

**ECONOMIC DEVELOPMENT, ENERGY,
AGRICULTURE, AND RECREATION COMMITTEE**
Council of the County of Maui

M I N U T E S

Council Chamber

August 30, 2016

CONVENE: 1:30 p.m.

PRESENT: VOTING MEMBERS:

Councilmember Don S. Guzman, Chair
Councilmember Elle Cochran, Vice-Chair
Councilmember Don Couch
Councilmember Stacy Crivello
Councilmember Riki Hokama (arrived at 1:55 p.m.)
Councilmember Michael P. Victorino (arrived at 1:39 p.m.)
Councilmember Mike White (left at 3:25 p.m.)

STAFF: Sharon Brooks, Legislative Attorney
Pauline Martins, Committee Secretary

Ella Alcon, Council Aide, Molokai Council Office (via telephone conference bridge)
Denise Fernandez, Council Aide, Lanai Council Office (via telephone conference bridge)
Dawn Lono, Council Aide, Hana Council Office (via telephone conference bridge)

ADMIN.: Jerrie Sheppard, Deputy Corporation Counsel, Department of the Corporation Counsel
Frederick Redell Energy Commissioner, Office of the Mayor
Teena Rasmussen, Economic Development Director, Office of the Mayor

OTHERS: Dick Mayer
Sebastian Nola
Lucienne de Naie
Sharon Suzuki, President, Maui Electric Company, Limited
Mat McNeff, Manager, Power Supply Department, Maui Electric Company, Limited
David Bissell, CEO, Kauai Island Utility Cooperative
Jeanne Unemori Skog, President and CEO, Maui Economic Development Board
Doug McLeod, Energy Consultant, DKK Energy Services LLC
Lorraine Akiba, Commissioner, Public Utilities Commission, State of Hawaii

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

Naomi Landgraf, Maui District Office, Public Utilities Commission,
State of Hawaii
Mahina Martin, Director, Government and Community Relations,
Maui Electric Company, Limited
Plus (16) other people

PRESS: *Akaku Maui Community Television, Inc.*
Colleen Uechi, The Maui News

EAR-1(6) PRESENTATION ON MAUI'S ENERGY FUTURE (Rule 7B)

CHAIR GUZMAN: . . . *(gavel)* . . . Good afternoon. Welcome to the Economic Development, Energy, Agriculture, and Recreation Committee. I'm Don Guzman, the Chair of the Committee. Before we begin, I please ask everyone to turn down your cell phones or silence them. I'm going to go ahead and introduce our members that we have today on the Committee. We have our Vice-Chair of our Committee, Elle Cochran.

VICE-CHAIR COCHRAN: Aloha, Chair.

CHAIR GUZMAN: Good afternoon.

VICE-CHAIR COCHRAN: Good afternoon.

CHAIR GUZMAN: Mr. Don Couch.

COUNCILMEMBER COUCH: Aloha, good afternoon, Chair.

CHAIR GUZMAN: Good afternoon. Ms. Stacy Crivello.

COUNCILMEMBER CRIVELLO: Aloha, Chair.

CHAIR GUZMAN: Good afternoon. And Chair of the Council, Mike White.

COUNCILMEMBER WHITE: Aloha, Chair.

CHAIR GUZMAN: Good afternoon. We also have for our Administrative side, we have our Deputy Corporation Counsel, Jerrie Sheppard, good afternoon. And we have our Maui County Energy Commissioner from the Economic Development Office, Frederick Redell. Aloha. And for our Staff, we have Legislative Attorney, Sharon Brooks and Committee Secretary, Pauline Martins. Before we begin, I'm gonna go ahead and check in with our District Offices. In Hana Office, are you there?

MS. LONO: Good afternoon, Chair. This is Dawn Lono at the Hana Office.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

CHAIR GUZMAN: Is there anyone wishing to testify?

MS. LONO: There is no one waiting to testify.

CHAIR GUZMAN: Thank you. Lanai Office?

MS. FERNANDEZ: Good afternoon, Chair. This is Denise Fernandez on Lanai and there is no one waiting to testify.

CHAIR GUZMAN: Thank you, Ms. Fernandez. On Molokai Office?

MS. ALCON: Good afternoon, Chair. This is Ella Alcon on Molokai and there is no one here waiting to testify.

CHAIR GUZMAN: Thank you, Ms. Alcon. Before we begin, I'd like to remind everyone, if you are likely to testify, please come to the podium, identify yourself and/or the organization in which you represent. You'll have three minutes to testify. Once you see the red blinking light, you will have one minute. So, actually, two minutes and one minute to conclude. So, Ms. Brooks, can you call the first testifier?

. . . BEGIN PUBLIC TESTIMONY . . .

MS. BROOKS: The first testifier in the Chamber will be Dick Mayer, followed by Sebastian Nola.

MR. MAYER: Good afternoon, Chair Guzman. My name is Dick Mayer. I previously worked with, on several committees, the Council had a Committee back about 10, 15 years ago to decide where to put an energy power plant and they located it just above Puunene Sugar Mill, near the dump there, and that area is an area that possible could be used for expansion. I was also previously working with Hannibal Tavares when he was Mayor, he appointed me chair of a committee that took a look back after the earlier oil crises, what kind of planning to be done. And I also served on the MECO IRP Committee, Integrated Resource Plan, about 10, 15 years ago. So I've been on the periphery as a citizen on a number of committees. I'm very pleased that you're taking this up today in the Council and I thank you very much for doing it. As I see it, there are really two separate topics that could be almost divided into two different forums. One is, what kind of production capabilities do we have on the island and how should they best be used for the long term? Should we go solar? Should we go wind? Should we continue burning fossil fuel? Those kind of questions. Should we have a cable among the islands, Molokai, Lanai and Maui? And I'm looking at it--this is really a Maui County issue, and there are a number of technical things that we could talk about. Should HC&S lands be used to produce a biofuel of some kind? What can we do to incentivize clean fuels on the island, such as solar, wind? Should we go look at geo OTEC off the coast of Kaupo, where the waters are quite deep out there, as a

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

potential source? Should geothermal be explored? All of those are technical, production-type things that need to be done. The second topic, and it's somewhat different, obviously, they'll be related, and that is, who should be in charge of all of that? To what degree should MECO continue as it has over the years? We now know that NextEra is not coming in here but potentially another company may come in and want to take over and make another effort to take over Hawaiian Electric. Should MECO separate from HECO and run its own utility here on the island? Would that be in the best interest of residents here on Maui? Should the County do it as a municipal utility, as is done in many places? Should a co-op be formed, as Kauai has done? And we'll hear from that today.

MS. BROOKS: Thirty seconds.

MR. MAYER: So we have those kind of issues out there. And finally, we could also take a look at separating here on Maui, a company that would take a look, if it controlled, for example, the distribution system, the billing, et cetera--it could be MECO that could do that--and they would buy power from various alternative sources, a solar farm, a wind project, et cetera, and try to get the best rates. There are some other major technical issues. What happens if we do convert to these cleaner fuels --

MS. BROOKS: Three minutes.

MR. MAYER: --and I'll finish up--cleaner fuels? What happens to all the existing infrastructure, the sunk costs already for power plants, lines, et cetera, that may not be needed if we go for these new technologies? So I would just want to try to frame what I see as the issues that you have in front of you. Thank you.

CHAIR GUZMAN: Thank you. Members, is there any follow-up questions? Seeing none --

MR. MAYER: Thank you.

CHAIR GUZMAN: --thank you very much.

MS. BROOKS: The next testifier is Sebastian Nola, followed by Lucienne de Naie.

MR. NOLA (*Speaking from the gallery*): Mr. Chair? Sebastian Nola, I have no plans to testify. I apologize.

CHAIR GUZMAN: Okay. Thank you very much. We'll call the next testifier.

MS. BROOKS: The next testifier is Lucienne de Naie.

MS. de NAIE: Greetings and good afternoon to the Committee. And thank you for the panel being here. My name is Lucienne deNaie. I'm testifying on behalf of Maui Tomorrow Foundation. Just a little historic background. Back in the late 1990s, Maui

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

Tomorrow Foundation did a educational campaign at both the State Land Use Commission and at the County Council about alternatives to building more fossil fuel-based plants on Maui, seeing that as kind of a step backwards, rather than as a step forward. As time has proven, we are looking at ways to go forward across the spectrum now. Since that time, Maui Tomorrow has supported several of the wind farms that have been established here and also weighed in on some of the other renewable energy projects. We very much feel like a clean energy future is a good part of our economy. Certainly we see this in our Maui Island Plan, that part of our economic potential is to both use efficiency, investing in efficiency for everything that uses electricity, and investing in renewable resources as a expanded job sector for the future. With the large-scale plantation agriculture not being in the mix the same way it was. We don't know exactly where it will end up. Energy really, as an emerging sector, is more important than ever. We very much appreciate how much growth has happened in the renewable sector here. The solar companies have done a great job of getting solar, both hot water and solar electric generation, on many rooftops. We have large-scale solar proposed. We have successful wind farms. What we really need is a way to firm up our power that can be renewable as well. In other words, a way to firm up our power without just going backwards to more dirty carbon-based fossil fuel. So I think that's the challenge of this Committee and this panel that, what is the best pathway to take to that reality because --

MS. BROOKS: Thirty seconds.

MS. de NAIE: --if we can firm up the power, we can use all the solar that people want to give us, we can use all the wind that people want to give us and that isn't the case right now. Thank you for your time and interest.

CHAIR GUZMAN: Thank you. Members, do you have any follow-up questions for the testifier? Seeing none, thank you very much. I'd like to recognize the presence of Mike Victorino. Thank you.

COUNCILMEMBER VICTORINO: Good afternoon, Chair. Sorry, I'm a little bit late, sorry.

CHAIR GUZMAN: No problem. Next testifier, please?

MS. BROOKS: There are no further testifiers in the Chamber.

CHAIR GUZMAN: Okay, Members, apparently there is no more testifiers that have signed up. Without objections, I'd like to close public testimony.

COUNCILMEMBERS VOICED NO OBJECTIONS.

CHAIR GUZMAN: Thank you. Public testimony is now closed.

. . . END OF PUBLIC TESTIMONY . . .

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

CHAIR GUZMAN: Moving on to the only item that we have on today's agenda. Members, this is EAR-1(6). This is a presentation by the various experts in the field of energy. You know, basically, the changing energy landscape of Hawaii opens up many possibilities for the people of Maui to transform the current system and work towards the State's 100 percent renewable electricity goal by 2045, signed into law by Governor David Ige last year. The energy requirements makes Hawaii a global leader in renewable energy policies. The law also enhances PUC oversight to ensure that the targets always remain achievable and economical. We are all interested in achieving the most reliable energy production, together with the most reasonable rates. The proposed merger between the Hawaii Electric Company and the Florida-based company, NextEra, Inc., garnered national headlines this year as an unprecedented number of parties and participants debated the future of Hawaii's energy system before the PUC. Ultimately, the PUC determined that the merger should not go forward, opening the doors again for citizens and government alike to consider what utility decisions will best serve this County. To help us examine the issues and possible solutions, we have invited six experts in the field to provide us with their perspectives on possibilities for Maui's energy future. Starting off with the panel, we have Sharon Suzuki, who is the President of Maui Electric Company, which serves about 70,000 customers on Maui, Molokai and Lanai. We also have Mat McNeff, who is the manager and the power supply, of the power supply department at the Maui Electric Company. We also have David Bissell. He is the President and CEO at Kauai Island Utility Cooperative and he will be discussing the electric cooperative business model and how its structures has helped Kauai significantly increase its renewables source energies and generations. We will also discuss, he will also discuss resources and availability within the cooperative network, which will help KIUC operate effectively. We have Jeannie Skog, who is the President of the CEO, of the Maui Economic Development Board. Ms. Skog will be speaking on subjects of MPowerMaui, a community engagement process on Maui's energy future that enabled participants to learn more about energy, to think about their own actions related to energy, and to prioritize issues to consider what actions they would take. We have Doug McLeod, who is the energy consultant with DKK Energy Services LLC. He also donates his time by spending his valuable time as the program committee chair of the Maui Energy Conference, Chair of the Energy Committee of Maui Tomorrow Foundation and the Strategy Committee for the Maui County Comprehensive Economic Development Strategy. Doug also operates a consulting business, which was mentioned. He will be discussing what cost to make power on Maui with oil, wind and solar and how he defined that cost. He will also include an analysis of how different ownership types might affect cost and discuss how these might fit into broader notions of sustainability. We have Frederick Redell, who was recently appointed by--not recently, but he's been appointed by the Mayor as the Energy Commissioner earlier this year. He previously served as a managing director at Abengoa--I guess, I might have butchered that--Solar, LLC. and he's also a graduate from the University of Illinois and he has a degree in mechanical engineering as well as holding various professional engineering licenses in California. We also

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

have Commissioner Lorraine Akiba, who was appointed by the Hawaii Public Utilities Commission in January 2012 for the term to expire June 30, 2018. She was previously a law partner at McCorriston Miller Mukai & MacKinnon LLP as well as she previously served as director of the State of Hawaii, Department of Labor Industrial Relations and also Chair of the State of the Hawaii Environmental Council. She's also a member of the advisory council to the Board of Directors of the Economic Power Research Institute and she is also a member of the U.S. DOE at Berkeley National Laboratory Future Electric Utility Regulations Advisory Group. And she's also, I believe, a member of the local Energy Efficiency Action Network, Financial Solutions Working Group. In the audience, in the Chambers, we have Naomi Landgraf, who is the Maui District representative of the Public Utilities Commission and she previously worked, for 20 years, with the State Department of Agriculture on Maui and research as well. So why don't we begin with Ms. Suzuki for your presentation.

. . . BEGIN PRESENTATION . . .

MS. SUZUKI: Okay, good afternoon, Chair Guzman and members of the Economic Development, Energy, Agriculture, and Recreation Committee. I'm Sharon Suzuki, President of Maui Electric Company. And joining me today to make our presentation is Mat McNeff, our Power Supply Manager. This is a very special year for Maui Electric. We're celebrating 95 years of being part of Maui, Lanai and Molokai. Since forming in 1921, we have been transforming and to address the needs of the community and we continue to change. In fact, before NextEra came into the picture, we were already looking at our internal processes to change to better serve our customers and our communities and getting to 100 percent renewable energy. Now that the decision is behind us, Maui Electric continues to move forward on that path. Looking internally and focusing on efficiencies and innovation to better serve our customers, to give them more choices, and to help the communities get to 100 percent renewable energy, and we've made a lot of progress. Back in 2008, our renewable portfolio standard percentage was 14 percent of our sales from renewable resources like solar, wind, and biomass. And last year, we achieved 35 percent renewable energy with similar resources, ahead of the milestones required by the law. So in our business, we're constantly balancing achieving goals like 100 percent renewable energy, maintaining reliable and safe power to all of our customers and, most importantly, finding ways to stabilize and make your electric bills affordable. You know, we said all along, with or without the merger, that we can do this and we can do it. We are a strong, local company. This is our home and this is the only place where we do business. We can lead Hawaii and Maui County to a clean energy future. We have very hardworking employees dedicated to providing service reliably and safely to all of you and we're not for sale, we can do it alone. As part of the Hawaiian Electric family of companies, we have access and we have the financial strength to make the necessary investments in new technologies like energy storage, in new resources or additional resources such as wind, solar, potentially geothermal, biomass and other renewable technologies, to help us get to the 100 percent renewable goal. As an

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

investor-owned utility, we are allowed to earn a rate of return and that rate of return is regulated by the Public Utilities Commission. It's not a guaranteed return. We do have to earn it. And a portion of the returns are reinvested into the business to help us operate and maintain our infrastructure across the three islands and the remainder is used to compensate shareholders for the amounts that they invest in our assets to help us provide service to the different communities that we operate in. Moving forward, we know that we can't do it alone. We want to continue to collaborate. We know that the voice of the customers and our communities are important because that's how we succeeded. We didn't achieve the 35 percent renewable energy last year alone. So we're committed to meeting with our customers and the community, reaching out as we did last year. Last year we reached about 10,000 of our customers through different events, community association meetings, to share with them what we do in an emergency response situation, which ironically we're working towards today and this week, and to hear their concerns, any concerns that they had. So we have heard from them. We know that we need to continue to work with government policymakers, businesses, developers, community and environmental groups, and our customers to help us to achieve these very ambitious goal of achieving 100 percent renewable energy by 2045. In the next few slides, I'd like to just share where we, as Maui Electric Company, have grown to since forming in 1921. So we now serve about 70,000 customers across Maui, Lanai and Molokai and we support about 360 employees and their families, and many of them are probably your friends and neighbors. In terms of supporting the economy, we purchase goods locally and, as you can see, over \$10 million last year. And in addition to that, we collect franchise taxes. Last year we collected 10.7 million that went to the County to support their programs and services. As an investor-owned utility, our shareholders also provide funds to us to provide corporate giving, or giving back to the community, because being a good corporate citizen is important to our company and last year we supported social service organizations and schools, and especially science technology, engineering and math programs on the order of \$100,000. That amounts to multiple years of nearly \$1 million going back to Maui County. Now I'd like to turn the program over to Mat, who will share with you more specifics about what we are doing in the area of affordable, reliable, clean energy.

MR. McNEFF: Thanks, Sharon. You know, cost matters to our customers and it matters to us too. That's why we have been and continue to take measures that will address the issue, such as reducing our use of fossil fuel. Fuel is the largest part of a customer's bill and we've been working on lowering our usage. Since 2011, we've reduced our fossil fuel use by close to 14 million gallons a year. And since replacing it with renewable generation, not only will that lower costs, but it'll also work to stabilize bills in the long run. Where fuel is still required, we've been evaluating alternatives that are renewable, less volatile, and/or cheaper. As an example, it was almost a decade ago that Maui Electric tested all of our generating units at Maalaea Power Plant to run on biodiesel as an alternative to diesel. Another source of savings for customers is that we're able to leverage the purchasing power of our five islands to purchase goods cheaper than if we had tried to purchase them separately. We've also been designing

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

more customer options such as time of use rates and demand response to help customers manage their bills. Similar to the savings from purchasing power of our companies, we also share services amongst ourselves that allows customers to save money. As an example, Maui Electric relies on Hawaiian Electric for all of our legal services. Maui Electric is on the leading edge of renewable energy integration in the nation and that attracts partners to our different projects, that in exchange for the shared learning they get out of the project, bring funding resources. So projects that benefit Maui Electric customers can be done cheaper than they would be if we had tried to do them alone. One such example is the battery energy storage project that was recently installed on Molokai. Now Maui Electric takes its commitment to our customers very seriously, many of them who rely on our services, not only to make a living, but for their health and wellbeing as well. Accordingly, we put a lot of effort and resources towards keeping the lights on. For example, we spend nearly \$2 million annually on vegetation management. Trees falling into lines and causing power outages is one of the major reasons customers lose power and we spend this money in an effort to proactively trim trees in problem areas so that this type of outage is reduced in the future. And when problems do arise, such as storms and hurricanes, we work as hard as we can to get power back to the people. We spent over \$1.2 million just responding to Hurricane Iselle alone. And another advantage of having a 5-island utility is that we can all pitch in to help those areas hardest hit. Maui Electric sent crews to the Big Island to help people get back to power quicker. We've also been investing in our existing generating resources, making sure that they're equipped and that staff have the tools to manage all of the renewable energy we've been incorporating and the variability that comes with it as we maintain reliability so that when the sun doesn't shine and the wind doesn't blow, everyone can be confident that Maui Electric will be there to supply power. We've invested in upgrades that allow us to detect outages quicker, which in turn allow us to restore customers quicker. I mentioned a little earlier in the presentation the Molokai battery project. Hawaii National Energy Institute shared in the cost of this project with us to help us explore how best to use a battery on a system with a very high penetration of rooftop solar. And we propose spending about 340 million to modernize our grids in ways that allow even quicker outage detection and give customers more control over their electric usage through our smart grid efforts. As you heard Sharon say, Maui Electric is changing from a utility that primarily relies on fossil fuel to one that more and more relies on clean energy. We have a viable plan to get to 100 percent renewable energy by 2045 and we are currently 4 years ahead of the State goal of 30 percent renewable by 2020. Last year, we exceeded 35 percent. We have made modifications to our existing fleet and control systems that have allowed more than 90 percent of the annual wind production to be accepted into our grid. In fact, last year, we accepted more wind energy than we ever had before. And we're working with the Commission and stakeholders on a community-based renewable energy program that will give greater renewable access to customers that have historically been unable to participate in some of our programs; for example, those that live in condos. We have almost 90 megawatts of solar installed in Maui County. And just to give you an idea of the scale of 90 megawatts, that's larger than the combined total of all the wind

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

farms at 72 megawatts. It's also significantly larger than any generating unit Maui Electric owns. But we're not stopping there. We recently signed two purchase power agreements for two large solar farms on Maui. Now one of the main goals whenever we negotiate purchase power agreements is to help drive down customer's costs and we believe these two projects will with a price that's right around 11 cents per kilowatt hour. Fossil fuel used to generate electricity makes up only about one-third of the State's fossil fuel usage. So we have a formalized plan to further the use of electric vehicles, which can replace fossil fuels used for transportation with renewable energy. In fact, we recently were recognized by receiving the Clean Energy Transformational Achievement Award for our electric vehicle and fast-charging efforts. Thanks to programs such as JUMPSmartMaui, Maui County has more electric vehicles per capita than even Oahu. As Sharon said, we have come a long way but we've not stopped looking at new ways to integrate more renewable energy. In fact, we have plans to get to 100 percent renewable energy on Molokai ahead of the rest of the State and we are participating in pilots such as the E-Gear customer sided battery storage project that will help us chart the course.

MS. SUZUKI: Alright. I wanted to thank the Council and the Committee for allowing us this time to share what we're doing at Maui Electric. Again, collaboration is key. I think we can't do it alone. And thank you to those of you who have participated either with a rooftop solar system or if you're a developer and helped us to get to where we are or where we want to be. So as an investor-owned utility, we have the capability to leverage the strength of our Hawaiian Electric family of companies and to use our expertise and our 95 years of commitment to take Maui County to a clean energy future. Thank you.

CHAIR GUZMAN: Thank you very much, Ms. Suzuki and Mr. McNeff from MECO. Members, just to give you a update. We'll let all the panelists present their presentations and then we'll go into questions from the Committee. I've provided our Committee members various questions for each of the entities and persons as a guideline if you'd like to use those questions or you can come up with your own questions, but I was able put together these questions on behalf of the Committee. So feel free to use those if you don't have any questions of your own. Next we will have David Bissell. He is with the Kauai Island Utilities Cooperative. Mr. Bissell?

MR. BISSELL: Thank you. Good afternoon, Chair and Committee members. It's a pleasure to be here today. I want to run, real quick, through a little bit about KIUC for those who don't know about us. We're Kauai Island Utility Cooperative. We're the only co-op operating, electric co-op operating, in the State of Hawaii. We're relatively small, about 33,000 members and we're not for profit so all our profits above what we need to operate go back to our membership and stay on the island of Kauai. We're a new co-op. We started in 2012...2002, I'm sorry and we started with zero equity. We were financed 100 percent by debt. Since then we've grown to having almost \$100 million of equity. So we've strengthened ourself financially and become a nice viable solid utility on the island of Kauai. We've got nine elected board members. Everybody that

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

buys electricity from us has a chance to be a member and they get to vote for a director. Three are up for election each year on a three-year cycle. We're alone operating in the State of Hawaii but we're certainly not alone operating as a electric utility. There's about 930 rural electric co-ops throughout the United States operating in 47 different states. Number on the board, 42 million, that's how many the co-op network serves, how many customers are reached throughout the United States. And that's an important number because while we're small, this network of co-ops allows us to reach into a lot of the scale that was talked about by the Maui Electric folks because they're right, scale is important, and we're a small, small co-op, where without this network, we would be at a disadvantage. This network provides a lot of the advantages of the bigger investor-owned and sometimes I think we've got more advantages than the bigger investor-owns. We've got two or three cooperative banks, cooperative finance corporations, a \$25 billion bank, co-banks, \$100 billion plus. It's a co-op as well, both of those are, they lend to us at very low rates. We've also, able to borrow from the Rural Utility Service, that's a division of the United States Department of Agriculture. Real advantage of a co-op is we can borrow money at Treasury rates plus an eighth administrative fee so it's really the cheapest capital there is anywhere to get so that helps us out in comparison to having to go to market rates. We've got cooperative information service providers, the National Information Solution Cooperative, where we buy all our IT products from at a great price because there's the whole 900 co-ops, or most the 900 co-ops, pay into that organization, members of that organization, so all the development cost are pooled and we can get our IT very cheaply. We've got our own cooperative research network formed within, all the, every co-op's a member of that, similar to EPRI on the investor-owned so we get the cutting edge research and we've even got a marketing and member outreach co-op, a Touchstone Energy Cooperative, to help us with our communication. And midway down, the National Rural Electric Cooperative Association is our trade organization. That provides all our benefits, our 401K, our pension's carried through that so, and they also do our lobbying and our education of our elected directors and staff are done through that so a lot of resources within the cooperative network, just to name a few. What's the difference of a co-op? Well, in my mind, every member of a co-op has a stake in the success of the co-op, they're members, they're actual owners of it, and every action that a co-op does is oriented towards those members. We have no outside shareholders, we have nobody else to take care of or to please but the people that use our power and we, we're directly accountable for them, as I talked about through the election process. Finally, as a co-op, the smallness comes back through as an advantage. We're nimble, we're flexible and we're customer oriented, which allows us to act quickly and bring about results from our small size. This chart shows on Kauai, we've gone from about 8 percent renewable in 2006 to over 40 percent today. We're about 42 percent right now so we've already met the 2030 State targets and we're in the midst of a strategic planning initiative. My board's meeting today, right now, where I suspect they're going to authorize going out in the community talking about our 70 percent target that we want to hit by 2030. So we want to stay 10 years ahead of the State mandates on Kauai and we have projects in the works to get us there. How'd we get to 40 percent in 5 years? Well, 31 megawatts

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

of utility-scale solar, KIUC's actually developed and brought on our own projects. We've also done, we've got two 24, 2 projects equaling 24 megawatts of solar that the co-op owns and 7 megawatts of purchase power agreement. PV we've brought on, we've got our membership, the people of Kauai have put on about 18 megawatts of distributed solar. We've got a biomass plant that provides about 12 percent of the island's energy and we've also invested fairly heavily in batteries. We've got 10½ megawatts of battery storage, which has helped us be able to bring on all the solar. We're also, we broke ground, our partners, SolarCity and Tesla, have broke ground in the last couple weeks on the industry's first and largest dispatchable PV project, which will have, it'll be about 10 percent of our island's needs, 5 to 10 percent of our island's energy needs, and it'll be taking energy from the day time, running into a battery, and bringing it out at night in a cost effective way. So all told, that's about \$350 million invested in our grid on Kauai and it's combination of KIUC, developers, and our actual members doing that to move us to that point. One other, before I move on, we're also working on dispatchable PV. We're in active development of two new projects, both of which would be larger than the SolarCity and Tesla project so we are really bullish on battery storage on Kauai. We believe that that can be the answer to help move us towards the 100 percent targets for the State and we've got the land, we've got the sun, similar to over here on Maui, and we believe that that technology can help us get there. We've taken a position that there's a lot of risk on battery still, it's a developing technology. We don't want to own them. We're doing them through purchase power agreements, where the developers actually own them so our members aren't at risk but we're excited, we're doing a lot of good stuff on Kauai and I look forward to your questions. Thank you.

CHAIR GUZMAN: Thank you very much, Mr. Bissell. Next we have Ms. Skog and she's with the Maui Economic Development Board and she'll be speaking about MPowerMaui.

MS. SKOG: Thank you, Chair. And thank you for this opportunity. When MEDB was formed in 1982, we were formed with a mission of creating new industry for Maui County and energy was a natural place for us to go, partly because we have a natural strength there, we can do so many forms of it and it's manifesting itself certainly in recent years. But to the extent that we can manage our electricity cost, it has a bearing on anything we do in economic development as well. Thirdly, the career opportunities in energy are immense. So for those reasons, it's always been a priority for us in our portfolio. Let's see...thank you. So in terms--I'm focusing on community engagement and really highlighting the three forms of it for us. It is not, it's not the only way we do it but these three forms are probably most relevant for today. So we are probably best known for the conferences that we've done focused on energy over the past three years. We've done so in conjunction with the Office of Economic Development. It's been a great partnership. In fact, many of those here at the table have been a part of the conferences and it was initially triggered by the exponential growth in solar and wind and so forth, basically renewables and the impact that was having on utilities, not just in Maui County but actually across the US. So it seemed like a natural place to start for us and hence, the name of the first conference was

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

Electric Utilities: The Future Is No Longer What It Used to Be. It is definitely changing the whole paradigm in terms of utility. In the second year, with the advent of the NextEra proposal, we decided that it was timely to focus on the customer and focus on the impact that this merger could have on the customer. And, finally, in the third year, in 2015, with the Legislature having past that new mandate of hitting 100 percent renewable by 2045, that seemed to be the most pertinent topic of the day and we focused on that going forward. The next conference is being held in May, May 22nd to the 24th, so put that on your calendars...I'm sorry, March...thank you, Doug, March 22nd to 24th. So throughout our history, it's become very important for us to convene the community and historically we've done a lot of that through conferences but with the Focus Maui Nui visioning process that we did in 2003, it took us to a broader and deeper dimension of community engagement. And from that experience, we learned that these kinds of processes really glean the richest feedback from our residents and really help to bring them along in terms of the important dialogs that have to take place in our community. So the MPower process that we did really emulated the approach of Focus Maui Nui. Knowing that the 2015 conference that I mentioned earlier was going to focus on the customer, our goal in the MPower process was to lead up to that by assuring that a cross section of voices in our community were heard at the conference, particularly from those who normally don't have the opportunity to attend these kinds of meetings and basically to gather the perceptions and even misperceptions of what people know and what they don't know about energy challenges. There's many challenges to doing this approach, the community engagement. In this case, energy's a huge topic and there's a lot of opinions, a lot of misinformation. We learned a lot about this through the one-on-one interviews we did, 80 interviews we did prior to setting up this process. It's very labor intensive. You really need to develop good, quantitative and qualitative metrics within this process. And then there's always the task of finding funding to do this all. We've been fortunate to have, you know, sought and received funding for this process on MPower. So there were some major decisions that we made that are listed here and the focus was on small groups because we really want people to feel comfortable about talking and sharing their opinions and perceptions. And we went to the participants. We didn't set up a time and say, okay, you need to show up here. We went to employers, we went to homeowners, et cetera, and did a lot of the sessions in that way. This was not a scientifically random process but it was a very rich one that still yielded a lot of great information. Part one of the process actually began at the County Fair, where we gleaned, surveys from 1,400 residents that attend there. But the meat of this presentation is really about the structured process that took place after that. This is kind of an outline of the process and it was a 90-minute session and it centered on 4 different activities. The session was done identically in each of the 43 session that we held and really covered a range of ways to get our participants to share where they were at with us, including looking at tradeoffs, which is really a critical thing 'cause very often, you know, residents are asked, well, what do you want to see, what do you want, and you come up with really a laundry list of wish lists that really are not tested with, well, how much do you want this, how much do you want this over something else, et cetera, and this process really tried to get at that. So in

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

terms of the demographics, we reached 435 participants in 5 weeks through these 90-minute sessions. In addition, we had 1,477 surveys from the County Fair and 98 percent of the participants were full-time residents, the rest were part time. And the vast majority of them really rated themselves as average or unknowledgeable when it came to energy. So, again, it's important to say that this is, was not a scientifically random sample but, regardless, provided some pretty robust information. So from the participant evaluations, overall they really, really enjoy it. It's a very, very interactive process. There is definitely education involved but the rest of it is all about being interactive and sharing and hearing from them. Eighty-two percent of those who participated felt that they had done something significant in participating in the sessions at all. So what we learned, in a capsule, is, it confirmed something we suspected, that cost was the major factor in decisions and concerns that are driving our residents and, including our businesses. But costs were not the only concern and this was kind of a surprise. They were very vocal about the environment, about health, cultural issues and so forth, and also about ensuring equity. So in other words, there was a lot of interest in going after solar or being able to secure solar installations in their home but they were equally concerned about well, what about the other person that can't afford it. And we suspect that they were thinking about their parents or their children, et cetera, because it is an investment up front to get involved in renewable energy if you're, let's say a small business or a resident, going forward. There was a lot of suspicion about LNG and, in fact, some people even said well, what is LNG anyway. So that was enlightening in and of itself. And in the end, one big takeaway was people really want to know more, they want to be better informed and don't always feel that they have adequate resources to be informed and make the choices they need to make. And then, most recently, another dimension to our community engagement process has been what is called the CEDS, the Comprehensive Economic Development Strategy. This is a process that is mandated by the Economic Development Administration and it is to come up with an economic roadmap for any community that wants to be eligible for EDA funding. It is locally based, which is really, really important. It's very grassroots and the emphasis this year was on looking at strategies that will help build economic resiliency in our community. It is done every five years and MEDB has led the effort on behalf of the County of Maui since early 1980s. So there are specific requirements outlined by EDA in this process. The Strategy Committee itself must be a really broad mix of government agencies, private sector interest, educational interests, labor, nonprofits and so forth. So it's a very prescribed process. And this year it was focused on clusters. In the past, it was really just focused on business and how do you grow business and what's the roadmap for that. But this year, the focus was more on the cluster, which is not just a particular business but all of the ancillary activity that has to be healthy in order for us to succeed in economic development. I emphasize this is some draft recommendations that came out of there so far. We are about to put it to bid but these are the draft recommendations that came out under the energy cluster. There's eight clusters all together and energy came out as one of the major clusters for opportunities in economic development. So certainly renewable energy continued to be very, very high. The cost of energy for business was also very significant. Again,

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

this was focused on economic development and then looking at ways to really increase energy efficiency because that is, for sure, the low-hanging fruit, how we're managing the use of the energy that we have, we are already producing. So thank you. I'd be happy to take any questions.

CHAIR GUZMAN: Thank you, Ms. Skog. Now we'll turn our attention to the next presentation, which is by Mr. McLeod. He's the energy consultant for DKK Energy Services.

MR. McLEOD: Thank you, Chair Guzman and Councilmembers. I'm gonna take the opportunity to talk with you for a few moments now about cost. But, to be honest, what I'm really hoping is that you walk away thinking about value more than just cost. The topic here, indigenous and affordable, all three words matter. If we can find a way to do things that are indigenous, that are based on natural patterns of energy and affordable, that's really what we're looking for. What will it cost to get to a 100 percent renewable portfolio standard? Well, there are a lot of factors, obviously, but...here we go. The first one is economic cost and we'll talk a little bit about what it cost MECO to make power today. And they've given you a presentation about all the power that's coming onto their grid, but in terms of what their units are doing today, they are burning fossil fuel and--with the exception of little bit for startup and shutdown--and we're going to talk about that cost. The second thing we're going to talk about is the cost to our community and this is a term from economics, externalities. Then the final thing we're going to talk about in the cost area really has to do with social cost. And we haven't really talked about what's going on with the solar industry right now on Maui and I did want to make a few comments about that because we really are at a moment here where things are changing. What I've done here is I've created a chart, and I started in 2013 because that's the year in which all three wind farms were online, and there is, there are people here from the Commission and MECO so I'm going to give some of the footnotes that were involved in actually creating this data. And what we tried to do, these are contracts and the blue line on the bottom is the 11 cent project that MECO referenced, and we have some folks here in the audience from that project, 11.09 cents. The yellow line is showing you what MECO is reporting as its cost to operate its fossil units. And what, the point I'm trying to make here is that when you had people talking in 2013 or 2014, they could have discussions and tell you how they're going to reduce your bills and, in fact, that was possible and it did happen. But what's happened here is that MECO's cost, because oil prices have fallen so far, MECO's cost now are below the lowest recorded renewable energy price for Maui County. So it really gets very complicated and you heard MECO say that they've entered into this 11 cent contract with the idea that it's going to drive down prices. Now that's an interesting thing. I mean, you start making assumptions about the future. And we'll work through a couple other slides here. What we're showing here on the bottom, the references, KWP 1, Auwahi, and KWP 2 are the names of wind farms. And what we're showing here is the rate that MECO is paying these wind farms for power in 2016. And to create this, I've had to blend some data. In fact, all of these wind farms are operating under contracts where there are different blocks of power

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

that are at slightly different prices and sometimes more than slightly different. So we've made some assumptions here about curtailment and everything else. But what you can see here is that the mainland price, this price on the far right, that's about 2½ cents a kilowatt hour. And even though there are a number of factors that make this not really an apples-to-apples comparison--so just to be clear, some of the differences, those two wind farms, Auwahi and KWP 2 have batteries and those batteries are built into the cost of the power. But KWP 1 is really pretty close to apples to apples and you can see that we're at over 13 cents, compared to, you know, a mainland cost of 2½ cents. Now a mainland wind farm is a huge thing and it operates on a scale that we just don't have and we'll never get that low but I'm putting this up here because people in the energy industry have long felt that we just have not done a good job of buying low-cost renewable energy. And if you think about construction or you think about other things, you know, whatever the Hawaii premium is, you know, doesn't 200 or 300 percent cover it? And so, again, you just have this feeling that we just have not been good at buying power at a low cost. Externality, I've gone ahead and just grabbed a definition from Google here, and I'll read it--I don't know if you can read it from the audience--but it basically says, a side effect or consequence of an industrial or commercial activity that affects other parties without being reflected in the cost of the goods or services. And it gives an example. And the first one it gives is, the pollination of surrounding crops by bees. So when you get that, that's a positive externality, benefits all of us but doesn't show up in the price. The other kind of an externality is a negative externality and we experience quite a few of 'em. So I wanted to put this up because when people talk to us about cost, I want to go to the real world here. And this Council knows, for example, that the Fire Department budget has been a big issue and this fire, which is a recent event, burned 6,000 acres. It affected travel between West Maui and Central Maui. It affected the operations of the Fire Department for over a week and it was caused by a transmission line to the wind farm. And I just throw this out to you that, you know, again, when we talk about costs, I'm saying the cost to our community are not the same as what MECO will tell you the costs are. In other words, I don't mean that they're lying, I mean that for their company, they calculate the economic cost but that is not the same as saying, you know, how do MECO's operations affect us and what is the cost on the community. So I throw this out there again because someone is paying for all that fire response and all the lost time and all the lost business opportunities and it doesn't show up in any of our accounting. We're not alone on Maui. I put this up here. This is an article from the Honolulu paper but it's talking about something that happened on Big Island. And, sorry, this is actually very difficult to read so I'm just going to describe it. It's the manager of the geothermal plant explaining that when the transmission line to their plant goes down that they got a pressure build up and they had to release hydrogen sulfide. In the end, the State Department of Health fined 'em, I think \$25,000, and they had to deal with a number of claims from the neighbors but, again, when we talk about the costs of what we're doing, there are a lot of externalities and the message, I hope, isn't that we should avoid doing these things so much as we can't just base it on some simple analysis of cost. It's got to really be part of some broader guiding principles. And the co-op really

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

has an advantage there. I mean, there's some ideas that they've had very consistently for a number of years and they've been able to communicate 'em to their folks. I wanted to switch a little bit here and I'm putting up a famous quote. I saw this first in law school many years ago when we were teaching about water law in the Western United States. So it's from Mark Twain, or at least attributed to him. Whiskey is for drinking and water is for fighting over. And the reason I'm raising this again, when we talk about the cost of going where we want to go in this community, we all know that we are short on water, that we have issues Upcountry, we have issues in Central Maui, that water is a resource that we simply are always in some level of search for, always in some level of shortage. And right now, when we compare alternatives for how we make power, we give no consideration to water use. And so, again, when we talk about costs, we talk about what's going on in our community, I wanted to give you this backdrop showing our population. So what you're seeing there is, the first red dot on the left there is the current population, so about 165,000. And then, the dotted line is DBEDT's projection of where we're going to be in 2040 and, you know, 222,000, it looks like, if I'm reading that right. When you look at that growth and you understand our backdrop on water, it just becomes clear that as a community, we ought to have a preference for making electricity in ways that minimize the use of water. But in our ways of doing costs so far, we've never been able to get that subtly in what we're doing. So sustainable, ecologically sound development. There are actually a couple different places those terms are coming from but I've been lucky enough to work with both MEDB and Maui Tomorrow and it's amazing how consistent people are across the political spectrum on some of these things. So the first is just what we talked about here, isn't there a preference for factoring water use into the cost? Then the second point, it's really not being factored in, and then finally. Moving to 100 percent is a zero-sum game. We have been able to say in Hawaii for a long time that we want a broad range of resources but where we are today on Maui, we've got over 100 megawatts solar approved, we've got 72 megawatts of wind already on the ground and the reality is anything that would be a large-scale project at this point, a 20 or 30-megawatt project, is taking away from the ability of some other technology to do that. And so we can't just keep saying there's room for everything. In fact, we should make some preferences based on the broader community interest. Social cost. Here I wanted to talk for a few minutes about what's been going on to the solar industry on Maui. And, you know, the Maui companies on solar were early leaders and that's also meant that they've been some of the first to be affected by the changes. This is a headline from UtilityDive, which is a trade digest for regulated utilities, and it's just noting that the cap had been hit. So this was actually, in essence, the second cap, if you will. First, being the net energy metering systems, the NEM systems, and then these were, if you will, a son of NEM, the grid supply systems. And both Big Island and Maui now, we're done with those. As we got ready for this, I went ahead and talked to the people that own a couple of the solar companies on Maui. And I want to say that these were folks that are focused on the residential market and these comments are about the residential market. So I asked people what the market was like. Annihilated, destroyed. Every one of the owners that I talked to said that their business is down at least 50 percent. Basically what I was hearing from several of

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

them were statements to the effect that we will all be laying off people after the first of the year. You know, I will say that sometimes the solar industry folks have had a reputation for the boy who cries wolf and they've said our businesses is destroyed in the past but this was pretty specific to residential and it does seem like there's this fundamental problem where they're all building out systems that were approved under the old rules but they simply aren't signing up new customers at a rate that's going to be, you know, able to keep these folks on. Now, to check on this a little bit--and I want to say mahalo to the Public Works Department 'cause I did check with Public Works DSA and they said that there is less activity now and they do anticipate that things are going to slow down quite a bit but in terms of the actual permits that have been issued, you know, it's been a slow drop. Right now on Maui, the electric permit is the very final step in a process. You get your MECO approval first. So this is showing you basically the tail end of a pattern and it seems to be, if we take the statements that are being made by the owners plus the statistics, it looks like we're about to get hit with a downturn in the residential solar market here. So that's really what I've got. I think I used my ten minutes here and when this over, happy to take any questions that folks have.

CHAIR GUZMAN: Thank you very much, Mr. McLeod. Turning now to our County of Maui Energy Commissioner, this is Fred Redell.

MR. REDELL: Thank you. I wanted to start with, I think we haven't focused in this discussion yet, really a little bit more where we started, which was the objectives, just to frame again where we're at.

CHAIR GUZMAN: Can you get closer to the mic, please? Thank you.

MR. REDELL: Just to frame again where we're at at this moment. So we all have the objective, or we could share a common objective of getting to 100 percent renewable energy by the target of 2045. The next, of course, that we would like to stabilize and possibly reduce electricity rates over time. I think the second is an extremely tall order and I think a lot of people would tell me the same thing. The next one that we want to be able to do is improve energy security and resiliency. And sometimes this gets, I think, confused with the idea of whether or not the lights are on at this moment or an availability concept versus a resilient system that's able to withstand issues, changes, whatever they might be, from a fuel supply problem to a technical issue. The other being availability is any moment that your lights may go out, this isn't exactly the same problem that I'm trying to think or I'm suggesting we should address. So first I want to talk a little bit about what the County has been doing to get to this point. And a lot of this actually has been driven by others before me and I just wanted to recognize those people, of course, being Kal Kobayashi, for 25 years, working for the County, trying to drive things forward and, of course, Doug McLeod, my predecessor. Both of who got the County to 2.5 megawatts of installed capacity of photovoltaic projects. This was a very good effort and we hope to be able to leverage or build upon that. Other things have happened over time, including some small wind turbine

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

projects, and then a lot of smaller projects, like PV and lighting. So at this moment, the County's looking at what can we do next and what can we do now to continue moving in the right direction. Right now, we have under review, a renewable sludge drying project, which would also produce electricity, renewable electricity, for the Kahului Wastewater Treatment Plant. Next, at this moment, we're in early stage of scoping a few other concepts, which would be base-load solar power with batteries. It's a little bit beyond just shifting power into the night but to be able to supply energy for pumping, which water use is one of our largest, or one of the large energy uses on the island. Another one that we're looking at is when we're installing new projects, that, how can we make these both renewable and flexible so that they integrate to the system, they're efficient, and so what we're looking at is a combination of new water wells that would include photovoltaics, batteries, and in-line hydro, which would essentially reduce the electricity demand or make it a more efficient project. And then, of course, we're looking at at the moment too is demand response. It's a portion of the market that probably, in my opinion, would be next to be able to free up some flexibility on the grid. That flexibility has, when I was touring on Molokai recently, you can see that in that the County has a lot of assets that might be useful as a demand response type of asset. What I saw there was that the utility, doing exactly what they're supposed to do, gets ready for demand coming on by spinning another generator or being ready to accept that demand coming on. That demand would be, in that case, a County well pump. And instead of looking at that as a resource or something that you can use to then accept more renewable energy, the utility will be running a generator to respond to that and we need to work faster to try to find those opportunities where we don't have to spend more money to get these sort of results of flexibility. And so these will be some of the early things that hopefully we can do when the opportunity is there. And then, something that goes a little bit below the radar, not a lot of people know, is there's a lot of work that's always done by the County to be more efficient, to try to find ways to spend less money or to consume less fossil fuel by consuming less electricity. And there's a lot of projects, like variable frequency drives. These are ways to run motors or pumps in a more efficient way in both our pools and also in our wastewater treatment plants and such in a way that we're going to use less electricity by making a comparable or smaller investment, hopefully. And then we're now looking at other opportunities, which are out there. It's a little bit like my mother would say, turn off the light, turn off the light, turn off the light. As long as I would listen, we would be more efficient at home, so. The next...sorry about that, it went all the way to the end. There...so, what else does the County do? Of course, the County's involved with the Public Utility Commission cases and we do this in an effort to represent the County and the citizens of the County. Most notably, we participate in the Power Supply Improvement Plan. This is the process, the planning process, that the utility is using under the direction of the PUC to arrive at 2045 build out that is 100 percent renewable. But along the way, of course, you still have to be, have renewable power or reliable power, keep the lights on, and it's about what are we going to do next, right now in the next five years. And so we participate in that, we're actual intervenors in that. And then the other actions that we're not intervenors, we provide public comment where appropriate. This would include things like the demand

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

response or distributed energy resources or other dockets. So a lot of people saw in the last year a report that came out, made for the County, which was known as the Guernsey Report and this was a review of ownership models and what I wanted to start with in talking about this is it does focus on the idea of what if you were to look at the utility under a different ownership. That might not be the only way that we should look at it but its results came down to that there was a preference instead of direct ownership to have an independent system operator concept. This is something that you see on the mainland in a bulk electricity system. It flows down from FERC regulations down to the point where another entity would actually manage the systems that the utilities would own and then everybody would bid into and sell power into, or services into that model and then power is then delivered to the customers. The result of that was that that was its main preference, and then perhaps a co-op would be the right way to go, and then perhaps a municipal organization. So what we really need to do though is look into that deeper and see because those are trying to fit a concept for the future into an exact box that already exists. And what we're trying to do is see, you know, that box, we don't know what it's going to look like, we don't know which technology's going to come up, we don't know how it's going to exactly work in the future, what we would like to do is take the bits and pieces that are beneficial. And then, of course, for Maui County, look at this in the way that it's not the same for Molokai or Lanai or for Maui. And those are different, distinctly different systems that may have the same solution or may be different in time, or ones ahead of another, or one's going to advance ahead of another...we'll see. So where we would like to go in the near future is to focus on a few ideas. One is, continuing to review the regulatory structure to understand if it's, or what is the benefits of an integrated independent power system integrator and system operator, a little bit like the ISO, and then look at what is there out there, that are already in law or that already exist or is already funded, like the Hawaii Electricity Reliability Authority or other concepts, Hawaii Energy, that can fit into this model and can try to make a system that is more open and more available for others to participate to see how the market can drive these things and how, you know, new technologies can come in. And, of course, here, framing this with a particular interest in distributed energy resources and demand response type of concepts. There's, you know, it's, our belief that these are some of the things that will drive the future. We see it driving a change at this moment and we need to see how that will leverage it. And to the utilities credit, it is being included in the PSIP, the Power Supply Improvement Plan. It's just that, how far should it be included? Should we be looking at a future where it's 100 percent of that and that another entity is acting as an integrator? And then looking at business model structures. Instead of just looking at ownership, trying to separate this concept out a little bit, because maybe we get a little too stuck on the idea of who has to own it. Once you have the right thing, the right business model, the owner becomes more apparent and more obvious. So, in that idea, we would look at things that bring the utility more towards a service-oriented organization, something that is focusing less on the idea of planning for investment and more on how to provide certain services to customers or leveraging the services that they could provide and, again, with that same framing for distributed energy or for DER and DR. And then the last one is more

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

of a near-term concept, understanding that there will be investments still to come, investments have to be made to keep the system working, looking for structures where others could make that investment, and there are ways that currently exist, but further exploring that, if there are ways to use, perhaps, revenue bonds through the County or other ways that could make it possible that investment could be cheaper and potentially could decouple it from what some people feel is a conflict of interest between planning, a utility planning for the future, and investing in that and profiting from that. And so if we can somehow find a way to improve upon that process, we think we can, we should be trying to do that. Of course, some of these things cost money. We're looking at ways that we could participate with HECO and MECO, participate with the Hawaii State Energy Office because this isn't only about the county, it's about Hawaii and trying to find ways to improve all around. And so just a couple other quick things, 'cause I don't want to leave it off the table, there are other ways that we could continue to make progress. There are vehicles out there. We should be looking at community solar, how can that be leveraged, what does it actually mean, who invests in it, who participates in it? There are models being thought of right now that potentially could be like an employee benefit plan where a business that could have a project could invest in that, be the long-term investor, but their employees, while they're employees, could get the benefit of that through a employee benefit program. So that may be one way to look at it. Demand response, I've already talked about this. Of course, we need to find how we can do this, make sure the County's available to take advantage of this because there's a large asset available that can participate faster than other things that may require additional investment or an aggregation of many, many components. And then further review of co-ops by other parties. There are people that are still looking at this as an idea and we don't want to discourage ideas because something good can come out of this, we can learn something, and we want to understand what their ideas are and if there are good ideas, we would support them. And then lastly, somebody else touched upon, electric vehicles. One of the tasks that I was given by the Mayor was to look at a long-term plan of what it would take to electrify the utility or the fleet, the vehicle fleet, for the County. And so that is underway now. There's a lot of resources at the Hawaii State Energy Office but what we're going to look at here are what are all the impacts? Some of the impacts that do come up as we get there are, of course, road taxes and such come out of the fuel that's purchased and we kinda wanna make sure the roads are fine for the electric vehicles because Priuses aren't as durable as other cars for off road use. That's all I have.

CHAIR GUZMAN: Thank you very much, Mr. Redell. Finally, we have the great pleasure of having a commissioner from the Public Utilities Commission here today, Ms. Akiba, that will share with us as a perspective from a commissioner on Maui and Hawaii's energy future and present status. Thank you.

MS. AKIBA: Thank you. Thank you, Chair Guzman and Councilmembers, again, and also to my fellow panelists for the opportunity to participate today on this public education opportunity and this panel to provide some dialog on some of the concerns and issues

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

addressing this community, Maui community, who I believe is really a leader. I mean, I always go out around the mainland and across the world to brag about Hawaii, that we are leaders, we're sending postcards from the future. But I really do believe that here on Maui, you have been implementing many things and you are the living laboratory, the beta test site for much of what we talk about, you know, in other pilots, and you've been proving it in achieving the clean energy goals. I wanted to give a little bit of a background, 'cause for those that are probably listening on *Akaku*, you know, this all started a while ago, I mean, and there were stakeholders and people that came before those in the room who are interested today, you know, the first Hawaii Clean Energy Initiative. And even when I first came on board to the Commission, back in 2014, the states like New York and California were wrestling with these same issues and it's amazing how state commissions and local communities were really at the forefront of change in the energy area, realizing from, you know, from the bottom up, basically from the community level, that energy was a dynamic changing space with a lot of challenges and the need to respond was there. And while New York and California got a lot of national press, in the same month in 2014 of April, the Hawaii State Public Utilities Commission issued some very seminal orders addressing power supply improvement plans, demand response, you know, reliability standards, working groups, some of the people that have appeared in the room today were parts of those technical working groups and stakeholder groups, including, you know, KIUC and Maui Electric personnel. It involved all the utilities, all the stakeholders, everybody and from a Statewide perspective. And much of the work product of that we listened to and we issued at the time what became known as the White Paper and the Commission's inclinations on the future of Hawaii's electric utilities, and it was a seminal white paper because it laid forward a strategic road map for all the utilities, KIUC, MECO, Hawaiian Electric, Hawaii Electric Light and Company, for what the Commission saw based on input from stakeholders, based on input from experts, what needed to be done to align the utility business model with customers' interest and public policy goals. So I want to reiterate, folks can have a dialog about ownership structures and, you know, that is the kuleana of this community to do so, but really what the Public Utilities Commission was focused on is really, what is the business of the utilities, a more broader look at what is the business of the utilities of the future? Who should they serve? What should their priorities be? And that's the same for whether it's an investor-owned utility or a cooperative and that is really putting the customers first. And as a key stakeholder, we need to remember here today and the people out there watching and the public that we serve, we all serve as public servants, it's the customer that comes first and giving the customer choices and empowering the customers with the tools that we have at our disposal. And we, in our White Paper, encouraged the utilities to develop a diversified portfolio. So that could include central plant resources, utility-scale resources, balanced with distributed energy resources. We've heard some updates on what's happening with distributed generation in this community. But we also went and made a very important policy pronouncement in the White Paper, which basically defined what distributed energy resources are. It's not just distributed generation, it also includes things such as energy storage, and that's all kinds of energy storage, not

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

just batteries, but it could be electric vehicles, grid interactive water heating, thermal storage, many, pump hydro storage, many types of storage that can be tools in the generation toolkit. And we said energy efficiency and demand response as some of the folks on the panel have mentioned, the low-hanging fruit, the no regrets, low-cost strategies that are in the generation toolkit. We clearly defined these as generation resources because we wanted utilities to be able to have cost recovery for these very cost effective means by which we could use these tools to help integrate more renewable energy onto our grids to help modernize the grids to develop a diverse portfolio of different renewable energy resources, whether that's biomass, biofuels, geothermal, other types of energy resources besides solar and wind. And so we encourage this and it's not one-size-fits-all and different communities will respond differently. I know in Kauai, because of the endangered birds there, they don't have wind as an option. Maui has more options with wind, with potential geothermal, with other biomass, you know, biofuel opportunities here, you know, waste-to-energy opportunities, as well as on Oahu, that's an option. So I think the important thing to remember is that as a regulatory body, we wanted to try to give regulatory certainty to the utilities so they could go forward and plan and also implement. And it's very important to keep that in mind, that really, the utility of the future is really, you know, I've articulated this as a personal opinion, but it's also reflected in some of our, you know, of our orders, that really it's not so much about the sales of kilowatt hours, it's really about providing energy services of value to customers in the future. And that's really what the utility, the successful utility of the future will be, is providing energy management services whether that's in partnership with third parties who are distributed energy resource providers, whether that's, you know, demand response aggregators, folks that are working in the solar community or on the distributed technology side. There's a lot of software technology, as folks from MEDB know, in terms of Silicon Valley coming into the energy space and providing new technology tools so that utilities can better manage big data analytics and harness the capability to modernize new transmission and distribution systems, really develop that 21st Century generation system that we gave guidance on in the White Paper. And that requires also some regulatory reforms as well, so we pointed out for ourselves as a regulatory body and, you know, I think Fred touched upon this, that we need to be looking at new ways to value services and to look at what ancillary services customers can provide, what value they bring to the grid and what separate grid services they take, and properly value that so people know exactly what they're paying for and they can make choices to enable better efficient usage of their electricity, so they can make informed decisions to reduce expenses on their bills. So we are now facing, I think when we first issued that, the White Paper was 2014, we didn't have the 100 percent renewable portfolio mandate, which the State Legislature has now. As a State, we are now moving toward this very aggressive goal in 2045 and as our utility representatives on the panel pointed out, I'm proud to say that most of our utilities, all of our utilities are trying to meet that goal. There's no resistance, like you see on the mainland, it's basically how do we get there and, you know, devil's in the details as well and they're setting very aggressive goals for themselves, even exceeds some of the basic minimum standards. But it's not easy and renewable energy resources do put certain

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

constraints on the system and because of the way electricity systems must work--and I'm not an electrical engineer, there are others on the panel that can more, better explain that to you--but there are certain realistic concerns that come about because in order to integrate more renewable energy, which is intermittent, we must have other tools in the toolkit to get to 100 percent and that's where energy efficiency and demand response are important, that's where energy storage is important, and that's why customers are so important to use, the customer-sided resources, customer-sided demand response, customer-sided distributed energy resources in partnership with central plant utility-scale resources. So really we are, we are at now, at a crossroads of what I call Hawaii Clean Energy Initiative 2.0. So if I could summarize it with four words, I'd say, it's renewable energy on a reliable grid and that's what the utilities get, have to be held accountable for because they're the ones that keep the lights on, they're the ones that, as Fred mentioned, are accountable for resiliency, for reliability, for energy security, but within a reasonable timeframe because as customers, we, and as citizens of Hawaii, we want to get to our goals within a reasonable timeframe and then as everyone has pointed out, it's at reasonable rates. It's not at all costs because the reality of living in, you know, in an island state with island grids, we have other expenses and therefore, the price of energy whether it's with the energy water nexus or energy transportation is really important. So these are some of the policy issues that Councilmembers here have to deal with as community leaders. With all of you as energy stakeholders in your respective industry areas and with our utility representatives here that are on the panel, and ourselves as regulators and for the legislators at the State level who make decisions. But I want to say is the cup half empty or is it half full? I'd say it's half full for Maui, you know, and not because I'm a Pollyanna and I want to be positive, but I do want to point out that you have so many opportunities here, so many things that are in your advantage. Maui is a leader in STEM, Science, Technology, Engineering, Math. MEDB is a leadership model for that. Your schools and your community colleges, you lead in STEM workforce development skill, you know, education. You're leading in terms of this area and this is the future. The distribution technology people from Silicon Valley who are doing pilots and the folks that are doing, you know, energy management system pilots on Molokai to blend solar with energy storage, they come from those backgrounds. They're software engineers, they're information technology experts, who develop those STEM skill sets and are now bringing them home to Hawaii to implement them for real-time solutions for our grid. So it's very important from the very basic ingredients for making a utility of the future. As I said, you already have implemented a lot of key projects that hopefully will become now adopted in other areas of the State. JUMPSmartMaui, which was mentioned by both Sharon and Mat, this is a, truly, I go out and I really, I can't reiterate more how JUMPSmartMaui is an example of the integrated grid of the future. Central plant resources combined with distributed generation, combined with customer-sided resources, electric vehicles, vehicles to grid, grid-interactive water heating, you know, intelligent systems and energy storage systems at the central transmission level as well as a distribution level, voltage control types of technologies that help to, again, integrate more renewables onto a smart grid, the smart grid of the future, you know. To enable smart solar from two-way inverters on the more modern

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

technology that's been installed by some of the more recent solar contractors and some of the solar folks that have now the capability like they do in Germany to use two-way inverters for reactive power to provide ancillary services back to the grid. So customers are actually helping to support the grid, helping with voltage control, you know, it's not just on the utility side of the meter, but on the customer side. You know, we have companies like STEM that are doing pilots here, communities like Solar City that are also working with our utilities and I think Dave Bissell mentioned that in terms whether it's dispatchable solar or working in terms of distributed energy resources to energy management systems and to be demand response aggregators, so all those separate rooftop PV systems can now be a virtual power plant, can provide support to the grid, as well as to provide energy and capacity. So these are all new things that didn't exist maybe 5, 10 years ago, you know, I mean, it's an exciting, dynamic time and I think that Maui is well positioned to have a lot of opportunity out of this. Community renewables, as Fred mentioned, is another area where the State Legislature has initiated a program framework and we at the PUC, it's an open docket. I can't speak more about it other than to encourage people to go to the White Paper and give comments in the last round of comments for the community renewable tariff, which all the utilities will be inputting in, but this is a way to allow access for all, not for those that just have rooftop PV, but for everyone. And we talked about addressing those that live in multi-family dwellings and it has nothing to do with income level but folks that will never be able to have rooftop PV but maybe can have access to community renewables through this tariff program to be able to subscribe in to whether it's community solar or community wind as appropriate in their communities. So I think there's a lot of opportunity here. And I'm going to end with a quote 'cause I, you know, I always want people to be encouraged to think. And I think it's a quote that's appropriate and most of the people in the room, I think, are of the age. There are a few millennials out there but I think most are at the age that remember what Robert F. Kennedy said. There are people who see things as they are and ask why. I see things as they could be and ask why not. And so I leave you with that challenge to see things as they could be, to vision it, to work together collaboratively. As Jeanne pointed out, you have great opportunity here. You already are good collaborators, you've worked in partnership, you have that basis for community dialog, you have the foundation blocks to build upon that. So, you know, imua going forward. I encourage you and I'm encouraged by what's happening on this island. So thank you for letting me speak today.

. . . **END PRESENTATION** . . .

CHAIR GUZMAN: Thank you very much, Commissioner Akiba. That was a great wrap up. Thank you. I'm going to go ahead and open up the floor to the Members. I know you have a lot of questions and why don't we start from Mr. Victorino's side and go down the line. So, Mr. Victorino, the floor is yours. You can ask some questions to the various panelists and we can see if, which one of them can field it.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

COUNCILMEMBER VICTORINO: Thank you. And, first of all, I'd like to thank all the panelists for being here today. I also would like to thank Maui Electric and the other utilities who are preparing for possibly a real challenge in the next three or four days. And that is the stem of what readiness is all about. You know, we can talk the talk about all of this other stuff but when it comes down to these natural disasters, that's when we really know how well they're prepared and what they do. And that's one of the questions I have is--and I really don't know who would ask the question too--but because of that imminent threat, and you mentioned, I think Ms. Suzuki mentioned, the cooperation between--oh, maybe it was you, Mat--that Maui Electric sent people to the Big Island and because of the network of their company, their abilities, not only in the purchase part, but when to meet up with disasters or meet up with challenges, they are able to put their assets together and get out there and do it. And that's was one of my concerns--and this is where I'm not sure who would answer that question--as we look at trying to move into cooperatives or other means of management, how would that interaction continue? Not to say that we wouldn't go running up to Kauai if Kauai had another Iniki 'cause, you know, this is Hawaii, but we stand alone. We're a State that stands alone, counties that stand alone, and we're 2,500 miles from the mainland for any help. It takes days for them to get here. What we have here is what we gotta use until they arrive for assistance. It's not like in the mainland, get trucks, bam, and you're down there in Louisiana or wherever else. No, this is not Hawaii. So I guess my question, Mr. Chair, and it's not, you have it somewhat put out here, but to whomever would like to answer, how would the cooperations continue if we start segmenting or making smaller or more independent utilities or cooperatives or whatever they may be and not have that ability to come together? Would that continue to exist? And, I guess, that's my question, Mr. Chair. And I don't know who would answer.

CHAIR GUZMAN: Does anyone on the panel want to field this question?

MR. BISSELL: I'll be happy to.

CHAIR GUZMAN: Okay, Mr. Bissell.

MR. BISSELL: Yeah, I think I can speak for the MECO and the HECO people on this and any utility person. That's not going to change. No matter what the organizational structure is, utilities are going to help each other out, whether they're co-ops, investor-owned, if they switch around, they're still going to help each other out. We've done it throughout history, it's done on the mainland and it would be done here. So I'd be shocked to see to any change in that.

COUNCILMEMBER VICTORINO: Sharon, you want to add something to that?

CHAIR GUZMAN: Commissioner Akiba?

MS. SUZUKI: 'Cause the, you know --

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

CHAIR GUZMAN: Oh, Sharon?

MS. SUZUKI: --Mat shared that we sent crews over to Hawaii Island after Iselle, after we secured our County here, or knew we had enough resources here. KIUC was also part of it. So we definitely, you know, help each other out here. And I think we did explore, as a tri-company, so Hawaiian Electric family of companies, getting resources from the mainland because there are mutual assistance programs between the utilities in Hawaii and the mainland to have, get help, right, if it were worse. So hopefully it's not, even going forward, but it was going to be more expensive. So I think what happened locally became the quicker, cheaper option. So that is a benefit of us being able to help each other. If it had been a larger scale event though, we certainly would've had to have tapped additional resources.

COUNCILMEMBER VICTORINO: Which is understandable, I mean, you know, if it's a major event like what happened on Kauai where the entire island was wiped out, yes, you've gotta bring in outside help but I just wanted to know, you know, and I'm glad to hear those answers, because that makes me reassured that the community would not be affected with these changes, that we still can work together.

CHAIR GUZMAN: I think we have, Commissioner --

COUNCILMEMBER VICTORINO: I think, Ms. Akiba.

CHAIR GUZMAN: --Akiba?

MS. AKIBA: Yeah, I just wanted to take it a little, and not so much in terms of the emergency response, you know, reliability, restoration level, but really more from the planning level again. That's why I think, you know, all the utilities been looking at a resiliency plans in terms, also what we call the integrated energy districts, which we talked about in our White Paper in inclinations, so that we learn from the lessons from the East Coast from Hurricane Sandy and, you know, how the grid was taken down. And, in fact, better usage of some of the distributed energy resources, location of power plants in areas that, you know, where they would not be subject to some of the water damage and tidal surges, looking at, what we said, integrated energy districts where microgrids where you have areas where, you know, power plants or customer-sided generation could be kept running and islanded off in the event there is a natural disaster or, heaven forbid, a geopolitical event that, you know, affects one of the islands. That you could island off portions of the grid so parts of the grid could stay operational and provide necessary water, you know, food and emergency hospital services. And that's part of what was addressed in that White Paper is that the utilities were encouraged to think about using storage, using, you know, a combination of customer-sided generation resources to create these integrated energy districts. And a lot of the large customers on the grid have backup generation, but trying to make that, again, more renewable, you know, in nature, not just the diesel

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

gen set that kicks on, you know, in an emergency, but more planned so that with storage, with solar, with some of these new technologies, and whether, even if it's a, you know, EVs that could function to provide, you know, some backup power, vehicle to grid. I mean, that's stuff that I think the great Maui project that's in its next phase of iteration--and Sharon can speak to that--is looking at some of these strategies, that you have smaller, when you talk about smaller areas, it's actually you island off areas within a grid so that they can be more resilient and I know Kauai has initiated some of that as well. So all the utilities are looking at that, operating a little bit differently, you know, than traditionally.

COUNCILMEMBER VICTORINO: Thank you. And, again, we're in a new business model and a new business age so I appreciate that. And thank you for the answers. Thank you, Chair, I'll let others --

CHAIR GUZMAN: Thank you --

COUNCILMEMBER VICTORINO: --ask.

CHAIR GUZMAN: --Mr. Victorino. Mr. White?

COUNCILMEMBER WHITE: Thank you, Chair. For Mr. Bissell, when you look at Maui's setup, Maui's size compared to Kauai, my recollection is that your rates are a little bit higher on Kauai than the rates here on Maui. What would you estimate your rates...if we had the same setup on Maui that you have on Kauai, what do you think our rates would look like in comparison to what they are today or in comparison to what your rates are?

MR. BISSELL: I think by definition ...

COUNCILMEMBER WHITE: I think your mic might be off.

MR. BISSELL: Can you hear me now?

COUNCILMEMBER WHITE: Yep, that's better.

MR. BISSELL: I think by definition for any type of an ownership change for the PUC to approve it, you would have to establish to the PUC and for your citizens here, you're going to have to establish that it's going to be cheaper than it would be with an investor-owned utility. So you'd have to capitalize on interest rate differentials, keeping profits here and be able to prove a case that it's going to be more beneficial. So, and I think arguably it is. There's no, I'll go off a little bit on the organization structure, you know, it's all about how you execute, how things are done. There's no silver bullet organizational structure that's going to radically lower the rates. Every utility operates pretty well. It's all relative. The thing that a co-op can bring, it's more direct control, direct influence by the citizens but it doesn't mean by definition, form a

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

co-op, form a muni, form any other type of organization, that the rates are going to go down because of that.

COUNCILMEMBER WHITE: Okay, thank you. And, Ms. Skog, what is next in your toolkit as far as JUMPStartMaui is concerned? Where are we headed next?

MS. SKOG: Right now, Hitachi is actually looking at building off of that and looking at other projects with the utility that builds on the volunteers that have come about as a result of JUMPSmartMaui and really seeing all of those volunteers, which is about 400, as a kind of asset for moving us ahead in renewable energy and this virtual power plant ideas and so forth. So we're kind of following their lead and their expertise in where it can go but we are excited about sort of next steps that they are considering.

COUNCILMEMBER WHITE: Okay. And, Mr. McLeod, one of the troubling slides that you shared with us is the comparison of pricing for wind energy here on Maui versus mainland pricing. And I had heard the mainland pricing that about two and a half to three cents before, but I wasn't sure what the pricing was for the Maui wind farms. Where do you see that--I'm not sure we can change any of the PPAs at this point, but it seems like there's some, for lack of a better term, windfall profits.

MR. McLEOD: You know, I think there are a lot of aspects. Obviously, if we want to have an environment where more people are going to keep coming to Hawaii and be willing to invest in renewable energy, sometimes, you know, we probably can't revisit all the deals in retrospect. But, yeah, you know, what honestly has happened here is that most of the renewable energy procurements directly by the utility have not gone all the way through for a number of very different reasons, they simply have not occurred. And so, here on Maui, it's all been developers bringing the projects to the utility and that's probably not the lowest cost model. So I'd wrap up with that.

COUNCILMEMBER WHITE: Okay, that makes sense. Sharon?

MS. SUZUKI: I guess I'd like to share that moving forward, we're looking to do more RFPs, requests for our proposals to solicit for a new generation, whether it is firm renewable resources or variable resources, and with the hopes of getting a much better price in a competitive forum.

COUNCILMEMBER WHITE: Thank you. And, Chair, I would totally agree with Ms. Akiba's analysis that Maui's way out in front and it's because of the people sitting at this table this morning and sharing their ideas--this afternoon, I should say. So I thank you for putting this on and thank you all for being here.

CHAIR GUZMAN: Ms. Crivello?

COUNCILMEMBER CRIVELLO: Thank you. Thank you, Chair. This is a very, very good presentation that we have before us. Mr. McNeff, you mentioned about the recent

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

installation of battery on Molokai. Is that the, is the installation completed and is that just to, is that for storage? Can you kinda elaborate more the purpose of this? And I've been on the table when you folks were leveraging the partnership with the university and the, I guess, with the U.S. Navy too so that's appreciative.

MR. McNEFF: Sure. Thank you for that question. So the battery energy storage project on Molokai, it's at the power plant, the Palau Power Plant, the installation is complete and we're just working on some fine tuning for the control algorithms. But as far as the physical installation, that has been completed. Just to reiterate, that was a partnership with Hawaii Natural Energy Institute and it was to experiment with regards to how best to use a battery. So, you know, it's kind of like to test out the different battery use cases on a grid with a high penetration of rooftop solar.

COUNCILMEMBER CRIVELLO: So it's, so the rooftop solar, is there a waitlist that you're going to address so that, you know, because on Molokai, it's limited as far as what we can participate in your grid?

MR. McNEFF: Sure. So that project was more designed, you know, HNEI came to us, they had a battery and, you know, the partnership was in exchange for the free battery, you guys pay to install it, we'll kind of experiment with it and see how best to use it. You know, that project dates back a couple years. It didn't really come with any, it'll allow x-amount more of kilowatts of solar or anything like that. It's more just to figure out how best to use it. And it was really addressing, you know, can we stop PV from tripping offline during a disturbance. It may or may not be able to do that. You know, can we do this, can we do that and try to figure out exactly what its capabilities are. Maybe after we complete that testing, we'll have a better idea of exactly what it can or cannot be used for.

COUNCILMEMBER CRIVELLO: Thank you. I have a question, if I may, for Mr. Bissell. Can you, you know, there's always a consideration for, like rural areas, like the island of Molokai, as far as trying to form cooperative utility. How long did it take for the planning and the actual implementation? You know, I can see if community has an interest, it's not something you parachute in and parachute out, so.

MR. BISSELL: Thank you. Well, first of all, on Kauai, it was different because the investor-owned utility was for sale there. So it was a bid process on a sale to make it happen. And it took a period of a couple years and a couple iterations. One of the attempts was rejected by the PUC but best case, if there was a co-op formed on one of the smaller islands and HECO or MECO was willing to participate in selling it, it's probably similar to that, a year and a half, two-year process, to go through the whole approval chain and the financing and all that. It's not a decade-long process. If it was on the market or if they are willing to entertain an offer for it, it's a couple years probably.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

COUNCILMEMBER CRIVELLO: Well, thank you. That's, I think, an important point that those that show an interest to form a cooperative is that there has to be a willing seller for the existing utilities that we have. I forget who mentioned community-based renewable program. Was that MECO? Oh, Mr. Redell, or and, I think, Mat. We know that transmitting of our water, and especially on our island, for Molokai, which I become aware of it because of ongoing discussion. Do you see community-based renewable in something that could be applicable to cut the cost for the transmission or the electrical use that we need to transmit water from our tanks, our wells, and what have you?

CHAIR GUZMAN: I think, why don't we try Mr. Redell, followed by Mr. McNeff.

MR. REDELL: Sure. Thank you. I think I'd have to pull it apart a little bit to look at the different parts to see what we mean by cheaper and then cheaper to do a certain aspect. If we were trying to procure a photovoltaic project to do something of scale and deliver it straight to that well, I think that we could probably be cheaper than the cost of it, the the utility is charging for electricity at that point. What that would do to the rest of the system, we would have to see. However, if we looked at community-based solar in general, I think the advantages that you get would be cheaper because of scale again. It's, you know, clearly at least 20 percent to 30 percent cheaper than rooftop photovoltaics because you get the advantage of less inverters, more installation, more economies of scale. So how it's actually purchased and then how it would actually be delivered for the use of a well, I would have to look at to understand exactly a structure to compare but I think, in general, larger is cheaper.

COUNCILMEMBER CRIVELLO: Thank you. Did you have something to add to that, Mr. McNeff?

MR. McNEFF: Just in general. I think the concept behind the program is primarily to try to get or allow those people that historically haven't been able to participate because, you know, whether they don't own their own roof or whatnot, to participate in renewable energy programs. So I think maybe a pump that needed to lower its well, lower its electricity cost, might be better served by just installing its own PV system.

COUNCILMEMBER CRIVELLO: Okay, thank you.

MS. SKOG: Yeah, I just wanted to add that in the CEDS process that I mentioned, that is about to conclude, community-based solar was seen as a very important strategy but it also addresses what came out in the MPower process and that is one of equity and people being able to play. This allows people who can't afford their own to play in the renewable energy space in a more affordable way. So it's an important solution in that way as well.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

COUNCILMEMBER CRIVELLO: I don't know who can answer this but when I think of renewable energy, I think way back where there was biodiesel products here and then for some reason, it left the island and I think now they are on the Hawaii island. Are any of you familiar where that, is something like that, is still going on on Maui?

CHAIR GUZMAN: Panel, anyone can answer?

MR. REDELL: I can comment that, as I mentioned --

CHAIR GUZMAN: Mr. Redell?

MR. REDELL: --in my presentation, we are, the County is reviewing a project for, to create biogas to dry sludge and create, or produce electricity. So it is being looked at. That would be produced from an energy crop. So there are efforts to look at that. The economics of it, of course, ultimately should be considered and how the risk is apportioned to the parties should be considered.

COUNCILMEMBER CRIVELLO: Thank you. Thank you, Chair.

CHAIR GUZMAN: Thank you, Ms. Crivello. Mr. Couch? Oh, did...Ms. Suzuki?

MS. SUZUKI: Oh, I just --

CHAIR GUZMAN: Yes.

MS. SUZUKI: --wanted to add that we do still purchase biodiesel from Pacific Biodiesel to run, to start up a couple of our units at Maalaea. And in terms of biogas, biofuels for the future, we're in discussions, of course, with HC&S as they move forward to look at options for their property, right, in terms of whether bio crops will make sense and, like Mr. Redell said, we need to look at the economics of that whole system.

COUNCILMEMBER CRIVELLO: Thank you. Thank you for sharing that.

CHAIR GUZMAN: I think we have Commissioner Akiba also wants to make ...

MS. AKIBA: Councilmember Crivello, yeah, there is, and this is something that's already being, it's not before the PUC yet, but it was announced that in, on, City and County of Honolulu, you know, there is also a solid waste and, you know, wastewater treatment plant issues that have to be dealt with that--and the one utility that's not on the panel here today is gas utility, but--that they are exploring harvesting methane from wastewater treatment plants for biogas, renewable gas, natural gas, and then also from the landfill. And I'm not sure what the status is of the County of Maui's landfills or wastewater treatment plants, whether there's enough methane to justify that but that is another potential that is actually being explored now on Oahu. I think the City and County of Honolulu issued an RFP that was, you know, awarded and

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

Hawaii Gas had issued an RFP that was awarded. So that is being pursued with one of the major wastewater treatment plants on Oahu and that's, potentially I don't know if the County of Maui has that capability or capacity. But, you know, the utilities can potentially explore that option as well for biogas.

COUNCILMEMBER CRIVELLO: Thank you. Thank you, members.

CHAIR GUZMAN: Thank you, Ms. Crivello. Mr. Couch?

COUNCILMEMBER COUCH: Thank you, Mr. Chair. First, for Mr. Bissell, you talked about you're doing battery power, battery storage, over there. Have you kind of figured out the, what caused the big fires over in Kahuku and have you been able to mitigate that kind of potential?

MR. BISSELL: A couple things we're doing, and Kauai, and I think the industry is moving, instead of having one big facility and one big, you know, box full of batteries, they're, almost all the batteries going in now are containerized so there's less potential for a big fire. You get it, one container, they're separated from each other. We've also, on Kauai, and I think everybody's doing this as well, we put fire suppression in each container to help mitigate that as well.

COUNCILMEMBER COUCH: Okay, well it's good, because that was some of the biggest concerns. And I guess, you know, we talk about a lot of solar and the two big projects you got at 11 cents, does that include storage? Because, you know, if we're, obviously half the day, we need the electricity, especially part of the peak hours in the evening so we're not getting any solar input, so are you looking at having potential storage for that 11 cents or is that just the transmission--I mean, not the transmission--but the generation?

MS. SUZUKI: So for those two large-scale solar projects, it's just solar but--and maybe Mat can talk a little bit more about this--but as we look at our power supply improvement plans, we're looking at different uses for storage as we look forward and how do we, you know, integrate more renewable energy onto an island grid where we already have a high penetration of variable energy.

COUNCILMEMBER COUCH: Okay.

CHAIR GUZMAN: Do you want to add something, Mr. McNeff? Or that's it? Okay.

COUNCILMEMBER COUCH: Yeah, that's the big thing, is we need firm power more than we do the variable because of the lack of, you know, the lack of consistency of the power. You know, we talked about the 11 cents, is that 11 cents, you know, when I look at my bill, it's 38--well it's gone down a little bit--but it says 38 cents a kilowatt hour and when I wanted to compare that with, you know, my sister's bill on the mainland to see if we were close, their bill is completely different. Their bill says this much in

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

production and this much in transmission cost. So when I was thinking, oh, 11 cents a kilowatt hour, that's below the mainland's because of their combination, it turns out it may be that the 11 cents is still high because you have not included the transmission cost or is that 11 cents the total cost for the fuel, for the power, to get it to my house or my condo, actually?

MS. SUZUKI: The 11 cents is just to purchase from the independent power producer, the developer --

COUNCILMEMBER COUCH: So you would add ...

MS. SUZUKI: --and we don't markup anything on these purchase power arrangements. So separately in the bill is some allocation of the cost for us to get --

COUNCILMEMBER COUCH: Provide the infrastructure.

MS. SUZUKI: --power to you and to pay for the billing.

COUNCILMEMBER COUCH: So when I see my bill that says 38 cents an hour, that includes the transmission costs in the billing and the ...

MS. SUZUKI: Yes.

COUNCILMEMBER COUCH: Okay, and you don't have that separated out or do you? We have the fuel surcharge ...

MS. SUZUKI: I don't believe we, yeah, I don't believe we separate out generation --

COUNCILMEMBER COUCH: Okay.

MS. SUZUKI: --from transmission.

COUNCILMEMBER COUCH: So I'm just trying to work with numbers that are apples and apples. That's why I'm trying to figure that out. If you take a look ...

CHAIR GUZMAN: Wait. Mr. McLeod, do you want to respond --

COUNCILMEMBER COUCH: Oh, okay.

CHAIR GUZMAN: --to any of that or are you're good?

MR. McLEOD: I really don't have anything to add. I think you guys are getting the right information there, you know, as far as the cost levels.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

COUNCILMEMBER COUCH: Okay. So I just wanted, like I said, to make sure we're talking the same types of numbers. If, I don't know if you guys have any of the testimony that has come in but one testifier had a very interesting comment on how a for-profit company would work versus a potential either cooperative or whatnot. For instance, his thought was, you know, you invest 100 million for a power plant that uses fuel, whether it's diesel, gas or biofuels, you invest \$100 million then over the course of 30 years, it cost about 1.5 billion for the fuel. As far as you are concerned as a for-profit company, your investment is \$100 million. The \$1.5 billion is all borne by the customer, everything's borne by the customer, but that fuel is purchased by the customer. Where he talks about if you invest \$300 million in a solar power system and another 300 million in storage, that's your total cost. And to an investing company, that's a \$600 million investment versus \$100 million investment so you're going to go with the cheaper investment typically. That's his assertion. I kind of believe that because if I'm somebody investing, I'm going to say, well, I want to go with the \$100 million investment versus the \$600 million investment. Do you guys look at things like that because you are a for-profit company or are you willing to look at, yeah, it's going to cost more upfront but a whole lot less in the 30-year life of the ...

MS. SUZUKI: So when we look at different technologies, we look at the lifecycle cost so it involves both the upfront investment as well as the ongoing operating cost. So you could have diverse technologies where maybe the investment is very expensive upfront but lower operating costs so our planners look at the whole lifecycle of a solution.

CHAIR GUZMAN: Mr. McLeod, Mr. Redell followed.

MR. McLEOD: Thanks. I would like to add something to that, if I could. What you're hearing from the utility is that they are 35 percent renewable so let's do the math. I mean, 65 percent is oil, almost two-thirds, and, you know, one of the points that a number of us have made is that they're not doing anything to control this risk on the oil price because it's just a pass through --

COUNCILMEMBER COUCH: Right.

MR. McLEOD: --and that really is one of the concerns. So when they put their slide up and they said they're working to stabilize prices, their idea is stabilize it by, you know, what percent is renewable 'cause all the renewable is stable but, you know, there are a number of us that say that you should also be looking at the financial risk here while we're in transition. As long as the majority of the dollars are being spent on oil, we should actively be trying to control that price risk. Thank you, Councilmember.

MS. SUZUKI: I would like to share a comment, if I may. So Hawaiian Electric's family of companies have looked at hedging as a way to manage that risk that you're talking about. In the past, it didn't prove to be cost effective but we, I mean, there is a cost to hedge, right. So, but we are looking at it again. So I want you to know that we don't always stop because we said, no, it didn't work in the past. I think as times change,

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

we definitely relook at some of the things that we looked at in the past and we continue to do so.

CHAIR GUZMAN: Mr. Redell, do you want comment?

MR. REDELL: I just could add to that but I think a lot of what I was going to say has been added. But the Power Supply Improvement Plan should be looking at, and it does, what is the actual total cost to the consumer, not just the investment and cost so it is taking into account projections on fuel. So that part does take into account so the user should see that in the end. And then, of course, on the hedging point, I think that was the other important point I was about to bring up but I think hedging has a cost, it depends on how you hedge. I think when we saw some of the proposals for LNG and it was just simply said that hedging would be the fix, it wasn't explained on how it was going to be hedged and I think if everybody was so perfect at hedging, we would all be on yachts --

COUNCILMEMBER COUCH: Billionaires.

MR. REDELL: --so.

COUNCILMEMBER COUCH: Yeah, this was all pointed out to, again, you're trying to figure out how to stabilize the cost of fossil fuel or LNG, or even less so, any kind of bio, you know, bio diverse crops. Is there--probably not with you guys--but industry wide, and maybe Mr. McLeod and Mr. Redell, what kind of really big effort is put towards, you know, getting storage for, you know, it doesn't necessarily have to be electric. I believe we had a discussion about melted salt as a storage facility. I mean, there's all kinds of different...pump storage too. Is there a lot of effort by you guys or the commissioners or energy services companies to really work on storage? Because you got the storage, if it pencils out, then you don't have to deal with any kind of fuel that keeps coming, has to keep coming.

MR. REDELL: Absolutely...if I could? There's a lot of effort in this area and it's not just lithium ion batteries and, you know, lithium ion batteries do a function, they do many functions, but they may not be the most cost effective. In my, you know, prior career, some of the projects I was developing were solar thermal with molten salt energy storage. The energy storage component of that is much cheaper at about \$66 per kilowatt hour when compared to lithium ion batteries in the range of 400 or 500 or 600. However, the DOE does have many initiatives to bring down the cost of energy storage and, I don't recall the targets, I believe it's about \$250 per kilowatt hour, if you guys recall, as a sort of a target price, and what that does is it puts that cost of energy storage somewhere close to, on par with, if you were to operate a gas turbine at a certain capacity factor. And so what you're trying to do is see how that gets into the market at the right price. And many technologies are getting there. It's not just, as I mentioned, it's not just lithium ion but flow batteries probably will be what I think are some of the next technologies, they don't burn, many of the medium are not, you

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

know, hazardous and potentially they have a long-term lifecycle where you're not replacing a big portion of the unit every six or seven years.

CHAIR GUZMAN: Why don't we get a comment from Commissioner Akiba and then followed by Mr. McLeod regarding storage at the PUC level and what you've seen for the future.

MS. AKIBA: Thank you, Chair Guzman. I think, as I mentioned earlier, very early on in our inclinations on White Paper and in our orders, we made very clear that energy storage should be a component of the Power Supply Improvement Plan, should be a component of DER, Distributed Energy Resources, implementation and planning and also part of demand response as well because you can use customer-sided storage to call upon customers with storage at their facilities behind the meter to provide ancillary services to their storage systems, whether that's batteries or something else like thermal storage or, you know, pump hydro, whatever that form of storage technology is. So we clearly define energy storage as a distributed energy resource thereby by clearly defining it in our orders as a distributed energy resource, the utility will be entitled to cost recovery, as been, you know, indicated by some of the dispatchable storage and some of the other energy storage, you know, applications that have come before the PUC. So from the regulatory perspective, we tried to clarify and make certain where energy storage stands and that's very different from some of the mainland jurisdictions where energy storage--California, obviously, leading in terms of energy storage mandate, which is wonderful because actually they're creating the volume there to drive prices and technology, innovation. And with that volume there that we could never have because we're too small but what we have is the opportunities to implement here real time in many different ways, you know, like I said, utility-scale storage, community storage, as well as customer-sided storage. But the difference is, in our jurisdiction, we've clearly define it as a distributed energy resource, a generation resource, part of the generation toolkit to be used in lieu of conventional generation, along with energy efficiency and demand response.

MR. McLEOD: And just to add, I guess, you know, there's this vision of how this all gets used. But if I put a battery in today, I can't get paid for it. That's the problem, that as much as we see the future and how the utilities are going to be able to use my battery, if I put it in today, there is no mechanism, no tariff, no way for me to be paid. And that's the problem for the solar guys. They're trying to sell these systems but they can't explain to their customers what the revenue stream is going to be. All they can say is well, at some point in the future, we believe the utility will pay you for the use of your battery and it's tough to be selling a product that way.

MS. AKIBA: Can I respond to that? Well, I think that even though, right now, the tariffs don't exist, I think the structure exists. We have also said in our orders and they are open dockets, therefore I can't speak as to the status of these, but in the DER docket, we are looking at time-of-use rates, which are load shifting, which are to actually implement the self-supply and the self-supply and the self-supply of storage options that have been created under the DER docket. As well as there is still that open

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

docket from back in 2014, the demand response docket, which, in which the utilities were, and both KIUC and the Hawaiian Electric companies have been requested and instructed to submit demand response integration plans to put forward how they are going to use energy storage and demand response. And with that would be demand response tariffs that would go along with that so although the rates aren't there, again, these are being formed, these rates are being formed with input from stakeholders, maybe not the fastest way but it is a collaborative way. So our technical working groups are now meeting to discuss these issues with input from the solar industry, from distributed, you know, technology stakeholders as well, to try to see what's the best rates to facilitate these kinds of integrated tools to provide ancillary services to the grid.

CHAIR GUZMAN: Mr. Couch?

COUNCILMEMBER COUCH: I think he ...

CHAIR GUZMAN: Mr. McNeff?

COUNCILMEMBER COUCH: Mr. McNeff ...

CHAIR GUZMAN: Go ahead.

MR. McNEFF: Just for Maui Electric, I mean, Commissioner Akiba mentioned the Power Supply Improvement Plans and our efforts to plan going forward but even before that we routinely looked at energy storage. You know, on a large scale the, you know, the numbers never quite penciled out so many of our past efforts have been, you know, and our current efforts have either been small scale, you know, we have a 1 megawatt battery energy storage at our Wailea substation, we have the E-Gear customer-sided energy storage pilot on Molokai or similar to KIUC, when we have had big energy storage projects, one way to mitigate the risk is to have the developer, you know, that on the developer side. So it was mentioned both KWP 2 and Auwahi have large energy storage. So we've gone through it a number of times and found ways to, you know, work with current costs and current risk but like was mentioned, you know, we're hopeful for the time when it'll pencil out and the risk will be less.

COUNCILMEMBER COUCH: Okay, oh ...

MR. REDELL: If I could have just have one last comment?

CHAIR GUZMAN: Mr. Redell?

MR. REDELL: I'm sorry.

CHAIR GUZMAN: Yes, go ahead, go ahead.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

MR. REDELL: Energy storage is something I'm excited about.

CHAIR GUZMAN: Very good.

MR. REDELL: So, but I agree with what Mat is saying but I also think that where we need to start to work harder on is finding the value of the energy storage, looking at it more like that Swiss Army Knife that everybody shows. It says, it can do this; it can be voltage support; it could defer transmission; it could do many other things. It can't do 'em all at the same and we shouldn't be delusional, but it can do several things and if we could find those opportunities, we can be, perhaps, finding ways to be as economical right now.

COUNCILMEMBER COUCH: Okay, thank you, Chair. And one last --

CHAIR GUZMAN: Yes.

COUNCILMEMBER COUCH: --question, comment maybe, is battery storage at this point is, it sounds like what everybody's using. My biggest concern is what happens when the batteries run out, you know? What do we do, that's a lot of toxic chemicals that we've gotta do something with, and that's one of my biggest concerns with battery storage.

CHAIR GUZMAN: That's a good question. Anyone on the panel want to field this one?

MR. REDELL: Sure. I can start with that.

CHAIR GUZMAN: Mr. Redell, and then followed by Mr. Bissell.

MR. REDELL: Again, what I was pointing out to is there is more than just lithium ion batteries. There are flow batteries. Some flow battery mediums don't have a hazardous component. Some have a recyclable component. Vanadium flow batteries, you might, a structure might be useful where you just, you know, lease the vanadium from a mine for 20 years and then you give that vanadium back. So we have to look at ways where you're--kind of sounds crazy, right--but, you know, you try to make the economics work and you'll find creative ways. The, but overall, there are different mediums that are coming that are possible. Zinc air might be a good one too. Other ideas rather than just simply relying on one concept.

CHAIR GUZMAN: Mr. Bissell?

MR. BISSELL: I was just going to say, on Kauai, the Tesla Solar City project, Tesla, at their Gigafactory has a major initiative to recycle batteries. If you want to get scared about utility use, think about all the car batteries that could be out there with full rollouts. So they, at least, are looking very seriously at the responsibility to recycle the batteries and I think that'll be more the industry standard by definition 'cause otherwise, we got a major problem.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

COUNCILMEMBER COUCH: Thank you, Chair.

CHAIR GUZMAN: Thank you, Mr. Couch. Ms. Cochran?

VICE-CHAIR COCHRAN: Thank you, Chair. And I think I'm the member here that's very unique as in I don't have MECO utilities, I live totally off the grid, I have wind, rain and solar. And so, yes, I have battery backup. That's how I power my TV and my husband's massage chair when the sun's not out at night, after pau hana time. So I've been saying and, you know, Mr. McNeff and Ms. Suzuki know, I talk 'till, ever since I've been here, about backup battery, backup battery and thank you for sharing, Ms. Akiba, in regards to different mediums and also, Mr. Redell, also, that it doesn't have to be the batteries that we all are familiar with in our cars and in our motorcycles and in our, you know, flashlights and what have you. But I guess--and thank you, Mr. McLeod, nice to see you, and welcome. You brought up some interesting points and I guess this is sort of for MECO in regards to your PowerPoint. The point that fires have been created from your power lines and what have you, have you folks looked into doing some type of changes and improvements within your transmission and infrastructure in order to avoid these sparks and things? 'Cause this last fire, I didn't realize, was caught, well, from Auwahi, I guess, you said, from their power lines. I know there was others previously, some big fires in West Maui, that Fire Chief did mention it was the cause of some power lines up above, on the mountains. So, and what role or kuleana does your company play when these incidents occur, if any?

MS. SUZUKI: Okay, I'll say that we are always looking at, you know, operating and maintaining our system as best we can and it's not the intention but it does happen and we do work very closely with the Fire Department in terms of the response and we do dig in after an event to look at the root cause and find ways to mitigate the incident from happening again.

VICE-CHAIR COCHRAN: Okay. So is that like putting--I don't know, I'm not an engineer on that--but sleeves so sparks cannot trigger burns or, I mean, it just seems like that's what's been occurring, heavy winds, I mean, this hurricane is going to create some heavy miles per hour and, I guess, that friction or whatever creates the sparks, which then, you know, light up the dead brush that's on mountainsides or what have you, so. I mean, I appreciate your comments but I, it doesn't really give me confidence. I know things happen but, you know, these huge fires occur and it's been several times it's been power transmission lines that have caused them.

CHAIR GUZMAN: Why don't we ask Commissioner Akiba on the State level or the PUC level, about the standards of the responsibilities of the utilities on these type of accidents and things like that.

MS. AKIBA: I know that the utilities are required to file incident reports, whether it's accidents or telephone pole goes down or some incident, you know, that's occurring by

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

virtue of, you know, a transmission spark line. So we do keep track of that. I think, you know, the utilities are held accountable based on their metrics for safe operations and in terms of if those types of fires not only cause damage but outages as well as, you know, they take out poles, that fires. Part of that might be, I mean, you know, part of it might be vegetation management in cooperation with whatever, whoever the landowner is in which the easement of the transmission lines lie. You know, it's really hard with a brush fire but maybe some of those problems could be mitigated to an extent by more active vegetation management, either taking out the dry brush so that, you know, or creating situations where if there is a fire--I know they did use, especially in California with the drought conditions, where they've tried to manage the dry brush a bit, either chopping back or putting fire wall. They keep the brush in a way so that it burns into itself and it doesn't spread like a wildfire. They've got ways that they've make the brush kind of burn into itself so that when the firefighters come, it's a little bit more easier to control. So perhaps some of those mitigation strategies, but the utilities are required to report to us in incident reports and to explain their vegetation management, if that's what contributing to some of this if it's on an easement that they maintain, you know, in a remote area.

VICE-CHAIR COCHRAN: Okay.

CHAIR GUZMAN: Ms. Cochran?

VICE-CHAIR COCHRAN: Yeah, okay. Well, thank you. Just, we do spend a lot of money on the County level to take care of these things. And, I guess, quickly to the two large solar farms that you folks were mentioning, whereabouts are they and what stages are they in at this time?

CHAIR GUZMAN: Mr. McNeff?

MR. McNEFF: So one is located in Kihei, one is located in Lahaina. Right now they're in, I think they haven't started construction, they're getting ready to.

VICE-CHAIR COCHRAN: Okay. Lahaina, by ...

MR. McNEFF: I don't have the exact street address. I can't recall.

VICE-CHAIR COCHRAN: Oh, it's on a street? Is it going to be, is County going to be part of it in regards to maybe our wastewater, our water treatment facility, our wastewater treatment facility to utilize and tap into some of this?

MR. McNEFF: Well, the utility-scale projects will feed into the grids so everyone that purchases power will, you know, receive the benefit.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

VICE-CHAIR COCHRAN: Okay. And so do these kind of things go in front of, I don't know, the Commissions or, not, yeah, PUC but I mean, Maui Planning, us? 'Cause it's like I never ...

CHAIR GUZMAN: Mr. Redell?

VICE-CHAIR COCHRAN: I drive that road every day and I didn't know--I guess if it's up Lahainaluna, had no idea that there is some idea of this even occurring there.

MR. McNEFF: The developer is responsible for, you know, getting all appropriate permits and whatnot so I'm not exactly sure which ones are required but ...

VICE-CHAIR COCHRAN: So this is a PPA --

MR. McNEFF: Yes.

VICE-CHAIR COCHRAN: --type? Okay. And so, and Mr. McLeod knows that I went to Marin County to further study what community choice aggregates are about. And so how, do you think that there's a opportunity for us as a County or, I don't know, in the State, I guess it's state law in other areas, we don't utilize it here in Hawaii yet but some way that that can be incorporated into our system? Do you know what that is and if there's a way that we could, I don't know, utilize that concept here?

CHAIR GUZMAN: Anyone on the panel want to field that? Mr. Redell, and then followed by anyone on the panel.

MR. REDELL: Sure. I think it's another mechanism but it's been tried in many areas and sometimes its successful and sometimes not. It depends on how that entity would form, how they would actually supply that group. You can think of it like a distribution portion being taken over by that community and then supplying power that way, I guess would be maybe the best way to analogize it. But I think I would look more towards the community solar. I think that there might be ways to take advantage there better, you know, and be able to supply the power to the utility through the utility lines and then back and to see savings to those residents.

VICE-CHAIR COCHRAN: Okay. And so for people who, community choice aggregation is a program that allows cities and counties to buy and/or generate electricity for residents and businesses within their areas. And as in Marin, the transmission, the meter reading, what have you, is all done by PG&E and then the community, it's like, you're kind of like KIUC in a sense where the people who purchase, the monies goes back, it's nonprofit, the monies go back into it to improve and expand and they have different choices of how much renewable energy they want to buy. And, it's, prices can be high but the people are looking at it as a sustainable, renewable type of way of getting energy to their homes and businesses. So, I mean, as in MECO, you're not in the farming business, you know, with the release of a lot of these ag lands. Perhaps

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

County, you know, OED, farming, agriculture, what have you, can create a, you know, different kind of field choice as in agriculture and then somehow, you know, make it into an energy for you to purchase from us or, I don't know, some type of community cooperation, collaboration of sorts, in a way just to...or have you been looking into all these open up fields that are occurring and somehow, you know, looking into producing a type of crop or anything to help, you know, offset your oil needs?

MS. SUZUKI: I mentioned earlier that we're working with HC&S because they're interested in keeping their land in agriculture. So to the extent that bio crops, so some crop-to-energy type of arrangement or crop-to-fuel works, I think we'll certainly be looking at that. And to address your model that you're talking about, I think we certainly are interested in looking at that as another customer option because as Commissioner Akiba said, yeah, we are, in their inclinations, they did state it, but we have been looking at different ways to provide customers choices in terms of using energy and maybe even pricing and all that. So it's really a diverse mix of resources and customer programs, distributed resources, centralized systems that I think will be part of our future.

VICE-CHAIR COCHRAN: Okay, well, very good. Looking forward to further discussion on that. I think for our Energy Commissioner on the County level, you're, one of your PowerPoints is in regards to wells, PV, battery, inline-hydro, efficient pumping systems. What is, the inline-hydro, what is that exactly? Is that --

MR. REDELL: Sure.

VICE-CHAIR COCHRAN: --electricity generated from hydropower?

MR. REDELL: It's just simply that, you could imagine, if you were pulling water uphill out of the ground and then were to bring it down to a lower elevation, you could just simply throttle that with a valve or you could reduce its energy or reduce its head by running it through a turbine that's in line with the pipe and give you the opportunity to then extract that energy back out, the energy that it has, because of the elevation it's coming down. And so it's really, in this sort of configuration, would be to, since the well would be pumping and then they hydro portion would be producing at the same time, it would really, just to give you a better efficiency of the overall system.

VICE-CHAIR COCHRAN: And so are you looking to incorporate that at any particular area at this time or it's just an idea you're tossing around?

MR. REDELL: The water supply group is looking at new projects in the Lahaina or the Mahinahina area and they're looking at what options are there for new wells.

VICE-CHAIR COCHRAN: Right answer. Very good, I like that. Thank you. That was my next question. And lastly, Chair, if you don't mind?

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

CHAIR GUZMAN: Sure.

VICE-CHAIR COCHRAN: The JUMPSmartMaui, Ms. Skog, I thought the, and all the electric vehicle charging stations, which Mr. Couch takes advantage of a lot, are going to, they're going to stop the funding on it 'cause this whole trial thing, right, isn't that? And then, if so, who's going to be paying the bill and how's it going to continue?

MS. SKOG: The demonstration--it was a demonstration project and it was always slated to end at the end of February 2017. They are looking at sort of a next step from that, outside of the demonstration project, where it might become more of a business, but they are not, they're really trying to keep the assets here. They recognize that it is, become very foundational to going into EV in Maui and contributing to that whole community. So they're trying to work out right now how to make it possible for the assets to remain here and we're trying to help with that as well.

VICE-CHAIR COCHRAN: Okay, alright, well, very good. And thank you. Thank you, panelists, for being here and we'll hope to talk more. Thank you, Chair.

CHAIR GUZMAN: Thanks, Ms. Cochran. I'd like to recognize the presence of Councilmember Riki Hokama and you have the floor, Mr. Hokama.

COUNCILMEMBER HOKAMA: Chairman, thank you. And I listened intently to the testifiers as well as the panel's presentation so I appreciate your efforts, Chairman, this afternoon. Couple of things, particularly the perspective from either the, our Commissioner, Ms. Akiba, or maybe MECO, one of the advantages I've had over the last few years is to sit down with Dr. Moniz. Dr. Moniz is Secretary of the Department of Energy for the United States and in his discussions that we've had with him regarding moving forward with alternatives and renewables, he had expressing, he's not a bureaucrat, he's basically an academic, smart academic, practical academic, looks like Benjamin Franklin. The doctor was interested in working with counties in moving forward to make America more independent but his approach was going to the manufacturers, the tech companies, and have them drive the innovation and efficiencies in providing better pricing to the American public. In my discussions with him and as I understand it, part of that was competition. Hawaii, we have basically a different type of competition because by commission, we have one utility that is guaranteed a return of investment. So hearing some of your earlier comments, panelists and the commissioner, is Hawaii going to change the structure of monopoly and welcome competition, since you guys talk about customer choices a lot, or are we going to continue to go with the monopolistic structure that we've had and continues to give us both advantages and disadvantages? What do you think, Commissioner?

CHAIR GUZMAN: That's a good question. Why don't we start with and go down the line? That's a very good general question. We'll start with Commissioner Akiba and then go right down the line to, ending with our own Energy Commissioner.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

MS. AKIBA: Thank you, Councilmember Hokama. I think there are two ways that competition exists now in the current situation. As we mentioned earlier, I mean, the competitive bidding framework, which I, in one of our recent orders we said also needs to be revisited and refreshed, and we talked about that in terms of the RFP process, which even KIUC uses in terms of getting request for proposals from private third parties that develop projects or can then sell, you know, electricity or storage combined types of resources to the utility for grid purposes. So the RFP process, which, competitive bidding framework, which was part of the Hawaii Clean Energy Initiative before I even got to the Commission, still exists. There's a competitive bidding framework, independent power producers are able to come and provide, you know, development projects, third-party projects, to provide generation. With respect to some of the distributed energy resources, I know that recently there's been other third parties that are providing demand response, which is the integrated grid of the future, the things that Dr. Moniz talks about, the technology companies like Stem, Geli, some of the third-party folks like Enphase are trying to reach out through customers, on the customer side of it, to provide a different alternative for resources and ancillary services to the grid. So that already does exist. I think your fundamental question is really one for the Maui community to answer for itself but currently, under law, the utility, as was pointed out earlier in the panel, has the franchise, the electric franchise. It was granted by the King Kalakaua, over 100 years ago and for MECO, 95 years ago and that franchise exists, it's part of the regulatory compact. While they are an investor-owned utility, an investor-owned monopoly, part of that is the regulatory compact that they must serve all customers and do so in the public interest at just and fair, reasonable rates. And that's what the Public Utility Commission oversees and reviews and makes sure that they're held accountable for. But there is a franchise. It is under legislative creation. It was created by the Kingdom of Hawaii. It exists and it is the reality we deal with. There is still room for competition within that structure through the competitive bidding framework and I think the third-party partnering is something that hopefully, the innovators, and I know that Secretary Moniz is a very strong supporter, as are many of the large customers here in Hawaii, the Energy Accelerator, which Hawaiian Electric itself is a key stakeholder in and MEDB, and that's where the innovation comes from, is these companies that come with new ideas to provide new resources, new types of technology, you know. And, in fact, Stem was one of those companies that were funded by the Energy Accelerator to come up with the software technology, the system that allows customers on their side to have storage, renewable energy whether it's, in the case of Stem's projects, their PV, and to provide that to the grid as an ancillary service. And that before, I mean, five years ago that didn't exist. So technology innovation comes from outside the utility, from outside the franchise but it's still within the current structure, able to be incorporated in through demand response programs and through RFPs and the competitive bidding framework. But that is the existing structure unless the Legislature or someone else makes a change to that and that is what we oversee in the public interest.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

COUNCILMEMBER HOKAMA: My concern, you know, with innovation and everything else, Commissioner, and we deal with it as a County, is, again, what is your base infrastructure and its status? So we can try and embrace all the innovation we like but if the basic infrastructure, and let's say it's our transmission grid, is still prehistoric and unable to capture the innovation, what good is the innovation since it cannot be implemented on such, and possible archaic or old system that cannot handle the new demands of 21st Century? So part of that is, where are we with our existing infrastructure? Because we keep hearing that we're at the cap, we cannot have any more solar projects or additional independent PPAs because we've reached capacity, whatever that may be. Is it because of the current type of infrastructure that's in place and we're not willing to invest in 21st Century infrastructure? I don't know. But as being the biggest customer for Maui Electric, the County of Maui, and trying to find the revenues to pay all our bills, I have a concern. So that is one of the areas, I don't expect an answer 'cause it's a more rhetorical question, but what I would like, I'm interested because we haven't heard, or I didn't hear and I apologize if you did mention it, but nobody has talked about the challenges to reaching the renewable goals. And for me, one of the things that I find interesting by DOD initiative is what our military is doing in Hawaii. They're doing their own energy projects. My understanding from DOD is that they're going to be independent and separated from the civilian grid. What does this mean to our renewable goals? And, if any, does it impact Maui County since the majority of infrastructure is Oahu, with Pearl Harbor, Hickam, Schofield, Wheelers? I don't know. But overall, does it impact us as rate payers in this County of what DOD is doing? And is DOD our backup in case the civilian grid fails? Do we get to tie into the military grid?

CHAIR GUZMAN: Is there anyone on the panel--that's more than a compound question--but anyone want to make any comments?

COUNCILMEMBER HOKAMA: Well, it's just a challenge, Chairman --

CHAIR GUZMAN: Yeah, yeah.

COUNCILMEMBER HOKAMA: --that if we have people, our experts --

CHAIR GUZMAN: Yes, yes. yes.

COUNCILMEMBER HOKAMA: --can give us some information --

CHAIR GUZMAN: We can either break that down ...

COUNCILMEMBER HOKAMA: --or even help us be better educated, I would appreciate that.

CHAIR GUZMAN: Okay. Mr. McLeod, you want to take an attempt?

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

MR. McLEOD: On the military side, you know, their idea has been microgrid. So, and we had a couple people use that terminology. So what they're really planning to do is that they can power military operations. They're not planning on being generally an exporter, maybe in emergency for a little bit but, you know, their model and why it affects competition though is just in terms of cost. So once enough people are putting in these systems and people start getting a comparison between what it costs to make the power and store it, you know, then you will see competition going forward.

CHAIR GUZMAN: Ms. Suzuki?

MS. SUZUKI: Chair, can I address the comment you made about is it going, or question, is it going to affect Maui County?

COUNCILMEMBER HOKAMA: Yes.

MS. SUZUKI: Well, right now, Maui Electric has separate rates and tariffs--or tariffs, we call it that, right--the separate rates from Hawaiian Electric and Hawaii Electric Light, so it would not because it's generally Maui Electric customers pay for Maui Electric services.

COUNCILMEMBER HOKAMA: Well, that's good that you shared that with our community. I appreciate that, Ms. Suzuki.

MS. SUZUKI: And to address your, are we looking at or, you know, doing something about the existing grid. Yes, we actually have an application with the PUC to install new technology, advanced metering infrastructure or a, smart grid technologies to give us greater capability to be able to provide customers more information about how they're using electricity and to have two-way communication. Right now, we send power to, you know, the different locations and we don't necessarily know if one, if you have PV, if it's sending power into the grid or whether you're consuming from the grid, right. So we are, we have that before the Commission right now.

COUNCILMEMBER HOKAMA: That's for Maui island?

MS. SUZUKI: We are looking at investing...it's across all Hawaiian Electric family of companies.

COUNCILMEMBER HOKAMA: So it's for all the islands? Or is this basically now for Maui Island only?

MS. SUZUKI: No, for all islands in our service territories.

COUNCILMEMBER HOKAMA: Okay.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

MR. McNEFF: Some infrastructure upgrades that we have for Maui Island specifically are, we have two substation projects that are planned to go in service next year and that's to meet the growing load on Maui. We also have some transmission line upgrades planned for a little further out, after next year, to upgrade some of the transmission lines associated with our plans to retire Kahului Power Plant.

COUNCILMEMBER HOKAMA: Okay. Since we have the two of you from our electric company, one of the things that I look forward to, are you aware of the 12 conditions of zoning approval Council gave to your company regarding the Waena request?

MS. SUZUKI: Yes, we file an annual report to, related to that.

COUNCILMEMBER HOKAMA: Right. And so we appreciate, and, you know, I'm sure when appropriate, Chairman Couch of his Committee will consider having that discussion. But one of your conditions that the Council put on was that half of the acres, more or less, of the 65.7 acres, was to be used for alternative energy projects. Can you give us a comment on what were their projects and what was your outcomes?

MS. SUZUKI: So the need for using that property has not, or has kind of been deferred over time. We, Mat just mentioned that we have plans to retire Kahului Power Plant and that's looking like in the 2022, 2023 timeframe. And so we are waiting for the Commission to open a proceeding to start our RFP process for new generation and that property could be the site for that new generation and, of course, you know, that 50 percent needs to be used for renewable technologies.

COUNCILMEMBER HOKAMA: Would you know how many megawatts you currently producing from the site? Or are there any generation currently on ...

MS. SUZUKI: There's no generation on that site. It's still vacant.

COUNCILMEMBER HOKAMA: Okay, because we put a cap of 66 megawatts on the acreage and then you would need to come in and ask for a revision or amendment to the ordinance regarding the total amount of electrical output or if you want change some of the uses of the property that we agreed to in 2000 for this approval. So I'm looking forward to your meeting that Mr. Couch can hold regarding your report because I think, you can share a lot of information about the successes. And I think failure is not bad 'cause we learn from it. So if you've been trying to do things to improve our situation on this County, I don't have a problem with some failure too 'cause I think that's a learning curve. But my other thing that I would ask of you, and I found it interesting from Mr. Bissell, about the rates, how do approach your capitalization requirements as well as your minimum cash flow savings you need for your so-called rainy day requirements being, you know, a small public co-op utility?

MR. BISSELL: We're different than an investor-owned in that we're not earning a return on our rate base. We earn a multiple of our interest expense is what our lenders want to

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

see. So we don't get rewarded necessarily through...in an investor-owned, the more rate base you have, the more return on equity you can earn and they're right, you have to earn it but it's a, the regulation is incentivized, putting more rate base into service, whereas a co-op, we have to earn our, an interest and earn a minimum amount to keep our lenders happy but we don't really have any incentive to put more into service. We focus--and they do as well, but it's slightly different--you know, we focus on the bottom line on rates is what we're pushing for and, you know, we hear it every day from our members out on the street that, get the rates down. We just did a customer survey, which it's proving quite a bit on Kauai, this year over last year but, of course, rates are staying down so our elected board, very, very sensitive to rates, we're looking at rates every day. And going back, I've been anxious to go back to your prior comment about competition, and we look, is we have competition in Kauai. I think in the State of Hawaii we have competition now. It's not necessarily in the other businesses stringing lines but it is in technology, it is the new technologies coming in and you simply can't operate as you used to. If you think that working as a utility of 20 years ago is going to keep you in business, whatever the form is, you're wrong. There's a lot of alternatives out there now. When the utilities that have the franchises have to make sure that they have the best value or long term, we're not going to be in business. And there's a lot of advantages to a utility with a franchise. We have the grid, we have the scale and PV is much cheaper at utility scale, batteries are much cheaper at utility scale. There's an awful lot of advantages we have but we gotta continue to focus on cost control, focus on working with these smart high tech companies to bring the best technologies in the best way that we can for the people in the State or we won't be in business. There is that level of competition.

COUNCILMEMBER HOKAMA: I appreciate your comments. Thank you very much. Chairman, I know it's been a long day so thank you for my opportunity.

CHAIR GUZMAN: Thank you. Members, seeing that there's no more questions, I have the final say in terms of the questions. So we'll just go down the line and you can either respond to one of the two questions, or at least subject matters. One is the Power Supply Improvement Plan and integrated independent power. So maybe a 2-minute or 1½ minute, or, let's just keep it short, 1-minute conclusion and your response to those two subject matters. Just pick one of the two. Okay, we'll start from, we'll start with our Energy Commissioner down on the right side, your left.

MR. REDELL: Thank you. I think it just goes back to what was mentioned about competition and when you're looking even at both of those you're trying to find out how can you bring more competition to, not only to just drive the price down but to have something that's different or something that is unique. And in speaking with others, the point is that we don't know what's going to be in 30 years so planning today as if we're delivering energy in a certain way is hard to arrive at that result. If somebody said 30 years ago that they wanted to sell you a, you know, a camera on your phone and it's also going to be a recorder, it could be your word processor, it could be, you know, everything, maybe soon it will also tell you when your refrigerator

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

and your dishwasher should run, you wouldn't, you'd say well, that's just weird, I don't know what that is, I don't know what you're selling me. But to plan for that today is nearly impossible. You could imagine in 30 years that yes, that wires don't even matter, it's so cheap that everybody could somehow, with some magic device, if you will, you know, generate their own power and store it. And so I think when we get to this Power Supply Improvement Plan and looking at whatever structure might oversee this, we have to take into account that future, that it's, that we need take steps now that don't link us to the idea in a power supply improvement plan, that we're locked for 20 years or 30 years paying for something when in 20 or 30 years it can definitely be different.

CHAIR GUZMAN: Thank you. Next is either Mat ...

MS. SUZUKI: Mat.

CHAIR GUZMAN: Mat McNeff, if you'd like to conclude?

MR. McNEFF: Okay, thanks. With regards to the Power Supply Improvement Plan, you know, we're definitely going into it trying to earn our customers', you know, business. We're going in there believing that there's lots of competition. We're trying to get as much stakeholder input as we can so we can move the State forward in a way that everyone feels is best and is best for everyone. And...what was I going to say...well, yeah, that's mainly it, you know, we're trying to make the least regret decisions early on, sort of give us the most options later on when new technologies come along, we're not locked into decisions, you know, that we made ten years ago. So definitely trying to keep an open mind and do the best we can for customers.

CHAIR GUZMAN: Very good, thank you. Mr. Bissell?

MR. BISSELL: In regards to the power supply improvement planning process, I just want to say I think we're lucky to not be on Oahu in terms of pricing and renewable energy potential. Kauai, the Big Island and Maui have great resources to help stabilize our pricing long term. It's a much bigger challenge, in my opinion, on Oahu. And I'll be fascinated to see what they do over there to try to control costs and set themselves up to meet the renewable standards. It's magnitudes harder over there than it is for us. So we're lucky, we can be happy to be on the smaller populated islands.

CHAIR GUZMAN: Thank you. Ms. Skog?

MS. SKOG: What I would say, certainly for the community engagement side of it, is it'd be nice if it came up with a lay version of the Power Supply Improvement Plan. We have got to bring our residents along with these major decisions and directions that we are trying to implement. And they want to know, they want to know what's going on. I mean, here we are, we're certainly much more informed than they are but we are still all struggling with it as well. So can you imagine what they're struggling with, trying

ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE, AND RECREATION COMMITTEE

Council of the County of Maui

August 30, 2016

to understand? So my concern is that if they are not informed, that it could lead to them either advocating or making poor choices and that would not be good for any of us. So I hope that as this Power Supply Improvement Plan goes forward, there is a way that public outreach is taken into consideration to make it, you know, something more understandable to the lay person. Thank you.

CHAIR GUZMAN: Thank you, very good. Mr. McLeod?

MR. McLEOD: I guess I'm not a huge fan of the Power Supply Improvement Plan and I guess two main reasons. Number one, I think that a lot of the choices are driven by something called stranded cost and one of the early testifiers mentioned that, that, you know, the choices about when to retire the unit seem to always coincide with when the depreciation ends. So it doesn't look like the planning was what's best for the community, it was, you know, what's going to solve that problem. And, you know, the other piece of it is, the PSIP still presumes that we are selecting all these technologies going out to the future rather than going out to the market and saying we want to buy 50 megawatts of renewables, what's the best price we can get. We're still at that stage, we're trying to say, what is gonna supply the power rather than, you know, what's, what is the market, what can you provide.

CHAIR GUZMAN: Thank you. And Commissioner Akiba?

MS. AKIBA: Yes, I don't know if it's working. Oh, here it is. *(Note: She turned on the microphone)* I'm going to have to, with a caveat, Chair Guzman, as I did indicate to your staff, the PSIP docket is an open and pending docket before the Public Utilities Commission so I cannot either comment, either as an individual commissioner or on behalf of the Commission. So I would, you know, hope that this, I know Council and the Council Chair have respected that but I would just say about the process that it is proceeding, technical working groups are being formed to get the kind of community input and stakeholder input and that is an important part of the process before the Public Utilities Commission. So just wanted to inform the public of that, that's something they could, they know from our, at least an order that was issued, but other than that, I'm not able to comment and I thank the Chair.

CHAIR GUZMAN: Thank you. So, Members, I thank very much the panel. It was a wonderful discussion. It's something that, it's, that we can, you know, move forward on on some of these subject matters. So I'd like to thank Commissioner Akiba, Doug McLeod, Jeanne Skog, David Bissell, Mat McNeff, Sharon Suzuki, and Fred Redell for graciously giving us a lot of information and having a very healthy discussion. And thank you, Members, this will conclude our agenda for today.

ACTION: DEFER.

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**

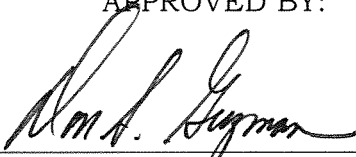
Council of the County of Maui

August 30, 2016

CHAIR GUZMAN: The EAR Committee is now adjourned. Thank you. . . . *(gavel)* . . .

ADJOURN: 4:21 p.m.

APPROVED BY:

A handwritten signature in black ink, appearing to read "Don S. Guzman", is written over a horizontal line.

DON S. GUZMAN, Chair
Economic Development, Energy,
Agriculture, and Recreation Committee

ear:min:160830:alp

Transcribed by: Annette L. Perkett

**ECONOMIC DEVELOPMENT, ENERGY, AGRICULTURE,
AND RECREATION COMMITTEE**
Council of the County of Maui

August 30, 2016

CERTIFICATE

I, Annette L. Perkett, hereby certify that the foregoing represents to the best of my ability, a true and correct transcript of the proceedings. I further certify that I am not in any way concerned with the cause.

DATED the 25th day of September, 2016, in Haiku, Hawaii.


Annette L. Perkett