and welcome. Nice to see you as a  
4 Commissioner, I hope to see you in this same situation  
5 quite often.

6           I'd like to just remind everybody that data  
7 centers are important. I'd also like to let you know that  
8 the project here that has an advanced manufacturing  
9 facility, it's a kind of thing that could be an incubator  
10 for some of the money that you have sent for people trying  
11 to start a business. And that was one of the reasons that  
12 this was built.

13           The project would be using renewable diesel for  
14 all of its maintenance and testing. And provided that  
15 there are no supply chain disruptions would be using it  
16 during the outages of an emergency as well. In addition,  
17 the project is committed to using 100 percent renewable  
18 energy, either through a contract with San Jose Clean  
19 Energy, or through its power purchases through PG&E or some  
20 other program. And I think that that's an important piece  
21 to remind you as well, is sometimes large users such as  
22 this cause additional renewable energy to be built in  
23 California. And if we can strengthen the transmission  
24 system to continue to deliver that to areas like the Bay  
25 Area, I think you'll only see much greater renewable

1 penetration.

2           We thank you very much for staff. I'd like to  
3 point out something you hear me often complain, so I'm  
4 going to try something new. This project went as planned.  
5 We made some changes and that caused delays, but I would  
6 like to really thank Eric Knight and Lisa Worrell. They  
7 published the Draft EIR on the day they said they would.  
8 They published the Final EIR on the day they said they  
9 would. And I think that was very, very helpful and it  
10 helps us as an Applicant to have some certainty.

11           And lastly, I'd like to thank the Executive  
12 Director and Elizabeth Huber, who put together a  
13 recommendation. This is the first time that we've come to  
14 you for a recommendation under the new regulations. It's  
15 working. It was helpful. I think that there is no loss of  
16 environmental protection, no loss of evaluation and  
17 thoroughness. And we would ask you to grant this small  
18 power plant exemption. Thank you.

19           CHAIR HOCHSCHILD: Thank you.

20           Any other public comment, Mona?

21           MS. BADIE: Thank you. No, no other comment in  
22 the room or on Zoom. So back to you, Chair.

23           CHAIR HOCHSCHILD: Okay. Thank you.

24           Let's go to Commissioner discussion starting with  
25 Commissioner Gallardo.

1                   COMMISSIONER GALLARDO: So thank you, Scott, for  
2 the recognition. I really appreciate that. And I also  
3 wanted to acknowledge that this is the first small  
4 powerplant exemption application that, you know, the  
5 Commission's voting on in this new format without the  
6 committees. And I wanted to thank the staff, Chief  
7 Counsel's Office, and our Executive Office for helping us  
8 make that smooth transition. And I also think that it was  
9 good. It was, it went really well.

10                   Eric, you did a great presentation. I really  
11 appreciate how thorough it was. And I just wanted to  
12 highlight a couple of things. The Final Environmental  
13 Impact Report prepared by staff and under the direction of  
14 our Executive Director provide substantial evidence that  
15 this proposed STACK Trade Zone Park meets the criteria for  
16 an SPPE, and underwent all the required public review and  
17 comment periods, including the public scoping meeting, 45-  
18 day comment period, staff's considered all comments that  
19 were received, and included appropriate responses. And the  
20 information about the SPPE was also disseminated in  
21 multiple languages, languages spoken in the area where the  
22 project is located. So really appreciate that.

23                   And I also wanted to highlight that the backup  
24 generators will be Tier 4, which will meet the highest  
25 emission standards. So that's good for those types of

1 engines.

2           And with that, I do approve -- or I suggest  
3 approval of this item.

4           CHAIR HOCHSCHILD: Commissioner Monahan?

5           COMMISSIONER MONAHAN: Well, just really briefly.  
6 When I got the briefing something that really stood out to  
7 me was that there's been a shift in in the mitigation  
8 measures for these SPPE projects. It started with Tier 2,  
9 is that right Eric? And now it's Tier 4. That the  
10 facility is promising to procure 100 percent clean energy.  
11 They're making improvements to roads to make them more bike  
12 friendly and pedestrian friendly. And the engines  
13 themselves are using renewable diesel. So I do think, you  
14 know, these SPPEs have been at least for me kind of  
15 challenging that we're seeing a proliferation of diesel  
16 generators, when we were moving as a state to a 100 percent  
17 clean energy system.

18           But I want to emphasize that there has been  
19 progress in terms of the kind of more mitigation measures  
20 that help reduce the pollution from pollution impacts,  
21 which are mitigated and meet our requirements. And are  
22 making communities, trying to make communities better  
23 places to live. So I do think this new process, I'm very  
24 hopeful that it's going to cut down time and red tape. But  
25 it's going to preserve the environmental and energy

1 benefits of this approval process.

2 CHAIR HOCHSCHILD: Great. Thank you.

3 Well, I'd welcome a motion on this item from  
4 Commissioner Gallardo.

5 COMMISSIONER GALLARDO: I move to approve this  
6 item.

7 CHAIR HOCHSCHILD: Is there a second from  
8 Commissioner Monahan?

9 COMMISSIONER MONAHAN: I second.

10 CHAIR HOCHSCHILD: All in favor say aye.  
11 Commissioner Gallardo.

12 COMMISSIONER GALLARDO: Aye.

13 CHAIR HOCHSCHILD: Commissioner Monahan?

14 COMMISSIONER MONAHAN: Aye.

15 CHAIR HOCHSCHILD: And I vote aye as well. Item 9  
16 passes unanimously.

17 We'll turn now to Item 11, which is Residential  
18 Solar Permit Reporting And I welcome Geoff Dodson to  
19 report.

20

21 MR. DODSON: Good morning Chair and  
22 Commissioners. I'm Geoff Dodson, Supervisor in the Clean  
23 Energy and Technology Branch of the Reliability, Renewable  
24 Energy, and Decarbonization Incentives Division, also known  
25 as REDI. Today, staff is recommending adoption of

1 guidelines for Residential Solar Permit Reporting, pursuant  
2 to Senate Bill 379.

3           Our guidelines, in conjunction with SB 379, help  
4 expand access to renewable energy and accelerate adoption  
5 of residential clean energy installations, including solar  
6 and battery storage. This is done by supporting efficient  
7 permitting practices at local government jurisdictions  
8 through instantaneous plan review, promoting immediate  
9 permit approval.

10           Supporting the adoption of solar and storage  
11 projects reduces California's reliance on fossil fuels,  
12 thereby lowering greenhouse gas emissions, and helping the  
13 state achieve its clean energy goals. Non-hardware costs  
14 such as permitting can add substantial barriers both  
15 financially and timewise to the development and  
16 installation of clean energy projects. Reducing or  
17 eliminating these barriers is critical to both improving  
18 equity and access to all residents, and accelerating the  
19 adoption of solar and storage projects.

20           Before I cover the guidelines, it's helpful to  
21 provide a quick overview of SB 379. The bill was signed  
22 into law in mid-September of 2022. It requires most  
23 California cities and counties to implement an online,  
24 automated permitting platform such as SolarAPP+ that  
25 instantly verifies code compliance and enables immediate

1 permit approval for solar or storage paired with solar.

2           Jurisdictions are required to comply this fall or  
3 late next year based on population size. Some cities and  
4 counties of smaller population sizes are exempt from the  
5 bill, including the annual reporting requirement.

6           As part of the bill, jurisdictions are required  
7 to report to the CEC annually on the number of permits  
8 issued and other relevant characteristics. The CEC is  
9 required to adopt these guidelines to facilitate this  
10 annual reporting.

11           We developed and published draft guidelines on  
12 December 6, 2022 followed by a public workshop on December  
13 8th to solicit feedback. We then held a 30-day comment  
14 period from December 8th to January 9, 2023. Revised  
15 guidelines incorporating feedback were published on April  
16 3rd and are presented before you today for your  
17 consideration.

18           The guidelines address the CEC's role in  
19 facilitating annual reporting on "the number of permits  
20 issued and the relevant characteristics of those systems."  
21 They also outline the details and procedure for these  
22 annual reporting requirements.

23           To receive the data in a uniform format and make  
24 it easier on our stakeholders, we are utilizing an online  
25 data portal accessible through our SB 379 webpage.



1           Jurisdictions will submit data covering a full  
2 calendar year, following the reporting period. And shall  
3 submit reports annually until 2034, as prescribed in the  
4 bill.

5           Here we have a summary of the data we will  
6 collect, which includes a few basics like jurisdiction  
7 name, reporting year, and latest estimated population.

8           We also collect the total number of permits  
9 issued, separated by permits for solar or those issued for  
10 storage paired with solar.

11           Within each of these last two categories, we also  
12 collect the portion of that total issued using an SB 379-  
13 compliant software such as SolarAPP+.

14           This data collection process is intended to be  
15 quick and non-burdensome for jurisdictions, while still  
16 allowing us to understand trends and how the online  
17 platforms will ultimately help streamline the solar  
18 permitting process.

19           These reporting requirements apply to all non-  
20 exempt jurisdictions, meaning cities above 5,000 in  
21 population and counties above 150,000 in population.

22           I'd like to thank staff from our division, the  
23 Chief Counsel's Office, and advisors from Commissioner  
24 Gallardo's office who have all worked hard to prepare the  
25 guidelines that are before you today. I would also like to

1 give thanks and recognition to staff from our IT office in  
2 developing our online data portal that enables easy and  
3 burden-free reporting for jurisdictions.

4           And finally, I'd like to recognize and thank our  
5 external stakeholders who participated in this process.  
6 This includes members with the National Renewable Energy  
7 Laboratory, also known as NREL, involved with SolarAPP+.  
8 And individuals at the California Solar and Storage  
9 Association who offered support and helped spread awareness  
10 of the California Automated Permit Processing Program,  
11 known as CalAPP, which offers grants to cities and counties  
12 and can be used to achieve compliance with SB 379.

13           Staff is recommending that the CEC approve the  
14 Residential Solar Permit Reporting guidelines. Staff is  
15 also recommending that the CEC approve the determination  
16 that adoption of these guidelines is exempt from CEQA.

17           And that concludes my presentation, and I am  
18 available to answer any questions you may have.

19           CHAIR HOCHSCHILD: Thanks so much, Geoff.

20           We will go to public comment.

21           MS. BADIE: Hello, this is Mona Badie, the Public  
22 Advisor. Now is the time the public -- or the Energy  
23 Commission will accept public comment for Item 11.

24           If you are in the room and would like to make a  
25 comment, we ask that you use the QR code or visit the

1 Public Advisor table in the back of the room. If you are  
2 on Zoom, please use the raise hand feature to notify us  
3 you'd like to comment. And if you're on the phone, please  
4 press \*9 to notify us you'd like to make a comment.

5 We'll just give that a minute. Okay, not seeing  
6 any public comment for this item back to you, Chair.

7 CHAIR HOCHSCHILD: Okay, we'll go to Commissioner  
8 discussion starting with Commissioner Gallardo.

9 COMMISSIONER GALLARDO: Thank you. I'd really  
10 appreciate the presentation, Geoff, great job. And to the  
11 team that worked on this. It was enjoyable to partner with  
12 you on this.

13 So I think the theme for this business meeting  
14 has been removing barriers to more renewables. And  
15 permitting has been known to be a barrier. It is helpful,  
16 you know, it's valuable, we need it. And at the same time,  
17 you know, making it better is a good thing. So I think  
18 this will be really helpful. And so I'm supportive.

19 And I'm also excited about the possibilities of  
20 what we can do with the data that we start gathering from  
21 the reporting that's required. I don't think there's a  
22 sense yet of what we will do with that information other  
23 than its helping encourage these cities and counties to  
24 automate their permitting. But there, I think there is  
25 that possibility. So yeah.

1 CHAIR HOCHSCHILD: I had a question, were there  
2 any other comments?

3 I had a question for you, Geoff. Just stepping  
4 back a little bit and looking at the solar app, as it was  
5 envisioned. And can you share with us a little bit sort of  
6 the before and after picture, best case scenario, for what  
7 advantages this is offering the public and the state in  
8 terms of process improvement? What does somebody under the  
9 old regime prior to this, you know, have to go through to  
10 get the system permitted versus when this is all  
11 functioning properly, just kind of a big picture overview?

12 MR. DODSON: Yeah, that's a great question. So  
13 generally speaking, someone requesting a permit for a  
14 residential solar permit on the rooftop would have to go  
15 through their local jurisdiction. So therefore, the  
16 process could vary up to I think, 480 different times,  
17 because that's how many jurisdictions are in California or  
18 roughly I think. So there's quite a number of different  
19 processes. And in some of those jurisdictions, it can take  
20 quite a while to get the permit back. So requesting the  
21 permit, and then getting it approved and having it ready so  
22 that you can then begin installation, in some jurisdictions  
23 could take quite a long length of time. Possibly weeks, or  
24 maybe even a month or more. And so kind of what this does,  
25 with the software does is help kind of streamline the

1 process across the board so that any jurisdiction utilizing  
2 this could essentially instantaneously turn around and  
3 permit.

4 So in the before time, while some jurisdictions  
5 may have already been fairly quick at this, it was not the  
6 case everywhere. And so this helps streamline it and  
7 across the board in California.

8 CHAIR HOCHSCHILD: Yeah, great. I just wanted to  
9 highlight you know, this is an example of what I would call  
10 process innovation. Okay, we do a lot around technology  
11 innovation. But the process innovation is just as  
12 important and sometimes even more important. Because you  
13 know, the next little benefit you get of the efficiency  
14 upgrade on a PV panels may not be as valuable as like  
15 cutting off but can be in some cases several months of wait  
16 time for the permit to get prepped. So I just want to  
17 highlight the value of that. And I just really wanted to  
18 lift up your work, Elizabeth, and all the other folks on  
19 the team that have been working on it and delighted to  
20 support that.

21 So with that I would welcome a motion on this  
22 Item 11 by Commissioner Gallardo.

23 COMMISSIONER GALLARDO: I move to approve Item  
24 11.

25 CHAIR HOCHSCHILD: Commissioner Monahan, you give

1 a second?

2 COMMISSIONER MONAHAN: I second.

3 CHAIR HOCHSCHILD: Okay. And all in favor say  
4 aye.

5 Commissioner Gallardo.

6 COMMISSIONER GALLARDO: Aye.

7 CHAIR HOCHSCHILD: Commissioner Monahan?

8 COMMISSIONER MONAHAN: Aye.

9 CHAIR HOCHSCHILD: And I vote aye as well. Item  
10 11 passes unanimously. Thank you, Geoffrey.

11 We'll turn now to Item 12 which is CALSTART,  
12 Chris Jenks.

13 MR. JENKS: Good Morning Chair and Commissioners.  
14 My name is Chris Jenks with the Fuels and Transportation  
15 Division.

16 Staff is seeking approval for the block grant  
17 with CALSTART, Inc. in Pasadena, California, which is being  
18 proposed for funding under the Zero-Emission Vehicle  
19 Battery Manufacturing Block Grant Solicitation. Next  
20 slide, please.

21 On August 9th, 2022 the CEC released a Grant  
22 Funding Opportunity entitled "Zero-Emission Vehicle Battery  
23 Manufacturing Block Grant." This competitive grant  
24 solicitation was to seek a block grant implementer to  
25 administer up to \$25 million in grant funds for various ZEV

1 battery manufacturing projects throughout California. This  
2 agreement is funded from the California Budget Act of 2022.  
3 Next slide, please.

4 Based on the December 2022 Notice of Proposed  
5 Awards, we are recommending today's block grant award with  
6 CALSTART under this solicitation for up to \$25 million.

7 If approved for funding, CALSTART's project will  
8 create job and economic benefits for California through the  
9 increased ZEV battery manufacturing that their sub-grants  
10 will fund.

11 This increased manufacturing will also eventually  
12 contribute to the reduction of carbon dioxide emissions  
13 over a span of time that may include the life of the  
14 manufacturing companies funded and the additional ZEV  
15 batteries manufactured under the sub-grants and thereafter.

16 In addition, this block grant will attract and  
17 retain ZEV battery manufacturing in California and,  
18 therefore, contribute to California's zero-emission  
19 transportation goals. Next slide, please.

20 Under this agreement, CALSTART will work with  
21 their key subcontractors: California Clean Energy Fund,  
22 also known as New Energy Nexus; YUNEV, LLC; and Lawrence  
23 Berkeley National Laboratory, with feedback from potential  
24 grant recipients and oversight from the CEC. Together,  
25 these entities will create and advertise a sub-solicitation

1 and award, and administer and fund the resulting ZEV  
2 battery manufacturing sub-grants.

3 This agreement is for up to \$25 million, of which  
4 up to \$22.5 million will go toward battery manufacturing  
5 sub-grants. Depending on the structure of the sub-  
6 solicitation and sub-grants, additional match funding may  
7 come from the sub-recipients. Last slide, please.

8 Staff is seeking your approval for this  
9 agreement, as well as adoption of staff findings that this  
10 project is exempt from CEQA.

11 Before the manufacturing sub-grant projects  
12 receive any funding under this block grant, they will be  
13 presented at one or more future CEC business meetings for  
14 approval and adoption of their CEQA findings.

15 We have Orville Thomas from CALSTART in  
16 attendance via Zoom who will be happy to answer any  
17 questions.

18 That is the end of my presentation, and I am  
19 happy to answer any questions you may have. Thank you.

20 CHAIR HOCHSCHILD: Thank you.

21 We'll go to public comment on item 12.

22 MS. BADIE: Hello, this is Mona Badie, the Public  
23 Advisor. We will now take public comment for Item 12. If  
24 you are in the room, you can notify us by visiting the  
25 Public Advisor table and using the QR code. If you are on



1 Zoom, please use the raise hand feature to notify us if  
2 you'd like to make a comment for this item. And if you're  
3 on the phone, we'd like you to press \*9 to notify us you'd  
4 like to make a comment.

5 And while we wait for the Zoom we do have Orville  
6 Thomas in the room who would like to make a comment? Maybe  
7 not. Oh, wait. Yes, thank you. if you could please spell  
8 your name for their court reporter before making a comment  
9 that would be great. Thank you.

10 MR. THOMAS: Thank you, Orville Thomas, O-R-V-I-  
11 L-L-E, last name Thomas, T-H-O-M-A-S, State Policy Director  
12 for CALSTART.

13 I want to thank Chris for his time with this  
14 project. And want to thank the Chair of the Energy  
15 Commission for the ability to administer this grant along  
16 with our wonderful partners. We look forward to our  
17 continued partnership along with other projects with the  
18 Energy Commission such as energizing Communities in Charge  
19 to ensure that we build robust zero emission vehicle  
20 infrastructure network and supply chain that allows for  
21 equity and allows for geographic diversity in California.  
22 Thank you.

23 MS. BADIE: Thank you.

24 And we do not have any other commenters, so back  
25 to you, Chair.

1 CHAIR HOCHSCHILD: Okay. Let's turn to  
2 Commissioner discussion, starting with Commissioner  
3 Monahan.

4 COMMISSIONER MONAHAN: Well, I want to say that I  
5 love how we are supporting manufacturing in California  
6 through all these different -- whether it's early stage, or  
7 whether we're talking about a deployment stage like these  
8 grants are.

9 And Chair, I want to recognize your leadership in  
10 terms of identifying some of the battery ecosystem as a  
11 place where we may want to outsource. And get a set of  
12 implementers, administrators who can really thoughtfully  
13 help learn from what we have done in the early stage.  
14 Which New Energy Nexus has been really a leader on that  
15 with our EPIC program. And CALSTART with its deep  
16 expertise on administering various programs for the state,  
17 including the Air Resources Board HFIP program to fund big  
18 trucks, and our EnergIIZE Program to fund those of  
19 infrastructure for those trucks. So CALSTART has a lot of  
20 experience in this space, and I think the team that's been  
21 put together is really strong.

22 So I'm just looking forward to seeing what grants  
23 emerge from this new program. And just thank that the team  
24 at the Fuels and Transportation Division including Chris  
25 and others too, that are really facilely thinking about how

1 to administer these programs with the most -- the greatest  
2 impact.

3 CHAIR HOCHSCHILD: I just want to add my  
4 congratulations as well to CALSTART and to the FTD team for  
5 putting this together. A few thoughts I wanted to share.

6 You know, the Lithium Valley project, basically  
7 this whole project of trying to elevate lithium development  
8 sustainable development in California is a huge priority  
9 for the state. For the Energy Commission, we've been  
10 working on this for a number of years. The Governor was  
11 there two weeks ago. And there is the very real  
12 possibility of co-located battery manufacturing on site.

13 And so just to paint the picture a little bit.  
14 Right now, almost all the lithium we're consuming in the  
15 State of California for our cell phones, our batteries, our  
16 cars, or our laptops and so on is imported principally from  
17 four countries: Chile and Argentina, where it's evaporation  
18 ponds; China and Australia where it's hardrock mining. We  
19 have a chance to really flip the script and produce this  
20 domestically and sustainably.

21 Your impact when you're producing 20,000 tons of  
22 lithium: you impact 30,000 acres if you bring it from  
23 South America evaporation ponds. You impact 3,000 acres if  
24 you're doing hardrock mining. Then you impact 30 acres if  
25 you do it through California, geothermal brine, so a very

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1 light footprint. And typically what happens is you produce  
2 the lithium you spend a lot of energy than evaporating the  
3 fluid out of it and turn it into a solid. Put on truck and  
4 send it to a battery factory where the first thing they do  
5 is turn it back into fluid. And so the idea of actually  
6 just pipe the fluid directly to a battery-manufacturing  
7 facility presents very real process savings. And so that's  
8 something I definitely hope we can look at that in this  
9 program. To explore opportunities for Lithium Valley co-  
10 located battery manufacturing as part of the strategy.

11           And I'm just really excited to see battery  
12 manufacturing be focused on this way. There's a lot of  
13 things we heard earlier today, a lot of really cutting  
14 edge, new technologies. You know, Cuberg and others,  
15 Shenzhen, Coreshell, Sparkz and a number of others to be  
16 funded that are scaling up and getting to the point of  
17 looking for bigger facilities. And then this is a really  
18 nice next step to the early startup funding to develop the  
19 chemistry. So very excited to finally be approving this.  
20 I know it's been in motion for quite some time. So this is  
21 a great, great occasion to move this forward.

22           Any other comments? Unless there's other  
23 comments I'd welcome a motion on this from Commissioner  
24 Monahan.

25           COMMISSIONER MONAHAN: I move to approve Item 12.

1 CHAIR HOCHSCHILD: Is there a second from  
2 Commissioner Gallardo?

3 COMMISSIONER GALLARDO: I second.

4 CHAIR HOCHSCHILD: All in favor say aye.  
5 Commissioner Monahan.

6 COMMISSIONER MONAHAN: Aye.

7 CHAIR HOCHSCHILD: Commissioner Gallardo.

8 COMMISSIONER GALLARDO: Aye.

9 CHAIR HOCHSCHILD: And I vote aye as well. Item  
10 12 passes unanimously. Congratulations.

11 We'll turn now to Item 13. GC Green,  
12 Incorporated. And I welcome Tiffany Hoang to present.

13 MS. HOANG: Good afternoon, Commissioners and  
14 Chair. My name is Tiffany Hoang, staff in the Fuels and  
15 Transportation Division. And today I'll be providing  
16 background on a project to install EV chargers paired with  
17 energy storage for the Tule River Indian Tribe of the Tule  
18 River Reservation. Next slide, please.

19 In December of 2021, the CEC released a grant  
20 solicitation called Rural Electric Vehicle or REV, Charging  
21 under the CEC's Clean Transportation Program. The goal of  
22 this solicitation was to demonstrate replicable and  
23 scalable business and technology models for deployment of  
24 public EV charging infrastructure to maximize access and EV  
25 travel for rural residents.

1           In June of 2022, the CEC released the Notice of  
2 Proposed Awards, announcing GC Green, Incorporated -- a  
3 Woman, Native American, and Service-Disabled/Wounded  
4 Warrior Veteran Owned Business -- as a recommended awardee  
5 for a \$500,000 grant to build EV charging infrastructure  
6 for the Tule River Indian Tribe.

7           The goals of this project are to increase  
8 charging access and enable greater EV adoption, including  
9 EV fleet adoption by the tribe. To raise community  
10 awareness of EV benefits through outreach, engagement, and  
11 education to tribal residents and businesses. To promote  
12 clean energy jobs within and training for the tribe. And  
13 support tribal enterprises and economic development by  
14 encouraging EV travel and charging in the reservation.  
15 Next slide, please.

16           If approved for funding, this project will  
17 increase charging access and enable greater EV adoption and  
18 in turn reduce greenhouse gas emissions in a tribal,  
19 disadvantage, and low-income area that's between Fresno and  
20 Bakersfield. Incorporation of solar PV installation and  
21 battery energy storage will enhance tribal resiliency.

22           In addition, the project is also expected to  
23 provide EV related workforce training to young tribal  
24 members through an apprenticeship program. Next slide,  
25 please.

1 GC Green, Incorporated in partnership with the  
2 Tule River Indian Tribe proposes to install two 120kW DC  
3 fast chargers and one Level 2 charger at the Tule River  
4 Eagle Feather Trading Post #1. This site is an existing  
5 gas station that was started by Tule River's Indian  
6 reservation economic sector, which is northwest of the Tule  
7 River Reservation along SR-190 and just east of  
8 Porterville.

9 The chargers will be paired with a 66kW solar PV  
10 system and a 175kWh battery energy storage system to power  
11 the stations independent of the grid. This is expected to  
12 increase resiliency and lower overall operating costs.

13 GC Green will partner with Tule River's Economic  
14 Development Center and Native Star Foundation to launch a  
15 community-wide EV engagement program that celebrates the  
16 installation of these chargers and its potential for  
17 replication at other rural tribal locations. This program  
18 will include EV ride and drive pop-up events, tribal youth-  
19 based seminars on EVs and infrastructure, workforce  
20 development, and a grand opening event. Next slide.

21 Staff is seeking approval for this agreement and  
22 adoption of staff findings that this project is exempt from  
23 CEQA.

24 This brings me to the end of my presentation.  
25 Happy to answer any questions you all may have. Thank you.

1 Thank you. Let's go to public comment.

2 MS. BADIE: Hello, this is Mona Badie, the Public  
3 Advisor. The Energy Commission will now take public  
4 comment for Items 13, GC Incorporated. If you are in the  
5 room, you can visit the Public Advisor table and use the QR  
6 code to notify us if you'd like to make a comment. If you  
7 are on Zoom we ask that you use the raise hand feature to  
8 notify us if you'd like to comment. And if you're on the  
9 phone, please press \*9 to notify us you'd like to comment.

10 Okay, we do not have anyone signed up in the  
11 room. But we do have some folks on Zoom, so I will be  
12 calling names now. Elizabeth Perez, I'm going to unmute  
13 your line. Please unmute on your end and we ask that you  
14 limit your comments to two minutes. Elizabeth, your line  
15 is open.

16 MS. PEREZ: Hi, good afternoon everyone. Can you  
17 hear me, okay?

18 MS. BADIE: Yes.

19 MS. PEREZ: Well, thank you.

20 Yes, I just wanted to say as an enrolled tribal  
21 member of North Folk Rancheria Mono Indians (indiscernible  
22 - audio cuts in and out) and Native American service  
23 veteran, renewable energy development, EPC small business.  
24 (Indiscernible) how important it is that projects like this  
25 are reputable, and also create urgency, energy sovereignty



1 and job creation within clean energy. Projects like this  
2 also, economic resiliency, not only for tribes, but also  
3 for under-utilized small businesses like GC Green.

4 CHAIR HOCHSCHILD: Sorry, ma'am. We're having a  
5 little difficulty hearing you. If you can maybe speak a  
6 little bit slower and closer to the mic. Thank you.

7 MS. PEREZ: Oh, sure. Should I start over or  
8 just keep going?

9 CHAIR HOCHSCHILD: I think you can keep going,  
10 just yeah slow and close to the mic, thank you.

11 MS. PEREZ: (Overlapping) Sure. Yes, and I just  
12 wanted to also thank the CEC for this opportunity and  
13 making California a leader by growing the clean energy  
14 projects within underserved communities and also including  
15 underutilized small businesses. And workforce as part of  
16 the solution to combat climate change, and continuing to  
17 build the clean energy economy.

18 I also wanted to thank Tule River, and my team at  
19 GC Green for making this project start a success so far.  
20 And it's been an all hands on deck group effort and  
21 experience to get the project to where it is today. And  
22 just again thank you for this opportunity. And I believe  
23 my team might be on the phone to answer any questions as I  
24 am as well.

25 MS. BADIE: Thank you.

1           We have another raised hand, San Jose Business  
2 Center. I'm going to open your line. If you could please  
3 state your name and spell your name for the court reporter?  
4 Oh, that hand went down so we will now go to Ivette.  
5 Ivette, if you can please -- I'm going to open your line,  
6 please state and spell your name for the record. And you  
7 may make your comment.

8           MS. CROSSER: Hello, everyone. My name is  
9 Ivette Crosser. My first name is I like Ida, V-E two Ts  
10 and another E. I am a Representative of the Tule River  
11 Economic Development Corporation, who has been working long  
12 and hard with GC Green, and everyone there at GC Green to  
13 successfully get this grant and moving forward on this  
14 great project here on our property. We look forward to not  
15 only the EV chargers, but everything else that it will  
16 bring to our facility. And to everyone who comes to our  
17 facility and uses us as a launching pad for our national  
18 monuments, which we're at the foothills of a lot of  
19 national monuments.

20           But we also see this as a way to not only have --  
21 you know, bring prosperity and economic growth to our  
22 economic development, but also to possibly branch this out  
23 to other locations that the tribe has invested in. And to  
24 show other tribes how well this works in conjunction with  
25 GC Green and companies similar to Ms. Perez's company,

1 which has been a joy to work with.

2 So we just wanted to thank everyone for putting  
3 the faith into GC Green and to Tule River Economic  
4 Development and the Tule River Tribe in going forward with  
5 this project. And helping everyone go into the future with  
6 clean energy. So thank you very much.

7 COURT REPORTER: Ivette, this is the Court  
8 Reporter. Can you spell your last name as well, please?  
9 Thanks.

10 MS. CROSSER: Yes, sir. It is C like Cat R-O two  
11 SSs like Sam E-R.

12 COURT REPORTER: Thank you.

13 MS. BADIE: Thank you.

14 We also have Rick Halperin. I'm going to open  
15 your line, Rick, and please limit your comments to two  
16 minutes. Rick, you might need to unmute on your end to  
17 make your comment.

18 MR. HALPERIN: Thank you. Can you hear me now?

19 MS. BADIE: Yes.

20 MR. HALPERIN: Yes. Did you need me to spell my  
21 last name for the court reporter?

22 MS. BADIE: Yes, please.

23 MR. HALPERIN: It's H-A-L-P-E-R-I-N. And I'd  
24 like to just reiterate some of the comments made by Liz and  
25 Ivette. We'd first of all like to acknowledge and express

1 our gratitude to the CEC for awarding this grant to GC  
2 Green on behalf of the site host, the Tule River Economic  
3 Development Corporation.

4 GC Green was the only small minority native owned  
5 and disabled veteran company that was an awardee of this  
6 grant. This grant continues GC Green's 13-year  
7 relationship with the CEC on a variety of projects  
8 including EV installation, renewable energy, resiliency,  
9 and energy efficiency programs, with a specific focus on  
10 underserved and disadvantaged communities.

11 We'd also like to thank Tiffany for her support  
12 on this grant. She has been extremely helpful and  
13 accommodating. As Tiffany described this is a project,  
14 which is supportive to the grant objectives of the CEC by  
15 providing EV infrastructure on an important rural corridor.  
16 It will help with the adoption of EV vehicles by Tule River  
17 tribal members and to the surrounding rural communities.

18 The project is important to the economic  
19 objectives of the Tule River Economic Development  
20 Corporation and the C Store (phonetic) where the EV  
21 chargers will be installed. It is also important as a  
22 replicable project for surrounding tribes, especially many  
23 of those surrounding tribes that are also in high fire  
24 threat areas. It was unique amongst grant applicants that  
25 it was meant to demonstrate a business model and design

1 approach, as well as demonstrate the economic and  
2 resiliency and sustainability benefits of including solar  
3 and battery storage as part of this project. Thank you.

4 MS. BADIE: Thank you.

5 That concludes public comment for this item.  
6 Back to you, Chair.

7 CHAIR HOCHSCHILD: Okay, we'll go to Commissioner  
8 discussion starting with Commissioner Monahan.

9 COMMISSIONER MONAHAN: Well, first I want to  
10 acknowledge Tiffany, who is the leader of both of the SB  
11 1000 reports that Fuels and Transportation Division has  
12 done focusing on the equity impacts of our charger  
13 deployment. And one of the findings from the last report  
14 is that rural communities lack access and lack of equitable  
15 access. And so the REV solicitation was designed to  
16 target, to use the findings of our SB 1000 Report to target  
17 this. So it's particularly I think, interesting, Tiffany,  
18 that you're the cam for this or the leader for this  
19 particular grant.

20 And I think, you know, this is one that had been  
21 on Consent when we moved it from Consent to discussion,  
22 because it really builds on the tribal energy sovereignty  
23 resolution that we just signed. And I do think that the  
24 challenges that tribes face are unique in some ways. They  
25 tend to be rural. They tend to have greater power shut

1 offs, less energy, sort of access in general. And, you  
2 know, when you think about EV charging you think about it  
3 as sort of a coastal elite phenomenon. And we have to make  
4 it for everybody. We have to make sure everybody has  
5 access to lower fuel prices. That everybody has access to  
6 convenient refueling. And to the benefits of electric  
7 mobility, so this grant fits in that.

8           The tribe itself, as I learned from our Deputy  
9 Public Advisor has about 1,200 members. So it's kind of a  
10 medium to large size tribe. And I just think this  
11 particular investment is interesting from all these  
12 different angles. It's not just investing in access for  
13 tribes to zero emission vehicle refueling infrastructure,  
14 but it's also being led by a consultant who was a tribal  
15 member, a woman, a vet. I mean, there's just some really  
16 interesting aspects of this particular grant worth  
17 highlighting.

18           I think, you know as I said, it can be really  
19 hard to provide thoughtful access. The fact that this one  
20 is integrating battery storage and solar, I mean I think  
21 those are the types of projects that we have to think about  
22 when we talk about giving tribes access to that  
23 infrastructure. It has to be paired with a recognition  
24 that the energy needs, that the energy system is generally  
25 stressed and we have to accommodate that. So that's all I

1 wanted to say.

2 I also want to say, actually I think it was Liz,  
3 I didn't know if I heard her name right, Liz Green who's  
4 the head of CG Green, at some point I'd love to talk with  
5 you and learn more about your business. And just I think  
6 our Deputy Public Advisor would as well.

7 CHAIR HOCHSCHILD: Commissioner Gallardo?

8 COMMISSIONER GALLARDO: Yeah, I'm really excited  
9 about this one. And I'm glad that it was pulled off  
10 Consent and moved into a discussion item. So I have met  
11 Liz, and she's participated in a prior tribal conference  
12 that we had. And is dynamic speaker, I always learn from  
13 her. So I highly recommend meeting Liz and she is She is  
14 wonderful.

15 And I also wanted to highlight that piece about,  
16 you know, Energy Commission has made a commitment to  
17 increase opportunities for not only disadvantaged and low-  
18 income communities, but also for small businesses and  
19 businesses owned by disabled veterans and others. So that,  
20 you know, this aligns really well with that commitment that  
21 we made back in 2015 to increase those opportunities for  
22 participation and investment. And so I'm excited about  
23 this one. And I'm really glad that we get to talk about it  
24 and see an example of how we're making smart investments  
25 and ones that are advancing are embedding equity commitment

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1 as well. So thank you for that.

2 And Tiffany, wonderful presentation.

3 CHAIR HOCHSCHILD: Yes, thank you. And great  
4 presentation, great project. I think what you'll find is,  
5 you know, if you build it they will come. The chargers  
6 actually invite more people to actually make the decision  
7 to go electric. So and especially important, as you  
8 pointed out, in more rural areas where people are typically  
9 driving longer distances than in urban communities.  
10 Especially important.

11 I was just curious, and I'm sorry if I'm missing  
12 it in the presentation, how many KW is the fast charger  
13 that's being put in?

14 MS. HOANG: 120.

15 CHAIR HOCHSCHILD: 120, okay great.

16 Well, I'm thrilled to support this and thank you  
17 for the staff and all the parties involved. And I welcome  
18 a motion on this from Commissioner Monahan.

19 COMMISSIONER MONAHAN: I move to approve this  
20 item.

21 CHAIR HOCHSCHILD: Is there a second from  
22 Commissioner Gallardo?

23 COMMISSIONER GALLARDO: I second.

24 CHAIR HOCHSCHILD: All in favor say aye.

25 Commissioner Monahan?



1 COMMISSIONER MONAHAN: Aye.

2 CHAIR HOCHSCHILD: Commissioner Gallardo?

3 COMMISSIONER GALLARDO: Aye.

4 CHAIR HOCHSCHILD: And I vote aye as well. So  
5 Item 13 passes unanimously.

6 We'll turn now to Item 15, which is the minutes  
7 of the February 28<sup>th</sup>, March 6, and March 14<sup>th</sup> business  
8 meetings.

9 Any public comment on that item?

10 MS. BADIE: Hello, this is Mona Badie, the Public  
11 Advisor. Now is the time to make any public comment for  
12 Item 15 on the agenda. And I'm not seeing anyone in the  
13 room in the queue. If you are on Zoom and you would like  
14 to comment on this item we ask that you raise your hand,  
15 and if you're on the phone press \*9.

16 We have one hand raised from San Jose Business  
17 Center again. I don't know if -- sorry, excuse me. So if  
18 you can unmute on your end and state your name and spell it  
19 for the court reporter. Make your comment, San Jose  
20 Business Center.

21 MR. MENDOZA: Hello. Good afternoon, yeah. My  
22 name is David Mendoza. Actually, I'm the Project Director  
23 for the Fresno Native American Center. And I apologize. I  
24 was just trying to make input on the previous item, on the  
25 EV (indiscernible).

1 CHAIR HOCHSCHILD: Yeah, that's fine, sir. Yeah,  
2 go ahead.

3 MR. MENDOZA: This is past life, I apologize.

4 CHAIR HOCHSCHILD: Go ahead, sir, if you'd like  
5 to comment on that.

6 MR. MENDOZA: Yes, if I may, yeah. Again, I'm  
7 David Mendoza. I'm the Project Director for the Fresno  
8 Native American Business Center. And you mentioned about  
9 Tule River and the regional impact. But also, this is a  
10 bigger model in that we work with the Bishop Career  
11 Development Center Owens Valley, and they serve tribes from  
12 Stockton all the way to San Luis Obispo. So this will also  
13 serve as a model statewide on possibilities and promoting  
14 EV chargers, solar, through a variety of tribes way beyond  
15 just Tule River. Tule River is very active, but there's a  
16 variety of other tribes similar to them that this model  
17 will serve tremendously. So I apologize for being late.  
18 But I just want to say that this is -- will have a larger  
19 impact in Indian country. Thank you.

20 CHAIR HOCHSCHILD: Thank you for those comments.

21 MS. BADIE: Thank you. That was the only comment  
22 for this item. Back to you, Chair.

23 CHAIR HOCHSCHILD: Okay. Commissioner Gallardo,  
24 would you be willing to move Item 15?

25 MS. BARRERA: Chair, for the record I just want

1 to clarify the record a little bit. That you're voting on  
2 the minutes for the February 28th, March 6, and March 14  
3 business meeting. And you're not voting on the March 2nd,  
4 because it's not before us.

5 CHAIR HOCHSCHILD: I read all this out, thank  
6 you.

7 Is there a motion on this?

8 COMMISSIONER GALLARDO: Yes. I move to approve  
9 Item 15.

10 CHAIR HOCHSCHILD: Thank you. Is there a second  
11 from Commissioner Monahan?

12 COMMISSIONER MONAHAN: I second.

13 CHAIR HOCHSCHILD: All in favor say aye.  
14 Commissioner Gallardo.

15 COMMISSIONER GALLARDO: Aye.

16 CHAIR HOCHSCHILD: Commissioner Monahan.

17 COMMISSIONER MONAHAN: Aye.

18 CHAIR HOCHSCHILD: I vote aye as well. Item 15  
19 passes unanimously.

20 We'll turn now to item 16, which is Lead  
21 Commissioner or Presiding Member Reports? If you would  
22 like to go ahead, Commissioner Monahan?

23 COMMISSIONER MONAHAN: Well, I don't think we've  
24 had a business meeting since we got back from Japan, or  
25 have we talked about the trade mission? I don't think so.

1 Well, so I'll just be really brief.

2           So our CCO Linda Barrera and I accompanied the  
3 Chair to Japan for a trade mission. I just want to spend  
4 just a -- I'm assuming the Chair will cover big pieces of  
5 it. But I just want to start by saying it was led by our  
6 Attorney Governor, Eleni Kounalakis and the Director of the  
7 Governor's Office of Business and Economic Development, Dee  
8 Dee Myers. And this was -- so it was great to be led by  
9 two powerhouse women. They were just gracious and fun, and  
10 welcoming and thoughtful. It was a packed trade mission.  
11 We didn't get much sleep, but it was really just inspiring  
12 to be part of that.

13           And one thing I'll say about these two women, so  
14 our AG is the first woman elected to that position when the  
15 Governor --

16           CHAIR HOCHSCHILD: She's an LG (indiscernible) --

17           COMMISSIONER MONAHAN: Or LG, sorry. Not AG, oh  
18 I said Attorney Governor, Lieutenant Governor, sorry,  
19 mixing things. She's the first, so when the Governor is  
20 out our Lieutenant Governor steps in and she is the  
21 Governor. And so that's really our first woman Governor.  
22 And Dee Dee Myers was the Press Secretary for Clinton, the  
23 first ever woman Press Secretary, Communications Director  
24 for a President. So just that was an inspirational piece  
25 just for me, as a woman in this space.

1           We got to meet with Toyota leadership, which was  
2 fascinating. We got to tour their zero emission vehicle  
3 manufacturing. We couldn't take any pictures, but it was  
4 great to see. We got to see. So they produce 20 Mirais,  
5 that's their fuel cell vehicles, per day for the global  
6 market. They also produce hundreds of battery electric  
7 vehicles per day. We got to see the Subaru Solterra. And  
8 it was really just fun to see these vehicles being produced  
9 and to talk with Toyota leadership about what they're  
10 thinking in the future of zero emission. And connect them  
11 potentially with our lithium extraction in the Salton Sea.  
12 And just really, you know, trying to engage Toyota as a  
13 partner in our move to zero pollution from transportation.

14           I got to visit the largest hydrogen production  
15 facility in Japan. It's called HYDROEDGE and it's part of  
16 the Iwatani family I would say. The facility is currently  
17 making hydrogen from natural gas, but they have a lot  
18 there. They're also invested in electrolyzers so producing  
19 it from clean electricity. And getting it from sources  
20 like Australia, which is currently producing hydrogen from  
21 lignite, basically brown coal. And it really highlighted  
22 sort of this opportunity with hydrogen to, you know,  
23 basically it can be produced from just about anything. So  
24 there's a lot of opportunity there, but making sure that  
25 it's a clean, full lifecycle production. I think that's an

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1 important part of our partnership with Japan.

2 So it's just an amazing experience, and I'm sure  
3 the Chair will expound more and perhaps our CCO as well.

4 There's been a lot of work in the last month  
5 around AB 8 reauthorization, and the Governor's budget for  
6 zero emission transportation. That work is going to  
7 continue. Hannon Rasool has just been doing an amazing job  
8 leading that. I did present at a Senate Budget  
9 Subcommittee Hearing, sort of, but after all the hard  
10 questions got asked of Hannon and our CARB colleague.

11 There's been a lot of work as you guys would  
12 guess, on the planning for the Integrated Energy Policy  
13 Report. And I won't go into that, but it's been fun and  
14 interesting and hard. And we're confident we'll come to  
15 something good at the end, but it's going to take a lot of  
16 work.

17 A number of site visits, just want to emphasize a  
18 few of the fun ones that I did. So the first ever public  
19 DC fast charging for trucks at a truck stop. And it was  
20 right on the border of Otay Mesa, just outside of San  
21 Diego. And so that was really cool to see that, because  
22 it's going to be so important that we have good access for  
23 trucks to ZEV refueling.

24 I went to Cajon Valley School District to see the  
25 in-live action V2G. And they could show us Nuvve, which is

1 one of the companies that we have invested in through EPIC.  
2 But Nuvve showed us like, here you can see on the on the  
3 screen when we're giving energy back into the grid. And it  
4 was just cool to see, but also to hear some of the  
5 challenges that they faced in terms of getting that project  
6 going.

7 I went to a green mobility fair in Huron with  
8 Mayor Rey León, who I think all of us know. Well, he's  
9 very charismatic and wonderful. And he's really doing  
10 innovative things. I went with Patricia Carlos, my new  
11 Advisor. And we had just a fun time together with tear  
12 Randolph from the Air Resources Board, honoring Rey,  
13 honoring the work that they're doing. And celebrating the  
14 fact actually that CARB and the CEC are co-funding the  
15 Clean Mobility Options Program. CARB has been the lead and  
16 we're participating in that, but this idea that we have to  
17 work together as one.

18 I visited a cement facility, CalPortland Cement.  
19 They were so nice to open their doors to Commissioner  
20 McAllister and me and our teams. And thanks, Virginia Lew,  
21 who was organizing that. But cement is 2 percent of the  
22 state's GHG emissions, so an important sector to target  
23 when we think about our industrial decarbonization money.

24 And lastly, I'll talk about Linde. I went to  
25 visit Linde, which was on our Consent Calendar for getting

1 funding for an electrolyzer to produce hydrogen. And, you  
2 know, that idea of how do we incentivize the really-clean  
3 hydrogen production for the future? I think electrolyzers  
4 are right now not cost effective. But a lot of announced  
5 analysis indicates in 10 years they will be, so we trying  
6 to make seed investments now to really ramp up and make  
7 sure that California is again at the heart of this  
8 transition that we know needs to happen.

9 CHAIR HOCHSCHILD: Great, thank you.

10 Commissioner Gallardo?

11 COMMISSIONER GALLARDO: Just a couple quick  
12 things. We hadn't acknowledged Women's History Month, so I  
13 was really happy to hear you, Commissioner Monahan,  
14 highlight two very powerful women that we have to partner  
15 with: the Lieutenant Governor and Dee Dee Myers who will  
16 also be part of a visit we're doing soon, so I'll get to  
17 see her.

18 And there's also a women's movement that's been  
19 happening in Iran, and I won't go into detail about that.  
20 But just I wanted to highlight that, you know, Commissioner  
21 Monahan and I have the privilege of being here on the dais  
22 and participating in decision making that impacts our  
23 entire state and even our country. And there are still  
24 women out there who do not have those privileges and can't  
25 even consider them, because of the existing societal



1 practices and norms that are harmful. So I just wanted to  
2 acknowledge Women's History Month that just ended. And,  
3 you know, I could kick myself for not having said it  
4 earlier, but there was some events that we had for those.  
5 So that's good that we -- hopefully people were able to  
6 participate in that.

7           And then lastly we highlighted this already, but  
8 I wanted to note that the Governor did go out to the  
9 Lithium Valley. You know, we talked about the importance  
10 with the offshore wind tour of going to places in-person,  
11 getting to know people who are involved. And really  
12 immersing ourselves in that. And I'm so glad that the  
13 Governor was able to do that. That he's, you know,  
14 committing to this Lithium Valley vision that we have. And  
15 it gave a lot of confidence to the local community there.

16           So we're going back in a few days as the Chair  
17 mentioned earlier. And if there are others who'd like to  
18 join, not necessarily this upcoming delegation, but would  
19 like to join visits to Lithium Valley, if it's of interest  
20 please let me know, because we will be doing more of those.  
21 It is a beautiful, dynamic place that we're doing a lot of  
22 work.

23           So that's it for me, Chair. Thank you.

24           CHAIR HOCHSCHILD: Great, well thank you both.  
25 I'm grateful to be surrounded by power women on the dais.

1 And I appreciate very much you raising that Women's History  
2 Month. I wanted to specially just highlight the women in  
3 Iran. And I've had some dialogue with Mona about this just  
4 incredible bravery in the face of a pretty oppressive  
5 system. And I just really wanted to share our compassion  
6 for that long and challenging journey they're on. So I  
7 appreciate you raising that.

8 I wanted to just add a little bit more to the  
9 Japan trip. It was an absolute delight to go both with  
10 you, Commissioner, and with Linda Barrera. We had really  
11 an extraordinary visit. And Japan is way, way ahead of us  
12 on high-speed rail. We had the chance to experience that.  
13 Way, way ahead of us on electric heat pump adoption, which  
14 is nearly universal. Way behind on renewables, they  
15 basically are now importing vast amounts of gas to make up  
16 for the shutdown of their nuclear fleet after Fukushima.  
17 It's very costly, still very polluting. And so we actually  
18 had some really fruitful dialogue around that and on  
19 offshore wind.

20 Their goal on offshore wind is quite bold. It's  
21 45 gigawatts by 2040, which is larger than ours. But  
22 they're moving very slowly. They did just finish one  
23 project. But obviously there's a lot to do there.

24 And so we're actually -- really a suggestion, I  
25 wanted to thank Commissioner Monahan for, is that we do an

1 MOU with them. So that is in motion. We had hoped to be  
2 able to do that in time for the Offshore Wind Symposium.  
3 It's too short notice for the May 8th one, but we will do  
4 everything we can to get that executed later this spring.

5 But also very fruitful meetings with them on  
6 electric heat pumps, on energy storage, and then went to  
7 Toyota on zero emission, transportation, among other  
8 topics. And I just really wanted to commend both  
9 Lieutenant Governor Kounalakis and Dee Dee Myers from GO-  
10 Biz. You know, there were 100 people on this delegation,  
11 which is by far the biggest delegation I've ever been a  
12 part of. That's a lot of cat herding to do and it was just  
13 exquisitely, exquisitely organized from start to finish.  
14 And you know, that matters a lot. The substance and the  
15 richness of the discussions doesn't work if you don't have  
16 the logistics handled really tightly. And I thought it was  
17 just really every day was really well done.

18 I went on from there just solo to Korea to take  
19 the opportunity while I was over in that part of the world  
20 to meet with a bunch of leading Korean clean energy  
21 companies including Hanwha Solar, which is now the largest  
22 domestic manufacturer in the United States for solar. As  
23 well as POSCO, which basically buys lithium and makes the  
24 cathodes for LG to do batteries. And we met with LG as  
25 well and a few other companies. So I was really, really

1 glad to have that engagement.

2           And I think particularly around electric heat  
3 pumps, there's a lot of opportunity. They were just  
4 another example of how we're functionally seen as a  
5 country. You know, the 6 million electric heat pump goal  
6 that we established got a lot of attention in both Japan  
7 and Korea. And I think is really actually going to impact  
8 their manufacturing scale up, to help meet (indiscernible).  
9 And so I want to highlight that.

10           I wanted to share -- actually, before we leave  
11 Japan, I just want to invite Linda, if there's anything  
12 else on the Japan trip. You were a core part of that. So  
13 if you'd like to share while we're on that topic.

14           MS. BARRERA: Well, thank you for the opportunity  
15 to speak about it. It was a wonderful experience. They  
16 treated us so well, like royalty. One visit that will  
17 always be in my mind is when we visited Panasonic. And  
18 they greeted us with flags and that was an amazing  
19 experience.

20           But in general, it was just amazing to see and  
21 just be in the room with executives of Toyota and Panasonic  
22 and Daiken who, they're the largest manufacturer of heat  
23 pumps in the world. So they're definitely watching  
24 California. Like they really think that these jurisdiction  
25 engagements are very important.

1           And the only other thing I want to highlight that  
2 I didn't hear is how it seemed that at least Toyota was  
3 unaware of what's happening or what will happen in the  
4 Lithium Valley here in California. And so hopefully, they  
5 will be interested in investing and learning more, because  
6 there's a huge opportunity to produce batteries and battery  
7 storage for vehicles in that region, in a more clean and  
8 sustainable way. So I also hope that the visit  
9 incentivizes potential future investments from Japanese  
10 companies in California, which we direly need to have more  
11 people employed in the state.

12           CHAIR HOCHSCHILD: Yeah, that's a great point.  
13 And we were able to make some connections for Toyota with  
14 California lithium. And I did want to also mention a  
15 really exciting part of the trip was there was a signing  
16 ceremony with Lieutenant Governor and Dee Dee and all of us  
17 for a \$1.4 billion deal with Fuji and CTR around developing  
18 the next set of lithium and geothermal projects in  
19 California. Just a great example of collaboration on  
20 climate. So thank you for highlighting that.

21           Thank you for joining. It was an absolute  
22 delight to have you on the trip, Linda.

23           A few other quick updates I want to share. I had  
24 a meeting, one of the things that's been on my list for a  
25 while is to deal with basically with CAL FIRE and sort of

1 what's happening with batteries. There have been  
2 particularly for residential systems some real challenges  
3 getting these installed. In some jurisdictions really it's  
4 so restrictive that it actually not only prevents home  
5 energy systems from being installed, but the logical  
6 conclusion of that actually if you kind of were to take it  
7 to its logical conclusion, really we have regulations that  
8 could end up effectively preventing people from having an  
9 electric vehicle in the garage. Because some of the  
10 covenants are so restrictive.

11           So we had a really fruitful meeting around the  
12 evolution of battery technology and safety, and all the  
13 measures that are in place to ensure safety. And I think  
14 there's been a lot of improvement around that. We had  
15 probably 15 or 20 people at that meeting and number of  
16 representatives from CAL FIRE going into the details. I  
17 really want to thank Secretary Crowfoot for making that  
18 connection for us and all of the representatives of CAL  
19 FIRE, who were terrific and showed up. It was a really  
20 fruitful dialogue and brought some industry leaders  
21 together around that.

22           Because actually residential energy storage,  
23 which is now roughly 1,000 systems a week, are being  
24 installed in California. That will play a critical role as  
25 we move to more and more virtual power plant model. And

1 time of use rates are basically for the people who have  
2 those systems, heavily incented for those systems to  
3 dispatch onto the grid during peak hours. And it's  
4 typically 5 kW. So, you know, a lot of people are getting  
5 two power walls and that's 10 kW. So it's a lot of power  
6 that can come help support the grid during times of need.  
7 But we really have to make it possible for these systems to  
8 be installed and interconnected safely. And so that  
9 dialogue was really, really terrific.

10           So I also just wanted to thank again,  
11 Commissioner Monahan for convening a really fruitful  
12 discussion with the utilities earlier this week. Around  
13 the need to accelerate deployment of particularly EV  
14 infrastructure, but really all electrification  
15 infrastructure. And that is the focus of the IEPR this  
16 year, but your leadership on that is just really  
17 appreciated.

18           And I think I will -- oh, I guess the last thing  
19 I'd share is we are now doing monthly meetings with all  
20 five of the offshore wind lease holders in California. We  
21 now have bi-weekly meetings with all the key agency, sister  
22 agencies who are working on offshore wind, so Lands  
23 Commission, Coastal Commission, Ocean Protection Council,  
24 Natural Resources Agency and so forth.

25           So with that, I think I will wrap up. And we'll

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1 turn now to Executive Directors Report Item 17.

2 MR. BOHAN: Thank you, Chair and Commissioners.

3 No report this afternoon.

4 CHAIR HOCHSCHILD: Okay. Item 18, Public

5 Advisor's Report?

6 MS. BADIE: No report.

7 CHAIR HOCHSCHILD: And Item 19, Chief Counsel's

8 Report?

9 MS. BARRERA: No report today.

10 CHAIR HOCHSCHILD: Okay, we're adjourned. Thank

11 you, everyone.

12 (The Business Meeting adjourned at 12:44 p.m.)

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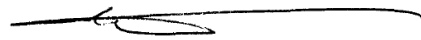


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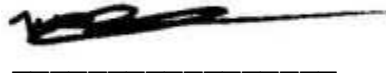
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