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CALIFORNIA ENERGY COMMISSION
LITHIUM VALLEY COMMISSION

In the matter of,	)	
	)	
Lithium Valley	)	Docket No. 20-LITHIUM-01
Commission Meeting	)	

IN PERSON AND REMOTE VIA ZOOM VIRTUAL MEETING

Primary Location:
Calipatria High School Library
601 W. Main Street,
Calipatria, CA 92233

Secondary Locations:
California Natural Resource Agency
2nd Floor, Room 2-310
715 P Street, Sacramento, CA 9581

Franklin Public Library
32455 Franklin Rd, Franklin, MI 48025

1 Norumbega Dr, Camden, Maine 04843

Los Angeles Cleantech Incubator
525 S. Hewitt Street
Los Angeles, CA 90013

THURSDAY, JUNE 30, 2022

1:00 P.M.

Reported By:
Elise Hicks

APPEARANCES

Lithium Valley Commissioners

Steve Castaneda
Miranda Flores
James Hanks
Ryan Kelley
Silvia Paz
Alice Reynolds
Frank Ruiz
Jonathan Weisgall

CEC Staff

Deanna Carillo
Erica Loza
Jasmine Prezeau

Presenters

Derek Benson, EnergySource Minerals
Jon Trujillo, BHE Renewables
Jim Turner, Controlled Thermal Resources
Michael McKibben, UC Riverside

Public Comment

Ken Wuytens, United Way
Michael Marizow (phonetic), Brawley, CA
(INDISCERNIBLE) Romero, Comite Civico Del Valle
Maria Nova-Froelich, Calipatria Mayor Pro-Tem &
Director, Family Resource Center
Janira Figueroa, Comite Civico del Valle
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P R O C E E D I N G S

June 30, 2022 1:04 P.M.

CHAIR PAZ: Hi everyone. Welcome to the Lithium Commission meeting. Again, today we are continuing to meet both in person and through Zoom. We are providing interpretation services in Spanish for attendees at our location here in Calipatria, and those participating through Zoom on their computers or tablets. The Zoom interpretation function does not work for attendees who are only joining by phone.

A representative from the CEC will now speak in Spanish to inform our Spanish-speaking audience how to use the service.

Erica?

MS. LOZA: Buenas Tardes. Me llamo Erica Loza.

Daré instrucciones a aquellos, a aquellos de ustedes que quieran escuchar la reunión en español. Hay un intérprete disponible a través de la plataforma Zoom. Para unirse al canal en español, haga clic en el ícono de globo pequeño en la parte inferior de su aplicación Zoom. Seleccione el canal donde dice S-p-a-n-i-s-h. Luego haga clic en la frase siguiente donde dice mute "Mute Original Audio" para silenciar el audio original.

Si tiene preguntas o si gusta hacer algún comentario, favor de oprimir el icono de la mano alzada

y abierta o envíenos un mensaje en español a través de la función de preguntas y respuestas para ayudarle.

Back to you, Chair Paz.

CHAIR PAZ: Thank you. So, to ensure that all members of the public have access to the meeting under the Bagley-Keene Open Meeting Act, the additional publicly accessible locations will remain on the English channel for the entirety of the meeting, preferably with cameras on. And then CEC staff, can you please review the general instructions?

(Pause)

MS. LOZA: This is a hybrid meeting, with a primary physical location here in Calipatria, and additional publicly accessible locations connected via teleconference in Sacramento, and Los Angeles California, Franklin Michigan, and Camden, Maine. The public can also access the meeting through Zoom as described in the meeting notice.

The meeting is being recorded as well as transcribed by a court reporter. The transcript will be posted to the docket. The recording of the meeting will be available on the Lithium Valley Commission webpage. The Spanish interpretation will not be recorded or transcribed. The presentation materials of the meeting will be made available through the docket in English and

Spanish versions after the meeting. Please note that the Spanish version may post a few days after the English version.

Members of the public connected via teleconference will be muted during the presentations, but there will be opportunities for the public comment at times throughout the meeting. For public commenters, we will ask you to spell your name and state your affiliation if any. However, you may remain anonymous if you choose.

There is a Q&A window in the Zoom application which you can use to type questions and comments and staff will relay these comments as appropriate. For any comments made in Spanish, the interpreter will render these comments into English for the non-speaking —— non Spanish-speaking participants, and to ensure those comments are included in the record and the transcript.

The presentation materials from the meeting and workshops today will be made available through the docket in English and Spanish versions after the meeting. Please note that the Spanish version may post after—— may post a few days after the English version.

Next slide. Okay.

Public comments can be submitted at any time through the e-commenting system accessed through the

Lithium Valley Commission webpage. For more information on the Lithium Valley Commission, you can access the webpage as shown here. You can also review all the materials submitted through the docket at the link provided below the website address which can also be found on the webpage as well, and on the slides.

Back to you Chair Paz

CHAIR PAZ: Thank you. Let's move to the roll call. So, although we are now meeting with publicly accessible locations as well as Zoom, Commissioners are required to attend at the physical locations provided in the Notice for the meeting, with at one Commissioner at the primary physical location. I will ask the CEC staff to call the roll of the Commissioners, and when you answer, please indicate which location you are attending from, for the record.

I will also note that we do not anticipate a Commissioner to attend the meeting at the Los Angeles location, but that location remains available to the public, so I will be calling on the room host at times to identify any public participants in attendance and wishing to speak.

Erica? Roll call please?

MS. LOZA: Commissioner Castaneda?

COMMISSIONER CASTANEDA: Here, Calipatria.

MS. LOZA: Commissioner Colwell?

Commissioner Dolega?

Commissioner Flores?

Commissioner Hanks?

COMMISSIONER HANKS: Here, Calipatria.

MS. LOZA: Okay. Vice Chair Kelley?

Commissioner Lopez?

Commissioner Olmedo?

MS. LOZA: Chair Paz?

CHAIR PAZ: Here, Calipatria.

MS. LOZA: Commissioner Reynolds?

Commissioner Ruiz?

Commissioner Scott?

Commissioner Soto?

Commissioner Weisgall?

COMMISSIONER WEISGALL: Present, in Camden Maine.

MS. LOZA: Okay. We have four Commissioners present.

CHAIR PAZ: Thank you, so we do not have a quorum at the Noticed physical meeting locations at this time. We will not be able to consider any motions or take a vote unless we have a quorum. We will continue with our agenda, discussion, and workshop as planned. If any Commissioners arrive, please be sure —— I will be

noting the time when they arrive.

And so next slide.

The agenda is also printed, I think, in the front, right? I know the screen looks really small. But, some, like I mentioned, because of the lack of quorum, we will be deferring some items for the next meeting.

Next slide, please.

I also want to, before we move on, I want to take a moment to review expected conduct during our meetings. This is a public business meeting of the Lithium Commission to conduct its business. We welcome and encourage public participation. There are public comment periods throughout the meeting for the public to provide comments.

The public comment period are not question and answer sessions, and also comments must be relevant to the agenda item when noted. Or, during general comments, should pertain specifically to the work of this Commission. We welcome you posting any questions for the record, however neither Commissioners nor panelists are required to answer questions in this forum.

I also want to acknowledge that after our last meeting, some concerning events took place involving one

of our Blue-Ribbon Commissioners being inappropriately approached as they exited. So, I do request that we all exercise some caution when we leave our meetings.

I'm also going to ask my fellow Commissioners to keep their comments to remain to the topic at hand, provide space for other voices, and to avoid redundancy of topics we've addressed so we can address the communities request to shorten our meetings.

And the way I will be monitoring that, as I started in the last meeting, is that each Commissioner will speak once and we're both here, and then take anyone from Zoom, or via Zoom, and if there's still time for us to get a second chance of Commissioner comments, then I will return to us.

(Pause)

There are some items on the agenda, like I mentioned, that will be deferred, and I'll note those when I get there. So, again, this is one of the items, the Administrative Items are going to be deferred.

So, next slide.

(Pause)

We do have a discussion noted here on the California Budget Proposal related to Lithium Valley. I know Vice Chair Ryan Kelley was going to be leading that discussion. He's not here, so I will come back to that

discussion maybe after the workshop. But since I didn't hear that he was going to be absent. So, he might be running late.

So, next slide. I will be taking this out of order, there we go.

So, we're now going to move into our workshop. Continuing our exploration of potential environmental impacts related to Lithium Extraction Activities. In prior workshops on this topic, we received presentations on the CEQA process with some details about CEQA findings for the EnergySource Mineral ATLiS Project. We have discussed some potential impacts and heard from the community and technology experts on certain topics.

Today, we've asked the developers to join us to discuss their projects, and I have prepared some questions related to waste water, solid waste, and hazardous waste streams to guide our conversation. We have also asked Dr. McKibben to return to share his understanding of direct lithium extraction technologies on the same topics. We asked a few regulators to attend, but they were not able to participate, given our schedule.

So first, I want to thank the panel for attending, and offer them each two to four minutes to introduce themselves, talk about —— talk about their

roles, and for the developers to share the status of their projects. Then, we will move into some questions.

We will start at the corner. If you want to introduce yourselves? Derek, and then —— yeah, what your role is with the organization. So, you have two to four opening remarks period.

MR. BENSON: Thank you. So, my name is Derek Benson, I'm the Chief Operating Officer for EnergySource Minerals. So, that is a development company. We are looking at constructing a 20,000 ton per annum project adjacent to John Featherstone Geothermal Station. So, that's the one that came online in 2012, so the nearest one out in the field.

So, in terms of the status of that project, we've done most of the engineering. If you guys are aware, we've gone through the CEQA process, which is relatively comprehensive. And, I realize this is not the forum to talk about tax, but when we talk about status of the project, that's introduced a bit of a uncertainty around all the very next steps that are coming, including finance, construction, and execution. So, I don't quite know what the impacts are going to be, but there definitely are scheduled impacts and risks that have now emerged that we have to, kind of, fully digest and, and evaluate.

So, we recognize, you know, people have referenced, you know, trying to spot prices and this shouldn't be a big deal. But, it does add its significant operating costs, and, you know, when you're looking at 20 and 30 year investments in the 100's of millions of dollars, the investors, you know, need some certainty to meet an understanding, and we don't have that today.

We'd love to build the project, but, you know, we have to evaluate that and, you know, before we move forward. So, that's kind of where we are today, you know, but we've done a lot of the work, we certainly are far enough along that we can talk about exactly what project benefits may be, what project, you know, processes are, and you know, happy to participate in this forum. But, just for the, the sake of candor, we have uncertainty we didn't have a few days ago.

CHAIR PAZ: Thank you. We appreciate the candor. Let's go to the right.

MR. TRUJILLO: Hi. Jon Trujillo, with Berksh—— BHE Renewables and also known locally as CalEnergy. I am the Geothermal Development Director, also s—— doing some secondary support to the lithium development projects that, that we are working on. I've worked with the facilities predominantly on the subsurface, but also

with the surface facilities and operations at CalEnergy for the last 13 years.

When it comes to lithium, we, we have constructed our lithium recovery demonstration facility. We're looking at constructing a second phase for taking the, the lithium chloride solution and then converting that to a battery-grade product. So, as far as development goes, we're, we're beyond a pilot approach, we're, we're testing at a demonstration scale, which is about 100 gpm. And, in partial support by the California Energy Commission, so thank you for that grant supporting that work.

And, our goal there is to understand the operations, the process at that scale, and ensuring that we're able to perform the same task of recovering lithium at a commercial scale as long as we can do that in an enviroly—— environmentally friendly manner. And an economically viable manner. And then, of course, a safe and successful manner.

CHAIR PAZ: Thank you.

MR. TRUJILLO: Thank you.

MR. TURNER: Hi, good afternoon. I'm Jim Turner, I'm the Chief Operating Officer for Controlled Thermal Resources. And we're developing the Hell's Kitchen Lithium Project out at the Salton Sea. First of

all, I, I echo Derek Benson's comments on tax. That's, that's provided a, an uncertainty that we hadn't planned for in the early stages of our development. And, we think it'll have a, a significant impact on our underlying economics to this project.

Our project is in the development stage. We are through most of our engineering, we're in to scheduling issues for construction, the early stages of procurement for construction. We are a little bit behind on, on timing from EnergySource, that —— they'll definitely be the first ones out with product. We're all cheering for them. And, I'm sure they're going to be successful, but it's good for the entire Lithium Valley.

And, our plants are a little bit different, in that we're greenfield. So, we'll be constructing our power plant portion of that as an integrated facility with the lithium. And, we're glad to be here, and we're ready to, you know, get something in the field.

CHAIR PAZ: Thank you, Jim. Dr. McKibben?

DR. MCKIBBEN: So, I'm Michael McKibben. I'm a Research Professor at UC Riverside. By training, I'm an economic geologist and geochemist. I've been working on the Salton Sea geothermal field since the 1970's. I'm a —— considered a third-party expert. I do federally

sponsored research on studying and characterizing the lithium resource of the geothermal reservoir, its sustainability, and its environmental impacts.

That requires that I interact with the geothermal companies and take —— occasionally obtain samples from them. But, for the record, I do not do consulting for these three companies. And I do not own stock or control stock in them.

CHAIR PAZ: Thank you.

Next slide, please.

So, Derek Benson, we will start with you. Can you please share a description of materials that will be transported to your facility, the Atlas Project, what is produced, and what is transported from the facility, including waste and products?

MR. BENSON: Alright. That's, that's a bit —— so, I think it might be best to start at the back. Kind of work, work our way up through the process. But we're proposing to make lithium hydroxide. So, that is a, that is the product. It's a, it —— and as a monohydrate, which means one water molecule attached to the lithium hydroxide.

So, 20,000 tons of that product is, is the, you know, design capacity of the facility. So, for those, kind of give you a sense, you know, giga-

factories have become somewhat of a unit of measure. Think of it maybe like a third, or a half of a giga-factory, in terms of, of product material. And that ultimately gets used in to, you know, cathode production.

So, to take lithium, which is in the ground as a chloride in solution, just like sodium chloride is, you know, a salt, lithium chloride is a salt. So, we have to convert it. So, there is a hydroxide conversion that happens at the end. So that's, you know, one of the chemicals that you would get added in the conversion.

And, and just upstream of that, brines —— kind of state of the industry technique is to convert chloride to a carbonate first, and then do a conversion. So, we'd do that as well. So, we, we have a, you know, sodium bicarbonate step that's in there as well.

So, that's another product that's in the industry, lithium carbonate. But, the, the off-takers that we are in discussions with, the preference is for the hydroxide product. So, we add that incremental step and, and make what they want.

So that, that gives you a sense of, you know, at the very end we're converting chloride to, to hydroxide. What we do in the middle of the plant, is an

EnergySource Minerals, sort of proprietary technology approach, and that's kind of the heart of the facility where we separate that lithium chloride from the other salts that are present in geothermal brine. Predominately sodium, a lot of calcium, potassium. You know, we jokingly say it's, it's everything in the periodic table except gold, silver, platinum, the really, really good stuff is not there.

But, that's what our technology does. It uses adsorbents. And so, it's a class of technologies. Adsorbents work and, and not to make it too technical, think of it like a sponge. It has a surface area, it, it attracts the lithium, and then we remove the lithium from it. So not, not dissimilar from loading a sponge and squeezing it out. And, and, you know, separating the lithium from the other salts. So, that's, that's a piece of technology that works well here, with elevated temperatures and very high, what we call dissolved solids. And so, there's a lot of, a lot of salts in that, in that water.

This is a technology that we are working with others around the country and around the world to deploy. So, it's, it's proven to work very well here. And, it's proven to work in a number of other applications. So, that's a class of technologies, you

may hear others talk about, you know, ion exchange or what have you. Adsorbents are proven, and the way we get the lithium off is with a little bit of water. That water ends up reporting to the product. And, we recover all that and recycle it. So, it's —— the separation of lithium from the others is a relatively benign process with our technology.

And then up front of that, we have to take care of the brine. Some of you have probably been on the tour. Geothermal brines come out of the ground a little bit brown. They need to be cleaned. So, we do a cleaning step on the front end. So, we, we —— we were talking about, you know, what are, what are some of the other products. There's a lot of silica, sand. We have to get that out of the way. And then there are some other metals.

They're a challenge. To be frank about, you know, economic recovery. But, that's what we're, you know, looking at exploring ways to upgrade some of those. But, the project, kind of at the heart of what we're building today is really focused on that lithium hydroxide flow sheet. So, hoping that gives you a little background, what's going in and what's coming out.

CHAIR PAZ: Thank you. Just for my own

information and all of you in the audience who may not be experts in the lithium. So, lithium then is coming out as —— in a liquid form, originally?

MR. BENSON: Originally?

CHAIR PAZ: Mmm hmmm.

MR. BENSON: Yes. So, it's, it's dissolved in the brine. So, so I'll need to take one step back to —— the geothermal resource out there is a hydrothermal resource. So, two things will come out. Really hot brine, and steam. And within the brine are all these dissolved ——

CHAIR PAZ: Dissolved.

MR. BENSON: —— salt layers. And it's like, 250 parts per million lithium, like order of magnitude. So, yeah.

CHAIR PAZ: And you talked about recycling. What amount —— I mean is everything recycled? Once you've separated the lithium, everything else is recycled and goes back? Or, is there anything that needs to be transported and disposed elsewhere?

MR. BENSON: So, the majority of the material, sodium, potassium, et cetera, we leave that in solution.

CHAIR PAZ: Mmm hmm.

MR. BENSON: We give it back to the host

geothermal facility in solution. And plumb it right back into the injection pumps that they use today. And by, by permit, they have to reinject a certain amount. And that maintains pressure support in the field, and is where geothermal gets its renewableness attribute —— is, we put the fluid back in, it sweeps across the heat source, and, and is ready to make power in, in that recycled loop.

So, most of the material is kept in solution, just like it is today with the geothermal operations. What we do take out is that silica, is, is a problem. So, we take that out and we dispose of that in a way. We'll look for ways to upgrade it, but at the moment it is landfill material.

CHAIR PAZ: Thank you. So, you started mentioning about the other minerals that are in the brine. The EnergySource EIR noted that you will also be producing zinc and manganese in addition to lithium. Are —— is there anything else that you will recover, outside of these?

MR. BENSON: There's nothing else in our horizon. Most everything else is a bit too challenging to get out or is not in sufficient quantities to commercially extract. So, at the moment, no, we don't, we don't have any additional plans.

CHAIR PAZ: Thank you. Let's see. We also heard that the facility is expecting to purchase about 3,400 acre feet a year from the Imperial Irrigation District. Can you help us understand what happens to that water, and what wastewater is produced from the facility?

MR. BENSON: So, I'll start with, with the, the second one. There is no wastewater generated from the facility. So, the brine is kept relatively intact, so it, it, like I mentioned, goes back to the geothermal facility, kind of in its native condition. And then in terms of wastewater, I mean the only, the only water that's not, you know, recovered, reused, kind of, is essentially the, the super. You know, that's it. It's a zero liquid discharge facility. And that's true of the existing Featherstone Geothermal Station, it will be true of the adjacent Minerals facility. So, that, that whole side is zero liquid discharge.

So, the —— again, the general use of the water, though, is for, you know, processing. And, and Brawley takes a few steps. One, is as we take fresh water source, we need that in two unit operations. And one, notably, we have to upgrade to a very clean, sort of a deionized water in the very last step.

So, as we're getting ready to make commercial

grade, you know, battery grade lithium hydroxide, you can't have impurities. So, even the surface water here is full of salts, as everybody knows. So, we have to treat that significantly to make it a clean water. And so, that's used at the final step to do some crystal washing, and then the final stage of product development.

So, the, the entire water balance, it's pretty well-vetted in terms of any, any recycling capabilities done. Any liquids that may have potentially lithium in them, they get recycled up to the front to be reprocessed. So, that's generally where water is used in one operation.

And then, when I was talking about our adsorbent technology, to wash the lithium off of the adsorbent, we use fresh water. It's not a lot, but it's one of the uses of the water. By contrast, there are other technologies out there as a class that are referred to as ion exchange. They typically will remove the ad—— il—— um, the lithium off of the media using hydrochloric acid.

So, this is a more environmentally friendly way, but it's, it's the source of, or the use of the water that, that we have.

CHAIR PAZ: And the water you mentioned gets

recycled in both of those steps?

MR. BENSON: Yes. So, every, every opportunity for us, particularly if you really clean water to that ——

CHAIR PAZ: Mmm hmmm.

MR. BENSON: —— that level, we try to reuse it, you know, so, as much as possible. Because it, it becomes very expensive water.

CHAIR PAZ: Thank you. Are there any air emissions, like particulate matter, that will be released? Can you please tell us if there is any air monitoring on or near the facility? And this is a three part. Do you have a plan for how to protect workers from any air emissions, whether they are from the facility or just in the area?

MR. BENSON: If I miss one, let me know. But in terms of air emissions, from this process, it's extremely low. There is —— you mentioned particulate. So, one of the things that we do use is a limestone that's a solid. It's typically pretty moist, but it is, it is a solid material that we're storing, you know, on the ground. So, that's controlled, that, that dust, you know, it's just a few days worth of storage that we see, but you know, we have to control that from a dust mitigation standpoint. So that's easily done with

mechanical controls and/or, you know, a light wetting of that material. But, that's one that can be seen.

But from a process standpoint, no, there's not a lot of, you know, there's no combustion source, things like that. So, just some solid material. Most of the material that we're using, it's either contained in vessels, tanks, or pipes. So, there's very little contact with the, with the air, with the people.

Let's see, your next question. Oh, monitoring. So, I think there's a, there's an air monitoring station that's probably, like, a mile from our facility. And it's part of the background, kind of, ambient monitoring system. But I think that's where that one is. Roughly about a mile away.

And so, in terms of, I mean, you know, generally, as a class of facilities, you know, industrial sites have, you know, a whole lot of analysis of operations, identifying physical, chemical hazards, you name it. So, in terms of how we protect our employees, we would do all of those. And then, there are standard operating procedures identified. You know, personal protective equipment, you name it. And depending on the particular job that you're doing, they're going to be trained, and given that equipment so that the workers, visitors, you name it, are safe.

So, that's something, you know, this facility will do, all the geothermal facilities out there do that today. And it's pretty standard practice for, you know, sort of industrial operations. Those kind of things get defined as the facility gets built, and the workers get chosen and hired and go through this (INDISCERNIBLE) .

CHAIR PAZ: Well, thank you, Derek. Those were the questions for you.

Next slide, please.

Oh, and for the record, I do want to welcome Ryan, Vice Chair Ryan Kelley, he joined us at 1:23. And, Commissioner Frank Ruiz joined us at 1:29.

So, Jim. So, thanks again for your earlier introduction. Your facility is unique, because this will be the first new geothermal plant to be built along with a recovery of minerals. Your company previously provided some fact sheets and other resources to help us understand the plans for your facility. And we also recognize that you're currently in the process of completing permitting and CEQA review, and that more details will be made available.

Based on what you heard from Derek, can you share if your Hell's Kitchen project will use and recover similar materials and minerals? Are the waste streams similar? And how are they different?

MR. TURNER: Well, thank you, Chair Paz. First of all, these facilities, regardless of which company we have, are fundamentally the same. They have three basic parts. They have a front-end part, where we extract brine, we, we basically make it ready for the extraction of lithium. We have the extraction of lithium itself. Derek Benson mentioned that it comes out as a salt, lithium chloride. And then, we have the, the hind end, or the finishing part, that is designed for whatever the product is that the off taker ultimately wants.

So, in our case, we're very similar. We're, we're looking to sell lithium hydroxide. That seems to be the compound of choice by most of the offtakers, whether they're automotive companies, or, or battery makers themselves. And that really depends on the chemistry that the ultimate user wants to see in, in their battery. So, lithium hydroxide is, is one of the choices. Lithium carbonate is another choice.

We have, I think, a similar process to what Derek mentioned. We make both, and —— but our focus is on, on lithium hydroxide monohydrate, the same product for the end product as, as we see it today. That could change in the future. We're ready to make the change, but today, our design is that. And, and again, on that

hind end process, we're using a, a decades old chemistry approach. Been around since way before any of us started working. Well known, and you can almost buy it as a package unit off the shelf. Not quite that, but pretty close.

On the extraction of lithium itself from the brine, there's a variety of techniques to do that. We've looked at a number of them, and they all work. The key is, which is the best fit for purpose that, you know, each of our companies has. We're looking at a sorbent. I don't know what sorbent exactly that EnergySource is using, but there's a lot of different sorbents.

Derek had an excellent analogy to a sponge. So, if you go to the grocery store, you'll see probably six or eight different brands of sponges. And, they might have different shapes and maybe different hole sizes in them. But they're all sponges, they all operate fundamentally the same. Ours is going to, you know, be the same type of an operation.

We'll actually pull the lithium off of that resin, if you will, with water. And, and again, like I mentioned, there's, there's different methods of actual extraction itself. And we're all looking for one that fits the type of needs we have, really, for the back end

of the process, so that if, if it's efficient at, at pulling that lithium back off without pulling the sodium and the potassium and the calcium and the other ions that are in, in this brine, then that's good. Doesn't have to be perfect, just has to be —— enable us to have a se—— acceptable economics.

The front end, basically, we're just preparing the brine so that we can perform a good extraction of the lithium. So, the brine is, again, as Derek mentioned, is extremely hot coming out of the ground. Mother nature down there in that reservoir has temperatures exceeding 700 degrees Fahrenheit. We typically bring the brine up. The front end is to cool the brine, and the most efficient way to col this brine is to extract energy from it. So, that's the steam that we take out, and if you have the steam out, you might as well put it through a turbine and make renewable electricity.

In our case, we're going to take a portion of that steam to make electricity, and we're going to take a portion of the steam to use as a heat source in our lithium process. We have that opportunity because we're a greenfield. We haven't built a power plant where all the, the energy was already sold and we tried to make it as efficient as we could. If you look at the existing

geothermal plants out there, that's what they did. They were, they were made to increase the efficiency of making electricity.

Well today, we want to make renewable electricity, but we also want to extract minerals. And so, we have an opportunity to shift the balance a little bit on that, to accommodate that. So, in the case of our plants, we are —— we're designing them together as a unit. Even though the power side stands alone economically, the lithium side stands alone economically. We've had the luxury, really, the opportunity, to design it as a unit so that we can, hopefully, get the, the best of both worlds.

As far as materials, again, I don't know the materials exactly that EnergySource will use. But, because our processes are fundamentally the same, we'll have reagents that we use for conditioning the brine et cetera, to monitor and manage the pH, for example. And, those will be probably the same reagents, at least from my experience out here.

And we'll ship those in by truck to the site. They'll be all completely contained in tanks or, or other kinds of containers. And then, the product of course will, will be —— at this point it will be a solid crystal. Looks just like table salt, at the end of the

day, except it will be in big bags. And, it will ship out on trucks, at least in our first plant.

Waste streams, again, are similar. We, we don't anticipate we'll have any waste streams. Our, our design and our plan is, again, zero discharge. And, uh, and on the solid side, anything that we take out of the brine, we plan to have as a product. We'll, we'll sell it. We have buyers for those products. And, we don't anticipate, other than perhaps the lab waste, office waste, to have any off-site solid waste.

Again, we, we enjoy some of that because we're greenfield. Some of the other facilities, uh, don't have quite the same opportunity. But if they did, I'm sure they would do exactly the same thing.

As far as how are we different? I mentioned that there's different types of sorbents out there. There's other techniques in order to extract the brine. We're probably slightly different in that, and if those differences command that we prepare the brine slightly different we'll do that. And again, it's to try to maximize the efficiency of extraction and recovery of, of lithium in this case.

And, let's see. Both incoming and outgoing, at least in the beginning, will be by truck. We may have, at the end of the day, a more automated feature

for that as we develop. Just because of the size of the resource that we command. But that's a, a really a separate project in the future from, from our first stage lithium facility.

CHAIR PAZ: Thank you. And you might have touched in other points, so feel free when I ask a question to maybe just summarize if you already —— or expand. In terms of the lithium extraction, for example, you mentioned that it's very maybe similar in the zero discharge, but are there any other ways that the technology and the method you're adopting uses resources differently?

MR. TURNER: As I mentioned, they're extremely similar. Fundamentally, they're the same. One party may have a technique that works a little bit better for their purposes. Certainly, if the end product is a different lithium compound, then some of the intermediate operations might be slightly different.

But, our brine is essentially the same brine. This is one large, very homogenous reservoir. It has been well studied. Dr. McKibben, when, you know, he has looked at this reservoir for many years, I won't say how many. But a lot of years. A lot, a lot of scientists have studied this reservoir. We pretty much know the reservoir inside and out. And there are a lot of

elements in there that provide perhaps opportunities for future extraction and recovery.

CHAIR PAZ: So, what about the geothermal component of the facility? What waste streams are associated with the geothermal itself?

MR. TURNER: Actually, the geothermal, the power portion, we've come a long way since 1982 when the first plant was built out here with Unocal. We, we can have designs that are zero liquid discharge. We did that with EnergySource when we built Hudson Ranch, I was part of that with Derek when, when that occurred.

And, we, we have a li—— much more knowledge than, than what occurred in the beginning in terms of how to handle silica and, and other materials. And, as I mentioned, our efforts are to sell as a product anything that we extract from this brine. And, whether it's a lithium or some high value product, or to be a lower value product.

So, the, the geothermal portion of this is, is extremely environmentally friendly. We do have CO2 that comes up with the brine, it's inherent in this geothermal resource. It goes through the system, it's not very much, matter of fact, it's almost a de minimis amount compared to other sources of electricity production.

And, the one element, or compound, that we actually abate is hydrogen sulfide. And there's very well-known techniques. BHC's been using them since before I got out here in '93. There's some new techniques today. We're going to use one of the newer techniques on that. But it is very easy to abate down to well below permit levels.

CHAIR PAZ: Thank you. And you started mentioning some of the benefits of co-locating or doing both the geothermal as well as the lithium. Can you expand on that? Like, what are the benefits of your project due to it being an all-new facility using current technologies?

MR. TURNER: The most significant benefit, at least in my opinion, is that we're totally renewable. We'll use renewable electricity for the electric requirements. We'll use renewable steam, geothermal steam, for the heat requirements. And we've been able to design this with practically zero emissions, other than fugitive emissions when you open up a piece of equipment for maintenance.

And the second thing that we're able to do, because we're greenfield, is to design in reuse of water all the way through back to the power side. Whereas if we were bolting on to somebody else's power plant,

that's a little more difficult to do, because we, we may not own that power plant. In our case, recycling water, if you want to use that term, is very important, actually, to all of us. Very important to us. We are conducting a, a water reuse engineering study as por—— as a part of our project, to see how many times we can use a gallon of water before it basically it becomes unusable and it's going to go back into the geothermal reservoir.

The, the typical things that we all do are jobs, of course. And, property taxes, which get to stay right here in Imperial Valley.

CHAIR PAZ: Thank you. Can you also speak to the same questions we asked Derek about water and air? And I think you've touched on the water. But what can you share about the anticipated volume of water the facility will need for geothermal? And separately for lithium extraction?

MR. TURNER: Well first of all, and I, and I think Derek mentioned this —— we're, we're all, very sensitive to doing whatever we can to help further the clean air efforts here in California and in Imperial County, especially. We, we monitor the air for our —— the personal protective equipment of our employees. That's, that's probably number one, to make sure that

we've designed and built, and we operate our facility so that our employees get to go home at the end of the day in as good of shape as they got there in the morning or, or better, if we can.

And water, we, we use about the same amount of water per ton of product produced —— I think that will be fairly similar throughout. And, but again, as, as far as the water goes, as I mentioned, we have a study to see how many times we can reuse a gallon of water. Which means, we might need to, to do some reconditioning of that water, if you will.

So typically, these processes need very clean water. Could be distilled water, could be mineral free water, depending on the step that's in there. And in order to produce that level of clean water, sometimes you have to do various operations on it so that you can reuse it. So, that's part of the, the work that we're doing to minimize the, the water intake from the Imperial Irrigation District to the extent possible.

I —— as far as air, clean air goes from our processes, as I mentioned before. These are fully contained processes. We do have a, an air emission as a result of the geothermal power plants. Basically the same type air emission that you see on all of these. And, we, we abate the compound that, that is a permitted

type compound, hydrogen sulfide. Other than that, these are basically air emission free.

CHAIR PAZ: And how do you monitor and ensure that workers in the community are protected?

MR. TURNER: Derek mentioned, there is an air monitoring station out there. I think it's run by Imperial County, out in the area. We will, as part of, I'm sure, our permit requirements, which we are —— we, our permits are in process right now. We'll do periodic checking of our air quality around our plant. That's really, really, for making sure that we have the proper personal protective equipment policy, safety policies in place to protect our employees, and the surrounding environment.

And that's pretty typical, with, with all these geothermal power plants. We've been doing the same type of thing for years out here, to make sure that we're doing our best for producing clean air or maintaining clean air to the extent we can.

CHAIR PAZ: Thank you. Both you and Derek mentioned the use of sorbents. What happens to the sorbent after you've removed the lithium from it?

MR. TURNER: Well, the sorbents all have a lifetime. And, and, quite often, you can —— these sorbents are built on a, a basic resin. Might be a

piece of porcelain, could be a piece of plastic, whatever. And, quite often, that basic resin can go back to the manufacturer of that resin.

They can, I'm going to oversimplify this, clean it up, if you will. They can, they can reformulate that resin to be used again. And our plan is to be able to bring that re—— reformulated resin back, use it the next time. And it doesn't mean it's any less expensive, but it means that we're not throwing it away. And, and it would limit the, the amount that ultimately had to be disposed of to breakage type, type impacts on that resin.

CHAIR PAZ: And, and in the case that it does need to be disposed, where does it go?

MR. TURNER: Typically, the —— by the time it gets disposed, it would go to a non-hazardous landfill, permitted landfill. Our anticipation is that it will go back to the resin manufacturer, and, and they will dispose of any resin that is not able to be reformulated.

CHAIR PAZ: Thank you. Is there anything that I didn't ask that you want to share?

MR. TURNER: I, I think we've probably covered most of it. One thing I would, I would like to emphasize is that we're all extremely sensitive to the

use of water. I mean, that's hands down, it's been that way 25 years that I've been around here, probably even longer.

But, these days we're even more sensitive to the use of that water. It's, it's precious here in Imperial Valley. We want to be good neighbors in that. We're all extremely sensitive to how we impact the environment. The Sonny Bono Refuge out here, right at the corner of CalEnergy is a good example of, of —— that we can do that. And, our, one of our mantras, if you will, in our company, is to make sure that we leave the environment in better shape than we found it.

CHAIR PAZ: Thank you.

Next slide, please.

So, next, is Jon Trujillo from BHE Renewable. And, Jon, you're going to hear similar questions. But again, we understand that your facility is also unique in a number of ways. First, can you share some information on the demonstration projects, and how those relate to your overall plans for commercial scale facilities?

MR. TRUJILLO: Sure. So, so as I mentioned earlier, our, our recovery facility. So, the, the aspect of the facility, the demonstration facility is, is 100 gallons per minute. It has been constructed, and

then we're looking at designing and building that second phase to then take the lithium chloride product to a battery grade product. Our, our intent is to deliver a lithium carbonate, which seems, seems different than what EnergySource and Controlled Thermal Resources has mentioned here.

That, that's still in progress. We do have this first recovery facility, which I think is, is most key. But at the same point, the, the one, one doesn't come without the other. If we can make a lithium chloride but we can't deliver a battery grade product, then none of it works.

So, so, it —— they do go hand in hand. But, we expect to use, use the existing facility that was just constructed, along with the next one, and test those for six months to a year. And really targeting more of a year or two to understand the nuances and operation at that scale. That is going to drive how and if we do do commercial recovery as well.

We need to prove to ourselves that it's commercially viable, environmentally safe, safe to our employees and everyone around us. I, I don't have any concerns there that haven't been expressed by, by Derek and, and Jim here, when it comes to environmental impacts.

It, conceptually, when you do look at the process, they are very much similar. You, you have a, a preparation step, a recovery step, transfer the lithium chloride over to another facility, or an adjacent facility to, to develop that battery grade product, and then the returning of the brine back to the process there.

So, we're, we're a very conservative organization. Our roots are in geothermal. When you, when you look at the history of our company, it really started as CalEnergy, these operating plants here, and expanded to a, to really a multi-national utility that provides power, transmits power, and generates power. And, and it's, it's really neat to see the focus come back to these, these u—— facilities just like the one Jim had mentioned, the Unit One facility that started operations in 1982.

So, taking that conservative and operational experience that we have, we, we really are focused on proving to ourselves that these demonstration facilities will, will check all the boxes that we need to move forward. Now that being said, we're, we're here and we recognize that there is tremendous amount of attention on lithium right now. And, and it's going to require patience by all of us, at least from, from our

perspective, to get to that next step of commercial.

So, it —— I don't want to put the cart before the horse, because it's, it's going to lead to not success. I guess that'd be the, the general aspect of where we're —— where we're looking within the, our demonstration facility.

CHAIR PAZ: As you're, you know, building out these demonstration facilities, can you expand on how you expect the commercial scale facilities will be developed? Do you expect to use brine from all of your facilities? And will there possibly be different extraction facilities at each geothermal plant, or how might these be completed?

MR. TRUJILLO: So, so, assuming we're able to prove commercial viability, we would be looking to, through stages, establish recovery at all, all of our existing facilities. And then, as, as the directive of geothermal development, we're also looking at expanding our geothermal operations, and also looking at those. So, that would be the expectation, assuming viable commercial success.

The second part of the question. When it comes to where, where to place all these things? The—— what we're —— part of that commercial success is, is making that, making sure that we have applied economies

of scale, but also reduced our footprint as much as possible. And so, with that, we would look at recovering lithium at the existing facilities, and then, depending on that scale of operation, looking at centralized facilities for the conversion to a battery grade lithium carbonate.

CHAIR PAZ: Thank you. Based on the descriptions you heard of other facilities, do you anticipate that your project will use and recover similar materials and minerals? You did mention that your end product is a lithium carbonate, which is different from the others. So, do you expect waste streams? Is it similar or different from what the other two developers are going to——

MR. TRUJILLO: You know, I —— there's a little bit of arm waving with all of us, because, because we're going through these processes. Derek and EnergySource are further along in, in their confidence level when it comes to commercial. And so, I don't know the details of their, their projects. But, but what I, what I'd rather focus on is, is when you look at what, what we're trying to develop, as well as just, just generally conceptually of those, those three simplified over—— overly simplified steps. The, the consumption of chemicals and the waste products don't look any

different than the geothermal operations that we've, we've been performing for the last 40 years.

Very similar, if not the same, chemicals. We're striving to, to either have no or, or as little as possible, solid waste. Just similar to, to our, our —— to Jim and Derek here, we're also looking at —— we don't anticipate any wastewater. We're also a zero-discharge facility, all of our current operations, and we're anticipating the same for ours.

One thing coming, coming from a geology background, I do want to clarify, because it sometimes gets a little misconstrued, is, is the geothermal reservoir sits anywhere from 2,000 to over 10,000 feet below ground level. And is, is fully disconnected from local groundwaters, which are non-drinkable. As well as disconnected from the 42-ish foot depth of the Salton Sea.

So, so we have separate bodies of fluid. The, the base for the geothermal brine is, is a, an extremely salty water. It's about seven times saltier than sea water, as a perspective here. But why I want to bring that up, is, is any residual water, which is required for the geothermal process, and certainly there is water required for the lithium process, would, would return back to the reservoir to help support pressure and

maintain that renewable and sustainable resource.

Additionally, we do have oversight and regulation when it comes to all subsurface aspects through, the acronym's CALGEM, but it's, it's a —— the Geologic Energy Management Division within the Department of Conservation. So, biannually, we have to verify that our wells have integrity. Meaning, they don't leak anywhere expect for down into the geothermal resource that, that's where they're intended to go.

So, we, we had to prove that to ourselves, community, and of course the regulators as well, that we're, we're placing that fluid back where it came from to help sustain this important resource.

CHAIR PAZ: Does the technology you plan to adopt, and I would add here both in the recovery, separation, and then the commercialization of the product, use resources differently than the others?

MR. TRUJILLO: And, you know, I, I guess there's —— by resources, you mean, you mean chemical uses and, and water and stuff?

CHAIR PAZ: Water ——

MR. TRUJILLO: And, I would say, in a general sense, I don't believe so. But again, I, I don't know their, their technology, so I can't say one for one or like for like, you know, on that. But our, our goal is

to, to limit the amount or resources because of the environmental footprint, but also the commercial viability aspect. It —— there's that.

I, I don't, I guess it's probably leaning to the next question I anticipate. But, but, when it comes to lithium itself, that portion of the process, because we're really focused on having these —— both the geothermal and the lithium stand on their own two feet. If we run into either a technical or commercial hurdle with lithium, that still allows us to move forward for geothermal.

And, and vice versa as well, when it comes to development. We have operating plans and look to operate those for, for a very long time further in this, this renewable resource. But, if there's some sort of issue with the geothermal power market, that allows us to still march forward with lithium.

CHAIR PAZ: And the next question's going to sound redundant. So, I'll ask both about the water and the air. But, it——

MR. TRUJILLO: Sure.

CHAIR PAZ: It is just similar, for clarification. If there's any information, or additional information about water and the wastewater, including anything you can share about the current

geothermal facilities? And then, discuss the air quality specific to the lithium extraction.

MR. TRUJILLO: Yeah. So, so all of the, all of these, meaning the, the lithium processes —— and my, my understanding as, as I've heard it here, these lithium processes all take water. Irrespective of the unique technologies. So, so, I don't think we're any different there as, as needing water. And, being very sensitive to that. You know, we —— I was —— we challenge ourselves daily on, how can we either reuse water, reduce water, or, or share water between the geothermal facilities and, and lithium.

When it comes to the geothermal facilities, there is a need, depending on where you're located within the resource itself. The—— it's all one fluid or one brine down there, but there are subtle variations because of the, the geologic make up at, at depth. When you look to one to two miles down below our feet, those subtle differences make a, make a difference. And so, generally, when you look towards the northeastern part of the reservoir, it has a higher total dissolved solids content.

So, that means there's more, more minerals, more salts dissolved within the fluid itself. Less so to the southwest of the, the resource. And so, as, as

that northeastern part gets developed more and more, I anticipate that what's going to be required as part of the process. But of course, it depends.

Now, these are based on what, what we're currently doing in our existing facilities. I can't speak to Controlled Thermal Resources and their applications. But, you typically need something that's called dilution water. And essentially, as you recover that steam for energy, whether that be applied to, to lithium or to, to energy and power production. The, the quantity of, of dissolved solids within that slou—— fluid become greater and greater. And, and it gets to a point where regardless of, of temperature, you have to add some dilution water to make sure that you don't plug up the system with, with scale, and salts precipitating in there, where they, they can't be.

And so, that, that use of water known as dilution water, really is another factor that, that we apply to keep this resource and operation sustainable. If, if we had to reduce that —— if, if we weren't able to use dilution water, we would have to shut down the plant on a very frequent multi—— you know, multiple times a year to, to clean out the salts and that scale. And it, it becomes non-viable and non-sustaining.

CHAIR PAZ: So, this is my last question. In

terms of the dilution water, and I know Derek mentioned the need of having super clean fresh water to be able to use. Is it the same for both the geothermal process and the lithium, the quality of the water that's needed?

MR. TRUJILLO: No, it generally isn't. We, we can take lower quality water. It does need to have some quality to it, just because one of the challenges when you add dilution water is, is the coolest this geothermal fluid gets is at the, the back end of our process after we've alleviated all the—— or basically transferred that pressure and heat energy through the steam off. It's still sitting at about 225 degrees Fahrenheit. So, we've got to bring that dilution water up to that, up to a similar boiling point and pressure —— temperature, excuse me. So, when you do that, you need to make sure it has enough purity to withstand that, that increase in temperature.

You know, our source is, is IID, or Imperial Irrigation Canal water for that. And so, we, we've run into, you know, biological material, making sure that it's —— we don't have mussels clogging the thing up, or, or other things. But, it doesn't need to be high purity, reverse osmosis, or deionized water for, for the geothermal application. So, it gives us more, more flexibility there.

CHAIR PAZ: Thank you.

MR. TRUJILLO: Sure.

CHAIR PAZ: And, I do want to welcome, also, Commissioner Miranda Flores, and she arrived at 1:45, and Commissioner Reynolds, who arrived at 2:07. So, welcome.

And now, Dr. McKibben. Thank you for joining us again

DR. MCKIBBEN: Certainly.

CHAIR PAZ: Given your knowledge of these projects and the different technologies, can you help fill in any gaps or add any information for the Commission to consider?

DR. MCKIBBEN: So, I think they have a slide I prepared.

CHAIR PAZ: Next slide, please.

(Pause)

DR. MCKIBBEN: So, I tried to take what they have all said here, and what they said in their EIR's and, and other public statements they've made during field trips and other public hearings. (INDISCERNIBLE) summarize the waste streams that they're anticipating from geothermal lithium extraction and processing

So, I've, I've divided this into, sort of, four steps across the top there. They take a brine feed

from the power plant, an existing power plant, and then they take that through a lithium extraction step to pull the lithium out of the brine. And then, they have to release that lithium from whatever adsorbent they're using. Usually, it's a lithium chloride.

And then, they need to convert that lithium chloride to the final product they're going to market. And that's either going to be lithium carbonate equivalent, as BHER, BHER has indicated, or a lithium hydroxide monohydrate, as CTR and ESM have indicated.

So, at each of these steps, I, I then asked, well, what, what are the possibilities for these, these processes, and what waste streams they would produce? And, one of my colleagues has called this an adventure diagram. Which I think is appropriate, because it really does depend in detail on, on what processes they're going to use, and that will dictate some of the waste streams.

So, the first thing to look at is, taking that brine feed from the power plant. The brine at the power plant is treated twice, in, in reactor clarifiers. A primary reactor clarifier, and a secondary. And that's mainly to clean it up so they can reinject it without plugging up the reinjection wells.

But, in some cases, they need to clean it up

even further to not interfere with the lithium extraction steps. So, there's additional brine cleaning needed. And, that—— if that step is necessary, then they need to make some adjustments. There may be some pH adjustments, and that may cause —— they may also cause the brine to cool, and that will cause it to precipitate further minerals.

And so, they all mentioned pH adjustment and use of sodium hydroxide and, and hydrochloric acid, NaOH, and HCl. And maybe trucking those components in. And what I want to suggest is desalination would be another source of those components that could be done locally. Desalinate local brackish groundwater that's not suitable for drinking or agriculture to produce those reagents locally, and then they wouldn't need to be imported.

If they cool the brine and cause it to precipitate further, they will generate additional silica iron filter cake, and, and ESM's draft EIR goes in to quite a bit of detail about additional filter cake generation and, and disposal.

But again, I'll, I'll remind the Commission that the —— the filter cake generation and disposal is already taking place. It's already permitted. It, it goes into non-hazardous landfills when it's tested to be

non-hazardous. It goes into higher level landfills when it's, it's tested to have components that you need to worry about.

The next step, which is the lithium extraction step from the brine, they've talked about different ways of, of filtering the lithium out in different sponges. And I'm generally aware of, of what each of them is doing in, in terms of that. And a lot of it's very proprietary. But they're either absorbing the lithium as lithium chloride, which means the only way you need to squeeze the sponge out is with water, and you don't need acid.

The other way of doing it is with an ion sieve, where you're actually —— the sponge is pulling just lithium out. And then, you need to squeeze that sponge out with both water and acid, or hydrochloric acid, HCl. And so, depending on which of those processes you're using, you may or may not have an acid component to deal with. In the case where they're using HCl, acid, they've designed ways to recycle that HCl back into the system and regenerate it, so they don't have to dispose of it as a waste.

So, that second step, the lithium extraction from the brine, really the only waste product from that, and it's already been mentioned, would be the, the worn-

out sponges, if you want to think about it that way. So, you have to dispose of any adsorbents after they've been through multiple cycles. And, and so, they've mentioned sending some of them back to the manufacturer and having them reconditioned and come back. So, in those cases, you don't have to worry about disposing them. But, if they break down to the point where you can't recondition them, then yes, you would have to dispose of them. You'd have to test them and see if they need to go into a hazardous or non-hazardous landfill.

For the lithium release, whether they're using just water, or water plus HCl, they're going to have to clean up and recycle that water, and they've all mentioned ways they're, they're looking at doing that. And they've identified ways of recycling that acid back into the process, so that it doesn't become a, a waste material that needs to be disposed of.

When you look at the lithium conversion, because there's two different possible products —— the lithium carbonate equivalent or lithium hydroxide monohydrate, the, the method you use to convert lithium chloride to either of those products can, can vary. Electrodialysis is one technique, where you're basically applying a current across it to separate out the lithium

hydroxide. That takes electricity to do that. But, one advantage is, it, it keeps out some of the impurities like magnesium, that would normally contaminate the lithium hydroxide.

The other way to do that conversion is a precipitation using either a sodium hydroxide or sodium bicarbonate. And they've already mentioned the need for, for carbonate. And, one thing I want to suggest, and I think some of the companies are looking at, is capturing that CO2 that they currently emit into the atmosphere, and making bicarbonate from that, and use that bicarbonate to make lithium carbonate equivalent. Then you don't need to bring in lithium hy—— sorry, sodium hydroxide as a, as a reagent.

The other products of those conversions can be sodium chloride, chlorine gas, and hydrogen gas. And the sodium chloride and the chlorine gas can be recycled back to make hydrochloric acid. And so that doesn't become a problem. The hydrogen gas can't be recycled, but you can make fuel cells (INDISCERNIBLE)hydrogen.

So, I think this diagram kind of summarizes all the possibilities and, and the difficulty that the companies are having explaining to us what, what the waste streams are going to be is because they're still testing all these ideas. They're still running

demonstration plants. ESM is the farthest along, and seems to have settled on a, on a path forward.

But any of these companies could go down multiple paths in this diagram, and, and end up having different waste streams as a consequence. And we're only going to know the answers to a lot of these questions once they've gone through that process. Hence the name, Adventure Diagram. Adventure Map. We were really not quite sure which path they're going to follow.

But these are all the —— in my view, the possibilities.

CHAIR PAZ: Thank you. Is there another slide that we need to advance?

DR. MCKIBBEN: It was going to be an answer to another question you had.

CHAIR PAZ: Okay.

DR. MCKIBBEN: Yeah.

CHAIR PAZ: So, the question is, and I think you answered number one. So, can you explain the regulatory frameworks that these facilities will work in and share with us? From your experience, where the data related to solid waste, water quality and air quality reporting and monitoring is available, do you have any suggestions about how interested community members can

engage with various oversight agencies?

DR. MCKIBBEN: So that is indeed the next slide.

(Pause)

So, I tried to put together sources of information that the public can, can go to, in terms of regulations and data related to the solid waste, the water quality, and the air quality. So, the first source is Imperial County's website. So, there you can find Notice of Preparations, draft EIRs, NEIRs. So, I've given you the links for CTR's Notice of Prep, Notice of Exemption, and Notice of Completion. You can download those. ESM's ATLiS Project EIR, all 1,000 pages of it. But, there's a lot of good information in there, and that's the link for that. And then, Berkshire Hathaway has not gone through the, the EIR process yet, but they did go through an EIR for their Monofil, where they dispose of the filter cake. And there's lots of information in that EIR as well.

Waste disposal is controlled by CalEPA's Department of Toxic Substances Control. So, there's the link for their website, and, and you can type in Salton Sea, or geothermal, and find a lot of information there. I think Jon mentioned the CalGEM site hosts all the information on geothermal wells. So, if you want to

find a geothermal well at any, for any property in the Imperial Valley, there's a map, a searchable map, and you can find the well data, the date, how deep it is, the pressure, the temperature, the brine chemistry, and so forth.

As far as air emissions, you can look up on the CARB, California Air Resources Board website. They publish annual greenhouse gas emissions from all sorts of power plants throughout the state, including all the geothermal power plants down there. And there's even a CARB pollution mapping tool, as they call it, where you can pick up a spot on the map and it will show you all, all the known pollution emissions from that site.

And then, finally, surface water and the brine pond water at these plants are regulated by Regional Water Quality Control Board. And in the case of the Imperial Valley, it's the Colorado Regional —— Colorado River Regional Water Quality Control Board.

And so, these are places people can start, I think, if they want to look up information. You can get on the mailing lists for a lot of these organizations. So, you can get notified when new reports come out, and I would advise people to do that.

There are a number of other sites I could provide. There's a Salton Sea Management Program,

there's the UCR Salton Sea Task Force, many other sites I could mention that are kind of secondary to these in terms of having a lot of information of interest to the public.

(Pause)

CHAIR PAZ: Thank you. Next question. In your opinion, are all of the materials and waste associated with lithium extraction, and even geothermal, sufficiently managed by current regulations and oversight agencies? Since this is new activity in the county, are there any gaps in information or services to be sure residents, workers, and communities are protected?

DR. MCKIBBEN: So, lithium currently does not have regulations controlling the allowable levels in drinking water, and regulations controlling what humans can absorb. Lithium is thought to be an essential nutrient for humans. So, normal adults need an intake of about one milligram per day of lithium. And the USGS and the Environmental Protection Agency have issued what's called a health-based screening level, which is an advisory level of 10 micrograms per liter in, in drinking water. So, that's 0.01 ppm lithium in drinking water.

A lot of public water supplies actually exceed

that number. But currently the EPA and CalEPA have not set a maximum contaminant levels for lithium. The European Union has not set a maximum contaminant level for lithium, but I have read they are thinking of doing that. The only regulatory body that has a maximum contaminant level for lithium is the Eurasian Economic Union, which is Belarus, Kazakhstan and Russia. And they've set it at 30 micrograms per liter, or 0.03 ppm.

So, what will happen, if, if the state and the federal government decide to set limits on lithium exposure, that will la—— will regulate the amount of lithium that should be allowed in drinking water. It will also regulate things like the inhalation and ingestion and then absorption through your skin.

And one thing about the lithium salts, is that they are all quite soluble. And so, they would probably regulate not just lithium by itself, but all of the lithium salts, like lithium chloride, lithium hydroxide, lithium carbonate. If they do that, that would add a level of, of management to the operations of these companies. It would add to their costs, because they would have to protect employees who are working with these materials, packaging these materials, and shipping these materials.

I think it will take several years for

regulations like that to be developed, and they have to go through a public review process, much like this is going through a public review. So, it's not an eminent thing, but that's certainly something to pay attention to in the future, is any regulations that appear, maybe first in the European Union, and then later in the United States, that regulate the lithium.

One other thing I wanted to talk about, and I can't remember if this was one of the questions you had.

CHAIR PAZ: Can I ask you, before you move ——

DR. MCKIBBEN: Sure.

CHAIR PAZ: —— on on this point, which is really interesting, about the metrics for maximum contaminant levels and regulations around that. And, I don't know if you would have the answer, but I do know you're part of the Salton Sea Task Force. But, are there any studies related to the public health, right? Because, obviously, in order to even set in any regulations, we need to understand how public health is impacted through exposure.

DR. MCKIBBEN: So, lithium's kind of peculiar in that regard, in that the beneficial level of lithium, in terms of human behavior, is very close to the toxicity level of lithium. So, there was a USGS paper that just came out, I think last year, and I'd be happy

to send it to the Commission, where they reviewed a lot of the data.

And they found that —— uh, some lithium in drinking water is good. They found that high —— higher levels of lithium in drinking water correlate with less depression, less mortality from Alzheimer's, lower suicide rates, and lower violent crime rates. So, there is some certain level of lithium that actually has a positive influence on human behavior.

But there then is a toxic level of lithium, where —— which has symptoms like tremor, trouble walking, and kidney problems and so on. So, there have been a lot of medical studies on, on the health effects of and impacts of lithium, but it's kind of a tight line between a beneficial level and a, and a detrimental level.

Fluoride is another element that has that same kind of tight line between a beneficial level for your teeth, but a toxic level that's slightly above that. So, it will be interesting to watch in, in the future if, if the government decides to regulate lithium and what kinds of levels they'll set. And the state is often setting a more strict levels than the federal government. So, everybody has to follow the federal limit as a minimum. But, I'll give you the example of

arsenic. The state's, CalEPA's hazardous level for arsenic is much more strict than the federal.

CHAIR PAZ: Thank you. You were going to add something to ——

DR. MCKIBBEN: Yeah, I, one other thing I wanted to mention, and that —— everybody's talked about water. And, and water's important to all of us. And so, I wanted to repeat something I've, I've said before. And that's this idea of, of waiting —— using water that has other beneficial uses like agriculture, drinking water, municipal purposes. And trying to use water that won't compete with that. And one of those candidates is the steam condensate that all these gen—— plants generate. And they like to inject most of that, because you want to keep the pressure up in the reservoir, and you don't want to have happen what's happening up at the geysers, where the reservoir is dying, and down at Cerro Prieto in Mexico where the reservoir is dying because they're not reinjecting.

But what I want to propose, and, and maybe the companies are thinking about this, is, is what they're doing up at the geysers, is piping

(Dialogue in Spanish)

(Pause)

UNIDENTIFIED SPEAKER: Cross connect.

UNIDENTIFIED SPEAKER: How'd you do that——

(Dialogue in Spanish)

(Laughter)

(Pause)

DR. MCKIBBEN: Up at the geysers, the three local communities including Santa Rosa, are piping their greywater to the geothermal field, and reinjecting it into the reservoir. And that's helping keep the pressure up. And if you did that here, with the local communities, that would provide injection water that could go into the reservoir, and that means they could use more of the steam condensate for process water. So, dilution water, or the deionized water they're talking about.

So, I would, I would just urge the, the Commission to consider that possibility.

VICE CHAIR KELLEY: Mr. McKibben, excuse me, Chair.

CHAIR PAZ: Go ahead.

VICE CHAIR KELLEY: In the past, I was on the City Council in Brawley. And Ormat had approached us about tertiary treatment for the wastewater stream from our wastewater plant. And we continued conversations. But it was the Regional Water Quality Board in our permit that precluded us from entering into an agreement

at that time. From being able to make that water available. And it —— and they said that it was a requirement that we continue to flow that discharge into the New River. So, that, it could be an obstacle, but it certainly could be overcome.

DR. MCKIBBEN: Yeah. At lea—— at least it was overcome up in, in the geysers area.

CHAIR PAZ: And maybe that leads into the next question about ideas or recommendations that this Commission should consider for the report.

DR. MCKIBBEN: Yeah, so I think I've given you a couple.

CHAIR PAZ: Yeah.

DR. MCKIBBEN: Desalination to produce some of the reagents so they don't have to import reagents. Capturing the carbon to make carbonate for lithium carbonate. And then, possibly, injecting municipal water in —— to, to allow them to use more steam condensate.

CHAIR PAZ: Great.

DR. MCKIBBEN: Just ideas. And I don't wha—— I don't know what the economics of are, of all these are. They may not work out economically.

CHAIR PAZ: I do have one last question based on community interactions and some of the language that

we use. So, really, when we're talking about the process of lithium extraction, and there's a use of chemicals, right? Chemicals are going to be used in the process for separating the lithium or for converting it to commercial grade.

And then, you introduced now the word acid. These are words that are traditionally, you know, carry negative connotations.

DR. MCKIBBEN: What was the last word you said?

CHAIR PAZ: Acid, the word acid.

DR. MCKIBBEN: Okay.

CHAIR PAZ: Yeah, the use of the acid. So, these are words that traditionally will carry negative connotations, and whenever we're speaking to the community, that's the first thing that they hear. What can you tell us about, you know, the chemicals, the acid, and any protections that you think people, or extra cautions, if any, that people should be taking when they hear this? Is there a reason for concern?

DR. MCKIBBEN: So, they're not using end processes, end processes necessarily concentrated acids that would be quite hazardous to people. They, they'll end up diluting it in most cases. So, I think they take what might be shipped in as concentrated HCl, but that

ends up getting diluted to probably just a few percent. And that, that's comparable with what goes into your pool to give the chlorine. So, it's not, not seriously hazardous to you.

But you're right, we need to talk about chemicals in a way that don't alarm people. And, and maybe talk about the processes that alleviate some of their concerns. I mean, we use chemicals in our daily lives all the time. And, and maybe the way we phrase it, we need to be careful.

But I, I tried in that chart to indicate all the reagents ——

CHAIR PAZ: Mmmm hmm.

DR. MCKIBBEN: —— that I thought people should be aware of that might either consumed or produced as a, as a product. And, and hopefully that will help people understand. But the idea, really, that all the companies are working on, are ways of reconstituting or recycling those reagents back into the process, so they don't end up emitting them. So they're used. And they're —— they might be a scary sounding chemical —— hydrochloric acid. It's being used, but it's, it's in a closed loop process and it's not being emitted in the air or into the surface.

CHAIR PAZ: Thank you. Also again, thank you

to all the presenters. And I will now see if our Commissioners have questions or discussion.

COMMISSIONER CASTANEDA: Thank, thank you, Madam Chair. And I appreciate it. This was extremely informative, and I, and I learned a lot. And thank you very much. And it kind of sounds like we don't know what we don't know, because a lot of this is still in the test phase, and it's test and learn and trial and error and those kinds of things.

And, you know, a lot of the chemicals we've talked about, I sit on a water board in my home town, and we use those com—— chemicals commonly in the treatment of water and the treatment of sewage and everything, and, and you know, our plants, basically, we have a desal plant, we have a, a water treatment plant that's connected to our reservoirs and, you know, these are right in urban areas. And we store and we use these, and we obviously have to go through the regulations and we have to ensure that our employees as well as the people who live around there and the people that consume our product are safe. And, and it can be done. We had an interesting talk about lithium as a, as a chemical, and, you know, we sort of forget that in the 40's, 50's, the 60's it was the most common anti-psychotic drug that was administered.

You're right, I mean anything to a certain degree is beneficial, but beyond that, is, is not. And we need to be very concerned about this. And I am, I am —— I am very, very, I think, concerned about the environmental impacts of these processes. But I think that they can be managed.

My concern, also is on the other side, is that to the extent that we continue to ask for more regulations and more oversight and more categorization of chemicals and processes that are commonly used today, we'll only add more cost to this process. And I, you know, I, I had the opportunity to read the report, and I don't even remember when we got it, from Ian Warren. And it, and it was extremely enlightening about the different kinds and many —— much of what was in there was talked about today, the processes and so forth. And so, and the cost.

And, and the cost, actually the cost of what you can actually sell lithium for at, at the carbonate, you know, battery grade level that you talk about. And, we have a very, sort of, equilibrium that is, that's, it's very close here. And, we have a, a real challenge to, you know, to ensure the safety of the public, which is paramount, and, and I think this gentleman here talked about the fact is that this could all just dry

up. And we're back to where we were.

What I'm, you know, we've talked a lot about above the surface, this report raised an issue for me that I, that we, I think we've touched about just lightly, is below the surface. And it's the reinjection —— whether it's greywater or whether it's the recycled brine that basically is been had lithium extracted, and the temperatures that basically that brine is re—— reintroduced into the reservoir. And whether or not that might have an effect on the actual resources as they sort of —— from what I understand, is that there's a reservoir, you've got lithium bearing rocks underneath. The heat basically discharges the lithium and then that's what's pulled out.

If the water, as you said, in the geysers and other places, where they're starting to dry up, if we don't maintain that, that temperature, we've got no more lithium. So, I'm just wondering, is there a —— we did talk a little bit about this. And, tell me, whether or not, because I think that Mr., or Dr. Warren basically said that existing geothermal plants at 50 percent of the energy that's generated from those plants, if you introduce lithium extraction, or a DLE process, 50 percent of the energy that's generated by that facility goes into that DLE process. Is that, is that sort of

accurate?

MR. BENSON: That's too high.

COMMISSIONER CASTANEDA: Is that too high?

MR. BENSON: Yeah. I, I think, ESM was talking about, I think the 8 megawatts, 7 megawatts out of, out of 55, right?

COMMISSIONER CASTANEDA: And I don't know what, what size plants he's talking about, here. But, he said generally.

MR. BENSON: Yeah, I mean, I can, I can speak to, I think, like all of this. It, it —— your results may vary. There is a difference, depends on the technology. If you were doing precipitation. You know, you —— we have pumps and motors and things like that.

COMMISSIONER CASTANEDA: Sure.

MR. BENSON: That has one electric load profile. It is a fraction of the existing geothermal production.

COMMISSIONER CASTANEDA: Okay.

MR. BENSON: Right? If you do electrolysis on the back end, that is, that is an exchange of chemicals and precipitation for electricity.

COMMISSIONER CASTANEDA: Right.

MR. BENSON: And then, the electric load would look much higher. So, it really does depend on, on ——

COMMISSIONER CASTANEDA: Okay, so that's where it kind of, like, started. We don't really know what we don't know, because it really depends on what the process is, and, and how economically viable that process is.

MR. BENSON: Yeah. I think generally speaking, just, just for the benefit of everybody, you —— if you're in a re—— reasonably high electric cost world, no offense to IID, but all of California is reasonably high-cost electricity. You typically see electrolysis in areas where you have a very large hydro, thermal ——

COMMISSIONER CASTANEDA: Right.

MR. BENSON: I mean ——

COMMISSIONER CASTANEDA: On the cheap end.

MR. BENSON: Hydro power.

COMMISSIONER CASTANEDA: Yeah.

MR. BENSON: Quebec, Tennessee Valley Authority, those kind of places.

COMMISSIONER CASTANEDA: Well, you said the magic word, hydro, which doesn't exist in California. So, at least not today. So anyway, that, that's the interesting thing. But then we talked about the use of water and greywater systems and so forth. And, and believe me, I, I know what tertiary treatment costs. And, you know, I mean, the state is gone, you know, full

circle around their per—— you know, their sort of perspective on, you know, water reuse. It's, it's gone, you know, around a few times.

But that's a very expensive process. That's a very expensive process. And you add that into the mix, I'm not sure that this product is going to pencil out. And we've got to figure out a way to do this that protects the, the community, that doesn't deplete resources that are needed by this community. But also makes it economically viable. Because all the things we've been hoping and dreaming for is, that will materialize from this, won't happen. And that will be just another sad story that we've heard many of. So, I appreciate it, thank you. And it's more of a commentary than, than anything.

DR. MCKIBBEN: So, one example was the Hudson Simbol plant that was originally going through a CEQA process, but Simbol went bankrupt.

COMMISSIONER CASTANEDA: Yeah.

DR. MCKIBBEN: They were going to —— 70 percent of their water was going to be from steam condensate and only 30 percent of the lithium extraction water was going to be from IID canal water.

COMMISSIONER CASTANEDA: Okay.

DR. MCKIBBEN: So, that's one example.

COMMISSIONER CASTANEDA: So, there's ways to,

DR. MCKIBBEN: Yeah

COMMISSIONER CASTANEDA: To sort of, yeah. Okay. Alright.

MR. TRUJILLO: Commissioner?

CHAIR PAZ: Thank you.

MR. TRUJILLO: There is, there is one comment I'd like to make. It's, it's one that, that sometimes concerns me, is, is I, again, don't want to put the cart before the horse, is, is the assumption that, that additional lithium recharge will occur within the resource. You've mentioned the, the depletion of heat. That, that certainly can impact the, the duration of time before that, that fluid is reheated to a level that we can produce it for power.

COMMISSIONER CASTANEDA: Right.

MR. TRUJILLO: However, when it comes to the source of lithium within the resource, this geothermal resource was created over thousands and, and really, you know, million plus years geologic time scale. Not coming anywhere near our human time scale. And so, so, I —— again, from that conservative aspect, I don't want to assume that the lithium aspect will continually recharge based on the, on the reservoir and the resource rocks.

I think, you know, the better perspective would be to, to consider that icing on the cake. If we see those, that, that additional recharge as we operate the, the resources and recover, right? And that assumption that is so. Because it is, it is uniquely different than the, the sustainable power production that we have here.

COMMISSIONER CASTANEDA: Right. But they, but the power production and the lithium extraction kind of go hand in hand, right?

MR. TRUJILLO: Absolutely. You can't have ——

COMMISSIONER CASTANEDA: You know, so you can't have one without the other, right? They're linked. You could, but it wouldn't make sense.

(Laughter)

DR. MCKIBBEN: So, the, the federal grant I mentioned that I'm working on with Lawrence Livermore, sorry, Lawrence Berkeley Lab —— one of the things we're tasked to look at is potential lithium depletion in the reservoir over time. And we're developing a reservoir model, and then water-rock interaction computer codes, to try and model all of that and see if, as Jon says, is it really going—— is lithium replenishment, just like heat replenishment, going to be fast enough on a human timescale?

COMMISSIONER CASTANEDA: Right.

DR. MCKIBBEN: As opposed to a geological timescale.

COMMISSIONER CASTANEDA: Right.

DR. MCKIBBEN: So, it's something we're looking at.

COMMISSIONER CASTANEDA: Good. Alright. I'm glad, thank you. And I knew your were, so I mean, obviously, this is a very serious thing. Because, if milk stops coming from the cow, then ——

(Laughter)

—— what do we need the cow for anymore?

(Laughter)

CHAIR PAZ: Commissioner, Vice Chair Kelley, you had a comment or a question?

VICE CHAIR KELLEY: Yeah, just a tie off of what Steve was asking. Jon, you've shared in the past about the resource and its sustainability, and the years of records that you have. And for all of you, is the further development of more geothermal, what kind of pressure is that going to put on the energy production for the, the whole area?

MR. TRUJILLO: So, so, in the public domain, you can see resource estimates anywhere from roughly 1,400 to over 3,000 megawatts of, of power production

within this, this reservoir. Really, what we're looking at depends on, on that scaling. You know? Currently what we have is, what we have in operation around numbers between Hudson Ranch at 55 megawatts, and our 345, we're, we're at 400 megawatts.

We're looking at an additional 339 megawatts of development for BHE Renewables. Controlled Thermal Resources, I know you have a power purchase agreement for 40 or 50 megawatts with IID. I, I wouldn't dare speak of any other additional developments. But, it takes quite a while to get to even that low number of 1,400 megawatts.

Now, we have to be smart and manage that resource. And CalGEM, who I mentioned earlier, that's part of their directive, is to make sure that we're using that resource in a, in a respectful and viable and optimized manner. So, while we, we all sort of play separately within the resource, as, as separate operations and companies, it, it behooves us all to, to manage that resource effectively.

CHAIR PAZ: Thank you. Do we have any other questions?

(Pause)

And if you can state your name and locations.

COMMISSIONER HANKS: Pardon?

CHAIR PAZ: Your name and location, I, I'm forgetting to remind you.

COMMISSIONER HANKS: Jim Hanks, at the Calipat High School. I, I've got a list of questions here. Came up about the energy needs already. And, I think that probably —— I think I used an EnergySource as a single unit, just kind of a, base that we can kind of go with, get in to larger——

CHAIR PAZ: Commissioner, can you speak louder? The audience cannot hear your comments.

COMMISSIONER HANKS: This is, this is loud for me.

(Laughter)

CHAIR PAZ: You're going to have to s——

(LAUGHTER)

I don't know if, if we move the——

COMMISSIONER HANKS: I'll try it out. You want me to act like I'm mad?

CHAIR PAZ: Yes.

COMMISSIONER HANKS: Oh, okay.

(Laughter)

So, I, I think we can use EnergySource as a base, for trying to figure out some of these issues. So, I'll move from there to, to water issues. I understand the geothermal uses the irrigation water,

that core production of the lithium, the finished product. Do you have any idea how much of that water it will take for, say, your operation?

MR. BENSON: Yeah. So, in our, in our EIR and the water balance that we did, we're just over 3,000 acre feet per year for the mineral extraction process. So, that's, that's our current estimate for water use on that. So.

COMMISSIONER HANKS: Okay. Would that be pretty much the same for Berkshire Hathaway's plant?

MR. TURNER: Yeah, actually it's, it's about the same on a per ton of product. So, if you have a larger plant, obviously you use more. But, on a per ton of product, it —— we're all in the same ballpark.

UNIDENTIFIED SPEAKER: How we say this.

COMMISSIONER HANKS: The reason, the reason I brought that up, and I, I need a couple of follow up questions. Would treated water, like we have in our city for example. Would that meet the standard, the quality standard, you would need for that final step?

MR. TURNER: Actually, treated water —— the lithium process needs cl—— very clean water. And it might be deionized water, or, or distilled water. And, so, depending on which part of the overall process that you're putting water in, it may have different

specifications on the quality of that water. But, virtually, any water would be a start. The real question is, what does it take, how much does it cost, to make that gallon of water usable in this particular portion of the process.

So, there's —— you could start with virtually any water stream, and some of it may be so uneconomic that it, you wouldn't consider it after the first pass. But others you, you might.

COMMISSIONER HANKS: Well, the reason I, I brought that up, those that live, that are directly impacted in this area, which is Calipat and Niland. The, the issue with their cost of their treated water. And, you know, we're talking about water constitution and so forth. But I, I'm trying to look and see if this is some way to compliment or enhance the water system in Niland and Calipat? Is there some way that the treatment plant could facilitate and, um, which would open doors to other options? I'm not going to go into those.

But also, in the area, we have people that are interested in, in hydrogen. And they're talking about some type of higher-level quality of water than irrigation, putting in their own system. And, where they're looking at is in the, this immediate area. So,

I was, I was wondering if there was —— had been any consideration of, of the groups going together? We know there's a pipeline that goes down the railroad track to Niland. It is not that far off, that far removed. And if that's some, some possibilities. And, and I know this, like you say, this isn't the time, but maybe some of those tax dollars could work towards that. Okay? So, I, I just throw that out there for consideration.

MR. BENSON: Well, I think, and sorry, but I think I'll echo it. The technical challenges of water probably aren't (INDISCERNIBLE) dirty water and clean fresh water. There's probably a spot and a process to —— I think regulatory is the bigger, it's the —— whose water is that? That's maybe the bigger challenge.

COMMISSIONER HANKS: Yeah.

MR. BENSON: So you know.

COMMISSIONER HANKS: And then, in terms of if you get into the competition, okay? There may be some advantage to using municipal water. The wastewater.

MR. TURNER: I, I agree with Derek. It's probably more of a regulatory challenge than a technical challenge. Hydrogen, though, needs extremely clean water. To the point where there's almost nothing else in the water, except for, in some cases, a little bit of sodium hydroxide because it enhances the electrolysis.

But, the treatment water from a treatment plant, you know, technically it's viable. It's a matter of economics, but, I think Ryan Kelley mentioned the, the regulatory aspect. You'd have to get past that hurdle. So, if we did, and, and it was close enough source to give it a shot, we'd probably all be interested in it.

COMMISSIONER HANKS: Okay. And, you know, I, I have reached a point of frustration, I guess. That there were still journalists out there questioning the environmental issues of, of the lithium operations. And we've gone over it and over it, and I keep thinking, well what's so difficult to understand? But the professor, he added in some things into a different eye, so there may still be some things out there, so I'll, I'm going to back off (INDISCERNIBLE). You know, with the closed loop system, and seeing the same operation here for years.

So, it, it brings up this question for, for Jon. With some of the older plants, is there any modifications that you've seen will have to be done to address any environmental concerns for lithium recovery at those sites?

MR. TURNER: For, for lithium recovery, it's, it's —— it really is a bolt-on technology. We have to

make sure that the quality of the injection brine at, at the tail end of our geothermal power process is, is sufficient to pass over to, to the lithium process for recovery.

But, aside from that, it really is, is a bolt on technology. Now, from an environmental aspect, it, it does —— not even in an environmental permitting aspect, it does open up when you have, you've added on new facilities and new project onto an existing. It, it does have us look at, at our abatement systems and evaluate any other, other impacts that may have been permitted 30, 40 years ago.

But, as a standard, we're not going for the minimum, we're going for what's right. So, I don't, I don't think that there's going to be anything besides that, that in —— besides ensuring that our, our injection brine quality is sufficient for the lithium (INDISCERNIBLE) that'll impact the existing plants.

COMMISSIONER HANKS: Since, since 2012, I've heard that, that lithium here was a very high grade. I don't know whether that's changed, or what. Is there any of this lithium that's a pharmaceutical grade?

MR. TURNER: So, lithium is lithium. And in fact, when 7Up was originally made, the seven is the molecular weight of lithium. They had lithium in it.

Just like Coca Cola had other ——

COMMISSIONER HANKS: That was back in the days when we were all happy.

(Laughter)

MR. TURNER: That's right. Lithium's lithium. You change the grade of that lithium product by your processing. So, it may have a, a tech grade, which is —— tech grade lithium carbonate might be a 90 percent pure, for example. But, if you want battery grade, you make it 99.5 percent pure. If you want ultra-high lithium carbonate grade, then you make —— you might make 99.995 percent pure. So, it's how you process it to get to that end product.

COMMISSIONER HANKS: So, it kind of gives us a range of wh——

MR. TURNER: Right.

COMMISSIONER HANKS: ——where we're at with it. Okay.

CHAIR PAZ: Commissioner Hanks?

COMMISSIONER HANKS: My last ——

CHAIR PAZ: Oh, your last question?

COMMISSIONER HANKS: My last question.

CHAIR PAZ: We're in synch.

COMMISSIONER HANKS: Now I listened to all

your questions, so just ——

(Laughter)

CHAIR PAZ: I'm the Chair, you gave me the privilege.

COMMISSIONER HANKS: You're going to keep me here till five o' clock anyway.

CHAIR PAZ: You gave me that privilege, Mr. Hanks.

(Laughter)

COMMISSIONER HANKS: So, the, the last question. This is important. With technology, everything changes over a period of time. Electric cars, hydrogen, (INDISCERNIBLE) and so forth. So, my question is this: in the development of batteries, is there any consideration to developing batteries, energy storage for, on the magnitude to of like 200 megawatt battery storage areas? Or (INDISCERNIBLE).

(Pause)

MR. BENSON: Individually by us?

COMMISSIONER HANKS: Well, I'm just ——

MR. BENSON: Just in general?

COMMISSIONER HANKS: Yeah. I'll always hear about electric cars, but I was just wondering ——

MR. BENSON: Yeah, I mean, it's a bit more of a market question. I mean, generally speaking, lithium

is a very light, you know, metal, conductivity, et cetera. So, it, it's best application is a mobile device, right? Your phone, your car.

For utility storage, I think there's going to be a variety of batteries that will serve the functionality of the utility. And, they may be heavy, but you don't care, because they're sitting on the ground and don't need to move. There are lithium batteries that are being used for that. And there are competing technologies that are emerging. So, that may be one application where lithium is well suited, but maybe not best suited. But I think in mobile applications, they will be lithium batteries from here forward.

COMMISSIONER HANKS: I was just —— the reason I brought that up is because, you know, we're looking at transmission out of here. And with all the geothermal potential that we've talked about, it would only seem to me, because of the open spaces and so forth that are available outside of the ag area, that battery storage, this might be the appropriate place. It might be a little more appropriate near the load center, but where are you going to put them? You know? So, if it's next to your transmission lines, I, I think there's some potential there. And also, would be a, a boost to not

only geothermal, but the local area too.

So, I, you know, those are the, are my questions. Okay, I'll turn it back to you.

CHAIR PAZ: Thank you. Commissioner Ruiz.

COMMISSIONER RUIZ: Okay, no.

CHAIR PAZ: You're okay. So, now we will turn over to any questions from the Commissioners that are joining us via Zoom. I will start with Commissioner Weisgall.

COMMISSIONER WEISGALL: Well, as a Commissioner who usually spends a lot of time talking, I'm going to yield. I'm listening to all the various —— no. I, I do not have any questions. I want to commend the panel. This was —— I, I thought I knew most of these issues, but I continue to learn a great deal. So, thanks for an excellent discussion. I did have questions about water and the, the duration of the lithium that I know Professor McKibben is working on. But, I think those all have been covered, so, no questions here from Camden, Maine. Thank you, very much.

CHAIR PAZ: Thank you. Commissioner Reynolds?

COMMISSIONER REYNOLDS: Yeah, this is Alice Reynolds, from the Natural Resources Building in Sacramento. I, also, really enjoyed hearing from the

panelists. I think there's a lot of interesting information, and it will be informative for the Commission's report. But, I don't have any questions at this time. Thank you, Madam Chair.

CHAIR PAZ: Thank you. Commissioner Flores?

COMMISSIONER FLORES: I'll echo Commissioner Reynolds' comments. It was a fascinating discussion, but no questions at this time. Thank you.

CHAIR PAZ: Thank you.

MR. TURNER: Silvia, could I make a comment? I'd like to make a comment relative to the, the chemicals. We, we talked about that a little bit earlier. Almost all the chemicals we use in these geothermal plants, and that we will use in, in mineral extraction are the same chemicals that we use in our household.

Toilet bowl cleaners, et cetera. We talk about hydrochloric acid. It's, it's almost ubiquitous in use in the world and household chemicals. Sodium hydroxide caustic. The concentrations vary, but the precautions on how to handle it, how to use it, et cetera, are virtually the same.

If you go to any, any chemical plant, will have the same types of procedures in terms of chemical handling, chemical offloading from, say, a tanker truck,

if you will. Or, or any other kind of truck.

So, we're not extraordinary relative to chemicals. We are very, very ordinary. And the, the key that we've done out here over the years is, we train the people, and we train the people that are using them, and we train, train, train. And we insist on safe, safe policies to —— in the use of, and the handling of those chemicals.

CHAIR PAZ: Thank you for that clarification. This concludes our panel conversation, and we will now move to public comment. But again, thank you for all the information you've shared.

We will now open the floor to any public comments specific to the workshop presentation. A reminder to limit all comments only to this topic. Keep all comments to three minutes or less. And please state your name for the record.

I want to remind participants and our panelists, this is a public comment period, not a question-and-answer period. All parties are welcome to post questions for the record, but please understand that the Commissioners and panelists will not be providing responses. So, I will start with the physical location. So, here in Calipatria, if there's anyone wishing to make a public comment, you can start making

your way to the podium.

(Pause)

We're waiting for somebody, thank you.

(Pause)

MR. WYUTENS: Hi. Ken Wuytens, and I'm here representing United Way from Imperial County. We're a public service and charitable organization down here in the valley. And, our three main focuses are education, income, and health.

And, particularly talking about income here, because I think these gentlemen are here trying to provide us with a lot of jobs. I wanted to point out, just coming up here on the radio, I heard that Ioneer, I believe that the right name, broke ground today on their Nevada facility, their lithium mine.

So, they broke ground, they hope to go into production in 2024. So, we're behind. And, as I read the local papers, I'm reminded of Pavlov's dogs. There's a possible new tax source has the state and local politicians in high salivation mode before a single pound of lithium is produced. In addition to the taxes, the property taxes, the sales taxes, the fuel taxes, the income taxes, the (INDISCERNIBLE) fees, we're already considering putting another tax on the, on this industry.

They have made a commitment to make huge capital investments. I hear the finger of 200 million dollars per plant. That may be low in today's inflationary environment. And at five percent, if they can sell volumes at five percent, up at the higher interest rates we're experiencing, that's $10 million a year just in interest. I could find a lot of places where you could spend $10 million around here.

This is all new technology. It may work, it may be economically feasible, but that's still to be discovered. And I'd point out that years ago, the lead-acid battery was considered the height of technology. Now, we've progressed through metal hydride, and up to lithium, and who knows what might happen in ten or 20 years. Maybe these people who have invested all this money and a new source, or a new type of battery comes along. So, they need to be sure, assured, that they can get some payback.

So, I would encourage our politicians, our government officials, to please don't kill the goose that may lay the golden eggs. You can't afford to lose a new valuable industry, particularly if rumors of the demise of the sugar industry down here are true. I've just heard in a couple of the last couple days, that this may be the last beet season.

So, let's see. Let's see if I can ready my scribbles here. I would like, I would really hope that we can work between the government officials and the private industry and, and not have an adversarial relationship, but be trying to help each other out. And getting back to the taxes, the county has stated that they need money for, a just one more ——

CHAIR PAZ: You can wrap it up.

MR. WUYTENS: —— for bridges and roads. So, I'm thinking, well, private industry can, can build or construct a bridge cheaper and faster than a government agency can. So, maybe one of these companies might want to say, "Okay, we'll build a bridge in exchange for triple tax credits five years down the road." Or something when they're in production.

So, we've got to think outside the box, and try to make this a success for them, and the valley. Thank you.

CHAIR PAZ: Thank you.

VICE CHAIR KELLEY: I would offer some information. I, I know Mr. Wuytens, and I'm happy to have ——

(Pause)

Sorry, Ken? Ken. Hold on. I wanted to give you the opportunity to —— I do know you, and I am happy

to discuss what has occurred. I am not adversarial to any of this industry. I've been in conversations with them for ten plus years. Different faces, but I am wholly invested in seeing this development occur. And I would be happy to be able to share with you the rationale of where we are and why we are.

MR. WUYTENS: Thank you, Ryan. I, I appreciate that. And I, it's just, it seems like so often down here, we try to get something done, and it doesn't happen. And, this is, they're not the first people that have come in the valley, and —— but I know it's tough to build. And I'm —— I would like to see permitting, our objective, our hope would be to get permitting down to a matter of days rather than months and years.

I know days is unrealistic, but to, to work harmoniously rather than, you know, it ends up on somebody's in-desk in the in-box and nothing happens for months at a time. And so, we just, we need to work on that. Anyway.

CHAIR PAZ: Thank you for your time.

MR. WUYTENS: I appreciate what you're doing.

MR. TURNER: Silvia, can I make another comment, is that okay? Or not.

CHAIR PAZ: No. No.

MR. TURNER: Okay.

CHAIR PAZ: We don't want to have a ——

(Laughter)

——back and forth. Thank you for asking though.

I'm going to see if there's, yes, welcome to the podium.

(Pause)

MS. NOVA-FROELICH: My name is Maria Nova-Froelich, I'm Mayor Pro-Tem of City of Calipatria. Just wanted to share a quick update before, that the City of Calipatria would be happy to work with the developers in regards to getting municipal water. Regarding from our wastewater treatment facility. We do serve the Calipatria State Prison. I understand that the water tank that is there is owned by the state of California. Because it is a State of California State Prison.

And, Golden State Water provides them with water. So, if, if possible, if you write a letter to Golden State Water to be identified as a, as part of the service area, Region 3. Because, they do serve Calipatria, they serve Niland. So, you would just be able to, you know, included. You might have to go through the PUC, through a hearing, or something. Maybe you could ask it to get fast-tracked. But we would be more supportive than, you know, more than happy to be

supportive in regards to that aspect.

Want to say that although we did support the, the tax, I am very supportive of the lithium project. Very supportive of the, of the developers coming. And, very grateful for Mr. Hanks and Mr. (PHONETIC) Cowney, and other local Commissioners and the Commission as a whole for the lithium project.

We are very excited about the lithium project. We think it is a game changer for our community. And, we believe that, you know, we're, we're excited about the, what could happen and what it could bring to our community. But, it can't —— there had been a time —— and I know my time's almost up.

There had been a time where we wanted to serve the city, the, the townsite of Niland, because our wastewater plant has the capacity to be able to serve Niland. And we, there had been money invested in to, for us to serve the Niland. And it didn't happen. But, there's been a lot of talk about annexation, I don't think we could do it right now, but I think that writing a letter to Golden State Water to be part of the service area maybe could be a quick fix to provide water to your geothermal plant.

Thank you very much.

CHAIR PAZ: Thank you. Is there any other

speakers here wishing to make a public comment?

(Pause)

We have one more coming to the podium.

(Pause)

MR. MARIZOW(phonetic): Hi. My name's Michael Marizow (phonetic) from Brawley. I've been following the stories for about four years. I think the paper that first generated the story that came out of the, the Desert Sun and, uh, and uh, I don't know when. Right?

And so, anyway, I'm really optimistic in regards to this plant. I, I hope they, they get their act together in regards to what the (INDISCERNIBLE) need. (INDISCERNIBLE) talking about taxes. It seems like greeds. People are —— politicians are a little bit greedy. Trying to get some money out, and say, "Hey, we gotta get this, and get that," before it's even, even —— nothing's come out yet.

You know? If they step back and, they should say, "You know what? We're not going to tax you guys until after you get it all? You know? And, like maybe, six months, a year. Let's get this project going.

I mean, look at the sto—— here, the Imperial County is usually, right now, the, the unemployment rate is about 16 percent. Usually, in a good year, in a good month, it's 22 percent. Unemployment rate. Right? So,

it would help the community, it would help here in Calipat.

I worked on retirement at the Calipatria State Prison when they said we're going to come in and this is what's going to happen at Calipat. What happened? Nothing. Right? Nothing. Right? So, anyway, I hope this project gets done. And, I wish —— when it, when it first being developed and talking about from the Desert Sun and the newspapers, and somebody say, "Wow. If I had $100 million, I could invest." Right?

It's, it's still not public yet. It's all private. Right? Private, private industry, private funding, all this kind of stuff. Got Elon Musk and all these people trying to pump in $100 million with their money, to get this off the ground. Why? Because there's a lot of revenue.

And, this is the future. Right? This is green energy, also. And, a lot of technology that's going to affect the kids, the schools, and here in Calipat, so people can come and get some good wage, good income. And, this is, this is the future. Know what I mean? Green energy. So, I hope they get their ducks in a row. I hope this thing comes together. And, I hope some day become (INDISCERNIBLE) so, you know I ——

(Laughter)

But anyway, I hope it —— and, and thanks guys, you know, for the information that you guys shared on those topics. So, anyway, thank you.

CHAIR PAZ: Thank you. I do want to just tell you that I understand both the perspectives of the developers, and the public and the tax versus no tax. And those are contentious, you're negotiating, it's always going to be tense when you're negotiating. It's not that there's animosity, it's going to be figured out.

And I also want to put in perspective that, these usually are low-income communities, right? Where projects like this come in and we expect that we're going to be, because we're so hungry for jobs, that we're not going to ask for anything in return. And that's been cyclical. I mean, I live in the Eastern Coachella Valley. It's happens all throughout Imperial Valley.

No one will go to Indian Wells and expect to put in a project and then get, you know, not be taxed or similar issues like that. So, I think we're in a transition of how things are, and our environmental justice communities have asked for additional resources. I know that at the end, it's going to be resolved between the people who are negotiating, but I did want

to uplift that we shouldn't panic because there is a discussion about a tax.

MR. MARIZOW(phonetic): Well, there was an article, maybe about a month ago, in regards to the economic plan that had already developed. Where, Ms., if I, I think —— Calipat had, Calipat and Niland were excluded from it. And this was in the, this was in the newspaper that I read it, in this regard (INDISCERNIBLE) about a month (INDISCERNIBLE).

And I don't think that's cool.

VICE CHAIR KELLEY: That's not true. The ——

MR. MARIZOW: But, I mean, it was in the newspaper.

VICE CHAIR KELLEY: Yeah, just because it's in print doesn't make it true.

(Laughter)

MR. MARIZOW: Well, I'm just ——

(Laughter)

I'm just trying to (INDISCERNIBLE) alright?

CHAIR PAZ: So, maybe ——

MR. MARIZOW: You guys are the ones dealing with that, so I hope it's not true.

VICE CHAIR KELLEY: Not true.

COMMISSIONER HANKS: Are we going to open this up?

CHAIR PAZ: No ——

COMMISSIONER HANKS: I'm going to get in the middle of it.

(Cross-talk)

CHAIR PAZ: Okay, okay. We're going to stop it now. But thank you. Thank you for your comment. Yeah, thank you for your comments.

MR. MARIZOW: (INDISCERNIBLE)

CHAIR PAZ: Speak to your representative after the meeting.

(Laughter)

(Cross-talk)

CHAIR PAZ: That's okay. Good conversations.

I don't see —— do I see anybody else here? I have one other person. And this time, we'll just hear.

MR. ROMERO: I'm Ricardo Romero, with Comite Civico del Valle. I just wanted to give a, some facts. I've heard a lot about the golden goose. So, we have over 20 nations in the world trying to go environmentally friendly with the green energy.

The global demand for lithium is going up. Geothermal's already in place, so the only thing they need to work on is extracting the lithium. If, if there's a history of the industry taking advantage, for, for these communities previously. So, it's a necessity

to, to establish those taxes before we start extracting them.

But, alright, I've ——

(Pause)

(INDISCERNIBLE) Sorry (INDISCERNIBLE).

CHAIR PAZ: Thank you. And, please, anyone who has spoken, if you didn't fill out the public comment form, if you can just fill it out for the record. There is a public comment form here at the podium.

So, seeing no other hands raised here in Calipatria, I will check if there is —— if there are any individuals wishing to speak in Sacramento?

COMMISSIONER REYNOLDS: No individuals are here to speak. Thank you.

CHAIR PAZ: Thank you. So, I will be calling on some places where I believe there's no one, but I have to call them. So, are there any individuals wishing to speak in Franklin Michigan?

(Pause)

Are there any individuals wishing to speak in Maine?

COMMISSIONER WEISGALL: No, there are not.

CHAIR PAZ: Thank you. Are there any individuals wishing to speak in Los Angeles?

(Pause)

There are none.

We will now move to people participating through Zoom. The CEC staff, are there any hands raised, or comments entered in Zoom?

(Pause)

MS. LOZA: Okay. So, a reminder, if you're joining us by zoom on the computer, please use the raise-hand feature. If you're calling in, please dial star-nine to raise your hand and star-six to unmute your phone line.

(Pause)

Okay, I don't see any hands raised, but we do have a few comments in the Q&A box. So, I'll go. For the first one, is from Anonymous Attendee. And it says:

"They all discussed water recycling but did not mention exactly where the water they purchased goes. It will go to evaporation cooling, injection into the geothermal resource, combination with the lithium to become lithium hydroxide, and some to toilets. Can they describe how much goes to each?"

The next comment is from Charlene Wardlow. And it says:

"Has the Colorado River water been tested for lithium concentration? It's the valley's drinking water

supply."

The next comment is also from Charlene Wardlow, and it says:

"The Geysers is a steam dominated resource completely different from the Salton Sea resource, which is 100 percent water."

The next comment is from James Blair. It says:

"Thank you very much for the helpful explanation and discussion of the waste streams. Besides some of the problems already discussed related to water, iron-silica filter cakes, lab waste and acid, it would be useful, or helpful, to hear more of the lead sulfide, which I believe is also mentioned in the EnergySource ATLiS EIR. How will lead be stored and disposed?"

And the last comment is from Galaxy Tab S4 de Dora. And it's in Spanish, so I will have one of the interpreters go into the English channel and translate it for us.

(Pause)

Jasmine, if you can go into the English channel and translate the Spanish comment——

MS. PREZEAU: Hi, Erica? I'm in the English channel. I am, I am in the English channel, and I do

not see the comment.

MS. LOZA: (INAUDIBLE)Oh, it looks its, okay it looks like its been texted, so I will read it.

MS. PREZEAU: Okay.

MS. LOZA: It says:

"There has been talk of chemicals that we use daily and we use them under our responsibility. But here, we are talking about lithium, and its extraction, and I believe, the impact on health and the environment will be harmful. Remembering that there are several communities in the Salton. Now, I ask you, knowing that lithium is a chemical that can harm our communities, what responsibilities would you take if they were to damage our health or damage our environment? How safe will this lithium project be? My name is Cecilia Armenta, and I represent Salton City."

Okay, those are the last comments from Zoom.

Back to you, Chair Paz.

CHAIR PAZ: Thank you. Again, thank you for all the participants, and, you know, the spirit of the discussion. And thank you for all the panelists for all the information and continue to do what you're doing.

We will go back on the agenda to take care of the administrative items. So, if we can pull those back up on the screen.

UNIDENTIFIED SPEAKER: Do we have quorum now?

CHAIR PAZ: Oh, thank you. So, I do —— we achieved —— we reached quorum at 2:07.

UNIDENTIFIED SPEAKER: Oh, good.

CHAIR PAZ: So.

MR. TRUJILLO: Silvia, can I make a comment while we're —— before we leave lithium?

CHAIR PAZ: Do you want to make a comment? Yes.

MR. TRUJILLO: I do.

CHAIR PAZ: Yes.

MR. TRUJILLO: I do.

CHAIR PAZ: There will —— well, there will also be general public comments where you could make a comment, of if you want to wait or ——

MR. TRUJILLO: When would you prefer?

CHAIR PAZ: General public comment.

MR. TRUJILLO: Okay.

CHAIR PAZ: Thank you.

So, these are administrative items. Ahead of you, there's mostly the meeting action minutes that either we ran out of time or lost quorum by the time we got them at previous meetings. So, I would need a motion to approve them.

VICE CHAIR KELLEY: Motion to approve.

COMMISSIONER CASTANEDA: Second. Do we have a quorum?

CHAIR PAZ: Yes, we do. There is a motion by Vice Chair Kelley, and there is a motion, a second by Mr. Castaneda. Can we have roll call, please?

MS. LOZA: Okay. So, Commissioner Castaneda?

COMMISSIONER CASTANEDA: Yes.

CHAIR PAZ: Oh, sorry, sorry. I think we need to public comment ——

COMMISSIONER CASTANEDA: Oh.

CHAIR PAZ: —— before we take the roll. So, I almost skipped that. So, if we can do public comment.

COMMISSIONER CASTANEDA: I gave away my vote.

(Laughter)

CHAIR PAZ: So, at this time we will take public comment related only to the administrative items. So, if there's anyone here in Imperial who has a public comment, now is the time.

I see none. Is ——

Is there anyone in Sacramento?

COMMISSIONER REYNOLDS: Wishing —— there's no one here wishing to make public comment.

CHAIR PAZ: Thank you. Anyone in Franklin, Michigan?

Is there anyone in Maine?

COMMISSIONER WEISGALL: No, there is not.

CHAIR PAZ: Thank you. Are there any individuals in Los Angeles?

(Pause)

Thank you.

So, seeing none, we will now see if there's anyone participating through Zoom who wishes to make a public comment on this item.

(Pause)

MS. LOZA: As a reminder, if you're joining us by Zoom on the computer, please use the raise-hand feature. If you're calling in, please dial star-nine to raise your hand, and star-six to unmute your phone line.

(Pause)

VICE CHAIR KELLEY: I feel like I should be somewhere exotic right now.

(Laughter)

MS. LOZA: Not seeing hands raised or any new comments in the Q&A box, so back to you, Chair Paz.

CHAIR PAZ: Well, thank you. Now, let me ask if there's any discussion on this item?

We had a motion and a second, so if we can do roll call please.

MS. LOZA: Commissioner Castaneda?

COMMISSIONER CASTANEDA: Yes.

MS. LOZA: Commissioner Colwell, is absent.

So, Commissioner Dolega is absent.

Commissioner Flores?

COMMISSIONER FLORES: Yes.

MS. LOZA: Commissioner Hanks?

COMMISSIONER HANKS: Yes.

MS. LOZA: Vice Chair Kelley?

VICE CHAIR KELLEY: Yes.

MS. LOZA: Commissioner Lopez? I believe he's absent.

Commissioner Olmedo? Absent.

Vice Chair Paz?

CHAIR PAZ: Yes.

MS. LOZA: Or, vice —— Chair Paz, sorry.

CHAIR PAZ: Yes.

MS. LOZA: Commissioner Reynolds?

COMMISSIONER REYNOLDS: Yes.

MS. LOZA: Commissioner Ruiz?

COMMISSIONER RUIZ: Yes.

MS. LOZA: Commissioner Scott?

Commissioner Soto?

Commissioner Weisgall?

COMMISSIONER WEISGALL: Yes.

MS. LOZA: Okay. We have seven yesses —— or

eight. Sorry.

CHAIR PAZ: Thank you.

Next slide, please.

Okay, so we had set up some time to speak about the budget. We were hoping to have a presentation on the current status of the budget proposals and final budget decisions. Activity around the budget is continuing, and it is just unfortunate timing to try to have someone from the Department of Finance.

So, at this time we will still welcome Commissioner discussion, and I will lean on Vice Chair Kelley to lead that discussion.

VICE CHAIR KELLEY: Thank you, Chair Paz. Last night, as already been spoken to in a reference, there was Senate Bill 125, and Assembly Bill 208, that were approved by a two thirds majority in both houses. And, they are expected to be signed. They were mirror bills in each house. So, they're expected to be signed today by the Governor.

What was in reference was that there is a lithium tax that is part of that bill language. But there are other items that are in, in those bills. And that is reference items from what Imperial County put forward in February of the Lithium Valley Economic Opportunity Investment Plan.

There is money for a specific plan of Lithium Valley, programmatic of Lithium Valley, an infrastructure assessment, roads, bridges, rail, air, utilities. There is also money for a health assessment for Imperial County.

And, as well as community outreach monies, and supporting a Lithium Valley development office here to be able to help shepherd business development. And when we talk about the specific plan and programmatic EIR, we are talking about helping geothermal, and lithium mineral and other mineral extraction. But, beyond that, we're talking about manufacturing, associated business opportunities, and everything else that we have been and become aware of. We've talked to these companies, and we are including them in to our specific plan.

So, there were a (INDISCERNIBLE), but I know that the one that is getting the most attention is the, the lithium tax. It is based off of metric ton at a fixed dollar amount. $400 per metric ton, up to 20,000 metric tons. 600 up to 30,000 metric tons. And, $800 for every metric ton above that. And there is also a language that is in there that allows an assessment of a gross percentage be applied. And, the timeline on that is, I believe, 18 months, to be able to come back with a report.

No, at this moment, I don't believe anyone will be in production in 18 months. But I would be happy to hear different. But this was not —— the County of Imperial was not in negotiations with industry over these price points. But we did pr—— put forward a plan. The state incorporated that plan in language, and there was a negotiation between industry and the state. And that is the bill that is about to be signed.

And we continue to be here to work with industry, and with IID, and the community to see Lithium Valley be successful.

CHAIR PAZ: Thank you. Is there any Commissioner discussion at this point?

(Pause)

COMMISSIONER HANKS: Yeah, I got a question. And, it goes along with what Mr. Wuytens had to say.

CHAIR PAZ: Can you project louder, pl—— thank you.

COMMISSIONER HANKS: Yeah, I, I have a question that goes on along with Mr. Wuytens. At some point in time, will it, with these analyses coming up, will it inform us of a comparison between what the tax collects and what the owners of the mineral rights receive?

(Pause)

CHAIR PAZ: Do you have any knowledge of that?

VICE CHAIR KELLEY: No, I believe that's going to be ——

(Crosstalk)

COMMISSIONER HANKS: ——come out and study it. It needs to come back.

VICE CHAIR KELLEY: The study that's in the bill references a gross production versus a flat fee, and how that balances out with industry. I don't believe it addresses any of the mineral rights with plant owners.

COMMISSIONER HANKS: It wont, it won't be able to calculate it out until you, you do an analysis and see what the price of lithium is, and whether it's escalated or whether it's lowered. If there's a possibility that it lowers to a point where the tax actually collects more money than the owners of the royalty. And I'm not talking about the developers.

(Crosstalk)

UNIDENTIFIED SPEAKER: That won't happen because there won't be any lithium.

COMMISSIONER HANKS: And in the case of Berkshire Hathaway, then there just so it's almost 100 percent private individuals.

UNIDENTIFIED SPEAKER: Four hundred bucks,

huh. Four hundred bucks in——

CHAIR PAZ: Are there any other comments from Commissioners here?

Seeing none, I will see if Commissioner Weisgall, do you have any comments?

COMMISSIONER WEISGALL: I'm sorry, did you call on me, Silvia?

CHAIR PAZ: Yes.

COMMISSIONER WEISGALL: Sorry, I was coughing. No, no comments. Thank you.

CHAIR PAZ: Thank you. Commissioner Reynolds?

COMMISSIONER REYNOLDS: No comments from me, either. Thank you.

CHAIR PAZ: Thank you. Commissioner Flores?

COMMISSIONER FLORES: No comments here, thank you.

CHAIR PAZ: Thank you. Commissioner Dolega is absent. So, we will now open for public comment relating to the 2022-'23 California budget, specific to Lithium Valley issues. If you are here in Calipatria, please proceed to the podium. To those that are not able to, please raise your hand and we will bring a microphone to you.

If you don't wish to remain anonymous, please spell your name and state your affiliation, and a

reminder to complete the card. And, I believe Mr. Turner maybe your comment doesn't have to wait until general public comment, because I sense it's related to the discussion. So, after (INDISCERNIBLE) you can.

MR. TURNER: It's, I'll, I'll wait till you tell me when.

(Laughter)

MS. NOVA-FROELICH: My name is Maria Nova-Froelich, I'm the Mayor Pro-Tem from the City of Calipatria. I'm also the director of the Family Resource Center here at the school district. So, my —— I have a comment, and I'm not sure if I'm able to ask the question.

So, my question to Mr. Kelley on what was approved yesterday. Was —— does it include legislation that will have earmarked 30 percent to the North End?

VICE CHAIR KELLEY: There's two —— yes.

MS. NOVA-FROELICH: Okay. Good. Because I thought it had gone away, I'm like, oh, no. So, the other comment I want to make is —— my environmental friends. In regards to the 15 percent that's going to be designated to them. Is that going to be taken out of the 30 percent that's going to the North End, or is that going to be shaved off of the County?

VICE CHAIR KELLEY: Are you talking about the

distribution?

MS. NOVA-FROELICH: Yeah. There's like 15 percent that I thought that I saw that was strictly for environmental.

VICE CHAIR KELLEY: Right, so there, there will be a conversation. Those are buckets with placeholders, and we, we did share it on Tuesday. 50 percent for infrastructure, and local government, and mitigation. So, that —— nothing is written in stone, there will be a conversation that we're going to have.

MS. NOVA-FROELICH: Okay. So, we would like to be included in that. And then also on the 30 percent, we're wondering if that's going to Brawley or Calipatria, Niland, Bombay Beach, Salton City.

VICE CHAIR KELLEY: So they ——

MS. NOVA-FROELICH: —— cause, once you include all of those, then ——

VICE CHAIR KELLEY: So, they, the actual language specifies exactly which communities we're talking about.

MS. NOVA-FROELICH: Okay.

VICE CHAIR KELLEY: It says, Bombay, Niland, Calipatria, Westmorland and Brawley, as the areas of significant impact. And all other cities and towns of Imperial County, are the areas of not-significant

impact.

MS. NOVA-FROELICH: Okay. And then, back to the environmental. Pardon me, Mr. Hanks. Back to the environmental, the 15 percent that's going to go to my friends, because they are my friends, I, my concern is that ——

VICE CHAIR KELLEY: Maria, all those, all those percentages are, it's a frame work. And, we're going to have a conversation.

MS. NOVA-FROELICH: Okay.

CHAIR PAZ: If I just, let me just, the questions. I was okay with him clarifying from the budget angle, but I think a lot of the questions you are raising are county, now, decisions, now that the language has been approved. So, at this ——

MS. NOVA-FROELICH: But, I do want to be included for a comment.

CHAIR PAZ: So, you can ask, yeah. You can ask the questions, but Mr. Kelley ——

MS. NOVA-FROELICH: Is not supposed to respond to it. I, I understand.

VICE CHAIR KELLEY: (INDISCERNIBLE)

MS. NOVA-FROELICH: So, the 15 percent that goes to environmental. My concern would be, is it —— if there's an opportunity to cap 'em, because it appears

that it might go to the same five or, five or six environmental agencies. And I'm just thinking that that part is not fair either. Although they're my friends, I think that if, you know, I think that environmental people tend to get rich out of the backs of environmental issues. And, I'm very outspoken and some people might not like it. But it's the truth. And I think that it needs to be capped at a certain percentage when we actually look at it. Because of the fact that it, it's going to take away from a lot of what's actually —— it's supposed to go to, in regards to back to the community. (INDISCERNIBLE).

CHAIR PAZ: Thank you.

MS. NOVA-FROELICH: Thank you very much. Oh, I've, just to finalize my comments in regards to the —— if you need to change the franchise water agreement, we will, if we're allowed by the PUC, to provide water to the, to the plants. Thank you very much

CHAIR PAZ: Thank you.

COMMISSIONER HANKS: Maria, the 30 percent that goes to the cities. (INDISCERNIBLE) saying of how much of that Calipat gets?

MS. NOVA-FROELICH: Well, when I was advocating for the North End, I was hoping for Calipatria and Niland. But now, it's looking like it's

going to be split up into ——

COMMISSIONER HANKS: But what, what's your understanding that in the bill as it is proposed ——

MS. NOVA-FROELIC: I think it's going to include all the cities. But I'm not sure, I haven't seen it. I haven't seen it.

COMMISSIONER HANKS: So, you're at the mercy of the vote from the Board of Supervisors.

CHAIR PAZ: Thank you for your comments.

MS. NOVA-FROELICH: Really quick. Respectfully requesting to be part of it. Thank you very much.

CHAIR PAZ: Thank you. Mr. Turner, you had a public comment on the topic of the budget?

(Pause)

UNIDENTIFIED SPEAKER: That's you.

MR. TURNER: Oh, me?

CHAIR PAZ: Yes.

(Laughter)

UNIDENTIFIED SPEAKER: You're up.

(Laughter)

CHAIR PAZ: You can speak, maybe from —— that's fine. Yeah.

MR. TURNER: So, my comment, in, in, you know, kind of a little bit of a roundabout way, gets to this.

And that is, someone said, or made the statement about, you know, these technologies to extract lithium are new and novel. These, a lot of these technologies have been around since at least the 1960's. I worked for Dow Chemical for 20 years. I have friends that had patents in the 1960's for lithium extracted from hyper-saline brines. Okay?

The issue that we all face, every one of us, is not, not so much the technology and —— can we get, make it work. It's can we make it work economically, so that there's enough profit to attract investors to provide the money so that we can build the plants, and make the product. And so, I know all of look at, we can make it, we can technically make it better, and better, and better. But, can you make it so that it's saleable under today's market?

It wasn't very many years ago that lithium for batteries had virtually almost no value. We didn't see big batteries in cars, we saw, we saw alkaline batteries in the stores. So, our, our real challenge is, making this stuff as economically as we can, so that we can attract financing to build the plants, make a margin so that either our shareholders or the investors get a return on their investment that's economical. I would just ask that everybody keep that in mind when you're

talking about taxes or, or anything else. We, we're working very hard to, to make that thing happen.

The last thing I would say, is let's don't study this for 18 months. I mean, that means everybody's going to work one day a week. Let's, let's get this study done. It's a very important study, let's do it in six months. If we put our minds to it, we can do that. But, otherwise, we just study it today.

It'll turn out just like the Salton Sea. We've studied the heck out of that for 20 years now, since we knew that we were going to transfer water to San Diego. And, we're where we are. So, we can, we can study this thing for six months, get to a resolution that works for people, and then get on with the show.

It will help us as developers attract financing. Because I forget who mentioned it, but the uncertainty in what the, this could bring about, makes an investment, an investor, a little bit hesitant about just writing a check.

CHAIR PAZ: Thank you. Thank you for that perspective. We have another public comment.

MS. FIGUEROA: Hello, good afternoon. My name is Janita Figueroa from Comite Civico del Valle. My comment is regarding the legislation on the Lithium Valley packages and the taxes. I would recommend this

Commission to continue supporting the taxes like they've been tasked. You know, our Assembly Members see the merits that this can bring and see the benefits that it can bring to our communities. And I think that it's fair that industry pay their fair share of coming into our communities.

When you look at the, at the tiered packages, you know, maximum, it'll be one percent on their revenue. So, I think it is what is fair. I think this Commission, its job is to think of the benefit that it can bring these communities and the people. And the people are in favor. People have spoken out, so I would continue to urge them to be in support of these measures, like SB 208 and further.

COMMISSIONER HANKS: Question.

CHAIR PAZ: Thank you.

COMMISSIONER HANKS: One percent, what was the —— what did you base that on? What was the number?

MS. FIGUEROA: Um, on the 800 per, per ton on the tiered system.

COMMISSIONER HANKS: Yeah. Well. You said it was one percent of their ——

MS. FIGUEROA: Yeah, of revenue.

COMMISSIONER HANKS: Of the revenue. What was the, how do you know what their revenue that you were

basing that out of?

MS. FIGUEROA: That, that's basing on the amount of the tenth per, the, the categories that were ——

COMMISSIONER HANKS: Somebody, somebody gave you that number. That one percent.

MS. FIGUEROA: Yeah.

COMMISSIONER HANKS: So, what is the number? What is the revenue going to be based off of?

MS. FIGUEROA: Current value of lithium.

(INDISCERNIBLE)

COMMISSIONER HANKS: We don't know what the price here is. How do you, how do you know?

MS. FIGUEROA: I'm sorry, I just wanted to comment on that.

CHAIR PAZ: Thank you. Thank you. But, that, I did see, I don't know where I read it, but there is, out there, a number on the —— and I believe I heard it from the audience. It is around the current market value, probably, of lithium. And I think that's the number that's being referenced. Because I have heard it before coming here, just don't recall where I read it.

UNIDENTIFIED SPEAKER: We're calculating that based on the current value right now, I don't know how accurate that is. But I think that's ——

UNIDENTIFIED SPEAKER: Yeah, that's,

some(INDISCERNIBLE)

COMMISSIONER HANKS: We're calcu——

CHAIR PAZ: Yeah.

COMMISSIONER HANKS: You're, you're basing it on the current value, but just like with the solar panels, you know, we ——

DR. MCKIBBEN: I'd like to make a comment.

CHAIR PAZ: Thank you. You have a public comment, Mr. McKibben. You can state your name from there, and.

DR. MCKIBBEN: Okay. Mike McKibben, UC Riverside. I just want to remind everybody that the mineral industry is taxed three times. They're taxed for identifying the resource in the ground. They're taxed for severing it from the ground, for mining it. And then, they're taxed when they sell it.

These additional taxes imposed by the state are on top of that. So, now they're being taxed four times.

CHAIR PAZ: Thank you.

DR. MCKIBBEN: Most commodities don't get taxed four times.

CHAIR PAZ: Thank you. Are there any public comments?

(Off mic)

(Laughter)

Are there any other public comments?

Seeing none here in Calipatria, I will see if there is anyone in Sacramento who is wishing to speak.

COMMISSIONER REYNOLDS: No one here wishing to speak, thank you.

CHAIR PAZ: Thank you. Is there anyone in Franklin, Michigan?

(Pause)

Is there anyone in Maine?

COMMISSIONER WEISGALL: No, there is not.

CHAIR PAZ: Anyone in Los Angeles?

(Pause)

Now I will turn it to the CEC to see if there are any public comments on the budget discussion that came through the Zoom platform.

MS. LOZA: Okay. If you are joining us by Zoom on the computer, please use the raise-hand feature. If you've called in, please dial star-nine to raise your hand, and star-six to unmute your phone line.

(Pause)

Okay, there are no hands raised and no new comments in the Q&A box, so back to you Chair Paz.

CHAIR PAZ: Thank you. And I think we should now be on slide number 21.

(Pause)

(Laughter)

So, this is a discussion and possible action on the draft findings and recommendations that were identified during the incentive workshop, held on May 26th. You were all provided, and it has been docketed. A draft document that shares findings and recommendations from that workshop. Again, it's only meant to capture what was in the discussion. That's really not exactly the way that the report is going to look. But the intent is that we start gaining consensus on some of the items, workshop for workshop.

So, at this point if there are any questions, recommendations, on the draft findings.

(Pause)

I do not see anyone here in Calipatria from the Commissioners, so I will ask Commissioner Weisgall, do you have any comments, questions, recommendations?

COMMISSIONER WEISGALL: I do not, Chair Paz. I —— and, I mean, recognizing you, right. This is, this is sort of a compendium of what we discussed and will not necessarily be what's in the final report. But I think it, I think it did a good job of capturing the, you know, really condensing that several hours of, of discussion on incentives. So, I think it's a good

document.

CHAIR PAZ: Thank you. Are there any questions from Commissioner Reynolds?

COMMISSIONER REYNOLDS: No. Thank you, Madam Chair,

CHAIR PAZ: Thank you. Any questions, Commissioner Flores?

COMMISSIONER FLORES: No questions at this time. Thank you.

CHAIR PAZ: CHAIR PAZ: Let's see. We will now open the floor to any public comments relating to the findings and recommendations that were identified during the Incentives and Investments Workshop.

(Pause)

So, for public comments on this item, again, we will first take comments from people here in Calipatria. Is there anyone wishing to speak on this item?

(Pause)

There's no one here in Calipatria. Now, I will check in the physical locations. So, are there any individuals in Sacramento, California wishing to speak?

(Pause)

COMMISSIONER REYNOLDS: No one here wishing to speak, Chair.

CHAIR PAZ: Thank you. Are there any individuals in Michigan wishing to speak?

(Pause)

Are there any individuals in Maine wishing to speak?

COMMISSIONER WEISGALL: No.

CHAIR PAZ: Thank you. Are there any individuals in Los Angeles wishing to speak?

(Pause)

Thank you, we will now move to people participating through Zoom. CEC staff, are there any hands raised, or comments entered via Zoom?

MS. LOZA: If you are joining us by Zoom on the computer, please use the raise-hand feature. If you've called in, please dial star-nine to raise your hand, and star-six to unmute your phoneline.

(Pause)

Okay. So, we have a comment in Spanish. Again, if one of the interpreters can go into the English channel and translate it.

(Pause)

Jasmine, if you could go into the English channel and translate the comment.

(Pause)

MS. PREZEAU: Can you hear me? Hi. Can you

hear me? Me puedes escuchar?

CHAIR PAZ: Si.

MS. PREZEAU: Okay. Muy Bien.

So, if the person that is speaking Spanish would like to speak now. Si pueden hablar, por favor.

(Pause)

Adelante.

(Pause)

CHAIR PAZ: Erica, was this a person or a comment that was typed in the chat?

(Pause)

MS. LOZA: Looks like, oh—— okay.

MS. PREZEAU: I'm going to read it, sorry. I'm going to read it out loud. It, it was typed.

CHAIR PAZ: Thank you

MS. PREZEAU: So, thank you. Hi. I would like to talk about (OFF MIC) for the Spanish speaker.

I, I see it written in the Q&A. Okay.

MS. LOZA: It looks like Jasmine is waiting for the Spanish speak, but it is a written comment. It should be in the Q&A box, Jasmine.

MS. PREZEAU: I am speaking now, and I am reading it out loud, in English, if that's okay.

CHAIR PAZ: Yes, we can hear you here in Calipatria, Jasmine. Go ahead.

MS. PREZEAU: Okay. Oh gosh. Ya, no la puedo leer. Okay.

Okay. Disculpa.

Okay: "Hi. I would like to comment about my concerns about the extraction of Lithium. The impacts to the environment do—— based on the extraction of lithium are: consumption of water, modifications to the landscape, an alteration ——

(Cross-talk)

MS. CARILLO: Chair Paz this is Deana from the Sacramento location just to note that we don't have a quorom, we don't think, from Vice Chair Kelley leaving the room, so we won't be able to take a vote on this item at this time.

MS. PREZEAU: —— an alteration in the natural——

CHAIR PAZ: Okay, there is a lot of cross, I don't know, wires here. There's multiple people speaking. If we can —— the, the comment is not related to the item, so can we read it during the general public comments please?

MS. PREZEAU: Yes, yes.

CHAIR PAZ: Okay, thank you.

And um, yes, we're not taking a vote right now because Commissioner Kelley just got up to take a break,

but he will be back shortly. So, at this ——

UNIDENTIFIED SPEAKER: Thank you.

CHAIR PAZ: Mmm hmm, thank you.

And, are there any additional comments here? No?

COMMISSIONER CASTANEDA: Yeah.

CHAIR PAZ: From the Commissioners?

COMMISSIONER CASTANEDA: Well, I've ——

CHAIR PAZ: Commissioner Castaneda?

COMMISSIONER CASTANEDA: It's a comment, it's not related exactly to what is written in the report. But, I do want to make a, a comment, and I think this is a good opportunity. Because, I think that Commissioner Weisgall said that, you know, it's a good compendium of our, of our discussion, and there may be more information available.

And I just want to say, that last week I had an opportunity to, to join a panel of —— in Chicago, with the National Association of Latino Elected Officials. And, I sat with a gentleman. His name is Alex Schroder, and he is the Executive Director of the, I'd like to get this right, of the Office of Energy and Transportation, who, it was just created by Executive Order by President Biden a few months ago.

And so, I —— they asked me to talk about this

Commission and the work that we were doing. Mr. Schroder provided a lot of information on the seven or eight billion dollars that has been made in the, the Bipartisan Infrastructure Plan. And I extended an invitation to Mr. Schroder to join our meeting, and I would just like to see whether or not the Chair would, would like me to officially work with the CEC to officially ask him to, perhaps, talk about the bill. Excuse me. Not the bill, but, but the funds that are available for EV, you know, vehicles, battery related infrastructure, and, and processing and so forth. And perhaps there is some additional information on incentives, and benefits that might be available to all of the work that we're doing here. So, I'd like to——

CHAIR PAZ: And you think those are in addition to the benefits on that ——

COMMISSIONER CASTANEDA: These are from the federal government. Most of what we've talked about was the state.

CHAIR PAZ: We had a speaker from the federal government, and from the Secretary of Energy's department.

COMMISSIONER CASTANEDA: Right.

CHAIR PAZ: At the last meeting.

COMMISSIONER CASTANEDA: So, and again, I ——

that's why I wanted to bring it up. And, and so, Mr. Schroder is, is both from the Department of Energy and from the Department of Transportation. So, he may provide more information, I just put that out.

CHAIR PAZ: Let's talk offline and plan with the CEC. And the reason why, as you'll see later in our discussion, it's just planning for the future meetings——

COMMISSIONER CASTANEDA: We've got a lot of meetings.

CHAIR PAZ: —— that we have.

COMMISSIONER CASTANEDA: I know

CHAIR PAZ: What we have lined up already, but I think there might be a way, so.

COMMISSIONER CASTANEDA: Okay.

CHAIR PAZ: I just don't have a ——

COMMISSIONER CASTANEDA: Okay, thank you.

CHAIR PAZ: ——solid view of that right now.

So, we, we're not able to make a motion at this point. So, we will move on to slide number 23 please.

(Pause)

And this is an item um —— yeah. This is an item that we are deferring to a future meeting. Simply because we, we didn't get the draft findings and reports

on time. And, let's see.

So, planning for upcoming Lithium Valley Commission meetings, this is what I was talking about. Our next meeting is scheduled for July 21st. And that meeting is booked as an all-day meeting. I understand that the CEC team is supporting us in bringing together a panel of tribal representatives for our workshop session during the July 21st meeting.

The meeting location is still being established, and could be hosted by the Torres Martinez at a local school. So, just for anyone needing reference, the Torres Martinez is located in the community of Thermal.

At the last meeting, I mentioned that we may use at least part of the July 21st meeting to discuss the draft reports. But, since we have a few more critical activities to complete before the draft report is finalized, that timing will change. Since we will have some time on the 21st, I would like to propose that we also coordinate a panel of local community members for the other half of the day. This can support the next update that I want to provide, which is around community engagement.

Commissioner Olmedo wasn't able to join us today, but he asked me to share the work that he's doing

with a few other of the Commissioners on community engagement. So, I know Mr. Frank Ruiz, and Mr. Ryan Kelley, along with Mr. Olmedo, are part of the ad hoc community engagement committee.

He and a couple other Commissioners have conducted some community engagement on their own and have also been working with CEC staff to plan community engagement events over the next few months, as we work to develop and finalize our report to the legislature. He has also asked the CEC to review the record and develop preliminary findings and recommendations specific to future community engagement for discussion and consideration by this body and possible inclusion in the report. And that item be placed on the next meeting agenda for consideration and discussion, which will work well if we are also holding a community organization panel.

So, would Commissioner Frank Ruiz like to add anything on this topic?

COMMISSIONER RUIZ: Sure, sure. We had several discussions with members of the CEC and Commissioner Kelley, and Commissioner Olmedo. And, we, we discussed community engagement based on two premises. One, is that it should be an ongoing process. Community engagement shouldn't be, just, you know, something that,

that should be done by the end of, you know, this report, but it should be something that should continue.

And as a matter of fact, we feel that it should have started from the beginning. Unfortunately, we didn't get the, the —— an engagement process going on from the beginning. But we feel that this is something that should have been done instead of then just, you know, trying to figure it out right now, it should have been done, you know, a long time ago.

However, we agree that this is something that should continue to continue allowing the community knowing what is going on, what is happening, what is it, how the processes is going. And allow the community to know what is information and what are some of the actional items, you know, where they can influence the process.

So, that is, you know, what the, what the process will look like. Well, that's our recommendation, you know, to the CEC —— to continue, even after, you know, this body, you know, is no longer active.

CHAIR PAZ: Thank you. Commissioner, Vice Chair Kelley, do you have anything to add on the engagement ad hoc committee and discussions that you've been having?

VICE CHAIR KELLEY: I —— so, as Commissioner Ruiz mentioned, we did have an, a meeting, and I think we're in agreement that we should be making a request for some funding, I know that there's been challenges in even these settings of being able to have the equipment and staff and last minute (INDISCERNIBLE) trying to cobble things together, so that these could be open.

And so, I, I support the recommendations of Commissioner Ruiz and Commissioner Olmedo that we make a request for the augmentation to be able to do supporting these actual committee meetings, Commission meetings, and also community outreach.

CHAIR PAZ: Thank you.

VICE CHAIR KELLEY: And I'll also add, tonight, in Niland, at 6:00 that (INDISCERNIBLE).

CHAIR PAZ: Thank you. And first of all, thank you for the individual outreach that you all have been already doing. I know that some of the communities members from West—— where was it, West Shores right there, seeing flyers and things, but they see them mostly, like, if they come to Brawley. So, just putting a, a plug there for the communities of West Shores and see how, if there was additional funding and capacity, not forgetting that they also want to be included in the conversations.

So, so here's the questions that I have, or can—— just for you to consider and see if you have any thoughts. I mentioned the 21st meeting, and what it's looking like, again, to summarize, is maybe a morning panel, potentially tribal. Well, on the tribal topics —— and I'm saying potentially not because the topics going to change, but just depending on who goes first.

So, having a tribal panel, tribal perspectives panel. And then, having also a communities perspective panel. And, when we are talking about community perspective panel, we're not talking about bringing like the CBO representatives that I think we've heard in the past. I think the CBOs have been well represented. But I think we haven't heard, throughout our panels as much as we would like, from residents in the region.

So, the idea is to identify a panel between now and then, and I —— the CEC will support in talking to the CBOs or others helping identify, you know, the members to be on the panel. And so, that would probably give us maybe the missing links or voices that, that we've had in the process.

So that would be in the first the location? Again, it's being proposed right now as happening potentially in the Torres Martinez, which makes sense to me, since we're having a tribal panel that, you know,

it's hosted in a location where they feel comfortable.

The only, maybe, question —— and I don't know if any of you have perspectives, is, is that since we're also doing a community panel, and there's communities in both sides of the Salton Sea, that that's not going to create like any unintended tensions, right? So, that's why I'm bringing it up ——

(OFFMIC)

MS. LOZA: Giana, one of the mics in Calipatria turned off.

COMMISSIONER REYNOLDS: Oh, there's no focus.

(Pause)

COMMISSIONER WEISGALL: Lost hearing up in Maine also.

(Pause)

MS. LOZA: Hi everyone, let's just sit tight and figure out the technical issues at Calipatria.

(Temporarily off the record, 3:02:49)

(Pause)

(Return to record, 3:04:43)

CHAIR PAZ: We're back. Fake news, the break is not it.

(Laughter)

No break.

UNIDENTIFIED SPEAKER: We made one

(INDISCERNIBLE).

CHAIR PAZ: Okay. So, we are continuing the discussion about the potential locations and the intent of having both a tribal panel perspective and community panel perspective. So, we've heard from Vice Chair Kelley about potentially separating them, so that we could have the tribal panel in the Torre —— with the Torre Martinez tribe, and then a community panel maybe back in this location.

But, that we were also talking about the geographic challenges when we're thinking about our region. Even though not everyone's going to be impacted as much as, you know, Calipatria and Niland, which are closer proximity, there are other regions in the Eastern Coachella Valley and West Shores who have been following along from the beginning as well, the conversation.

COMMISSIONER HANKS: Is it going to be open to all tribals?

CHAIR PAZ: Yes. The —— my understanding, and I couldn't tell you, like, which tribes, but Commissioners, I'm blanking on the names of our Commissioners. Richie, yeah, Arthur. He is working with our other Commissioner, and Manfred, right? And they are, they have reached out to other tribes to engage them in this topic.

COMMISSIONER HANKS: Including the ones in Imperial County.

CHAIR PAZ: I cannot confirm, but I will ask. I'm sure they have. But yeah, they were very inclusive. And, you know, they're following the process. And part of their process is hearing from other tribal perspectives, so that they're not the only ones here coming and speaking for the tribes. So, they've been planning this for several, several months now.

COMMISSIONER RUIZ: Yeah, and thank you, Chair Paz. I just wanted to reiterate my comment to hear from the tribal communities. And, and even the communities on the north end of the sea. Even though, as you mentioned, they're not directly impacted as communities like Niland and, and Calipatria. However, I think it is important to hear their perspective, and just take advantage of this opportunity. To, if you listen to the residents, and listen to the tribes at the same time.

CHAIR PAZ: Yeah. An idea, and I don't know if we would have to figure out the logistics, given technology, but I know we've done, in the past for the, the forum that we had. We did have satellite locations. So, perhaps we could have one of the tribes with the Torres Martinez and then it could be another location in this area and another location if needed elsewhere. And

then, we as Commissioners, at least the ones who plan to attend regularly physically, can —— we can coordinate, right? Like who's going to be there, that way we're not ignoring the community members. And maybe that's something, but yeah, we would have to figure out all the technology, and I mean, Comite del Civico has been great in helping us achieve that with the technology and the County. But, if we would face maybe a limited of resources, right? In terms of the capacity of how many locations we could serve. But, that's a consideration, maybe to make it all work out.

Good. So, are there any comments on this topic from Commissioner Reynolds or Commissioner Flores, or Commissioner Weisgall?

COMMISSIONER WEISGALL: Nothing from Commissioner Weisgall.

CHAIR PAZ: Thank you.

(Pause)

Commissioner Flores and Commissioner Reynolds?

(Pause)

COMMISSIONER REYNOLDS: Nothing to ask, thank you.

CHAIR PAZ: Thank you.

Okay. So, we will now open this conversation to public comment. And, we will start here in

Calipatria.

(Pause)

MS. RUIZ: Hi, good afternoon everyone. My name is Silvia Ruiz. I am a resident of the East Coachella Valley. And, I work at Alianza. Just a couple of comments. I —— thank you to Commissioners Frank Ruiz, Luis Olmedo, Vice Chair Kelley for providing the update on community engagement they have done. Really appreciate the individual work that you have all done to really set the awareness and include community members in these discussions.

And, I would like to support the request to, and urge the Energy Commission to provide resources, funding for the Lithium Valley Commission to expand on the capacity outreach—— expand capacity to do outreach and engagements. As Chair Paz mentioned, there is so much these individuals and their respective organizations can do outreach and engagement. If they're provided with resources that can help expand the capacity, there can be that opportunity to help folks that feel excluded in these conversations to be a part of these conversations, know when these meetings are happening, we would coordinate, do what they can to attend.

And I also support the idea of a community

panel that may, I mean, matching of course as (INDISCERNIBLE), Imperial Valley, but —— it's (INDISCERNIBLE) for accounting, but also having community members from Salton City, additional community members of the West Shores region, and the East Coachella Valley in this community panel. And, I also would support the idea for having remote meeting locations for these panels. I know that as it did turn out would be great, would have (INDISCERNIBLE) locations.

When these Lithium Valley Commission meetings happen, but I understand that some mentioned you have limited resources capacity to be with, hold remote locations. But, overall I'm giving support on, like, if the community panel and whatever works best to make it to accommodate where the Lithium Valley Commission, sorry, and residents. So, we could (INDISCERNIBLE) to the side, but we did in general support the idea of a community panel for the July 21st meeting. Thank you.

CHAIR PAZ: Thank you. Is there anyone here in Calipatria wishing to make a comment on this topic?

Okay, I have several ——

Linda, can you —— Okay.

And you can take the form with you, and then turn it in.

MS. NOVA-FROELICH: Maria Nova-Froelich, City Mayor Pro-Tem. So, I think it's a good idea for that community panel. If there's an opportunity for me to sit in, I've participated in most of your workshops, I think that the trainings and everything that's coming together, I think it's very educational.

I want to say that, if there's going to be a presentation in Westmoreland, or up there in Thermal, the plan to extend either via Zoom or ——

CHAIR PAZ: Thank you.

MS. FIGUEROA: Hello, Janita Figueroa, Comite Civico del Valle. I would also like to support the idea of remote locations for the next meeting. And also, I would also encourage the idea of Q&A portions being included in these meetings. I think it's come up multiple times, and it would be beneficial to have more conversations with the Commission, rather than simply just have public comment.

CHAIR PAZ: Thank you.

(Pause)

Dr. McKibben? You can speak from there.

DR. MCKIBBEN: Alright. I just wanted to say that we received funding from the Department of Energy to hire students to do public outreach on geothermal lithium. So, we have both undergraduates starting July

1st and graduate students, who could out and do outreach. Whether that's with community groups of K-12. Please contact me if ——

CHAIR PAZ: Great.

DR. MCKIBBEN: —— if you're interested.

CHAIR PAZ: Thank you. That's a great resource.

There any public comments here in Calipatria?

Okay. Seeing none, I will now check if there are any individuals wishing to speak in Sacramento?

COMMISSIONER REYNOLDS: No one from the (INDISCERNIBLE) wishing to speak. Thank you.

CHAIR PAZ: Thank you. Are there any individuals wishing to speak in Michigan?

(Pause)

Commissioner Weisgall, are there any individuals wishing to speak in Maine?

COMMISSIONER WEISGALL: Ah, no. No, there are none.

CHAIR PAZ: Thank you. Are there any individuals wishing to speak in Los Angeles?

(Pause)

We will now move to people participating through Zoom. CEC staff, are there any hands raised or comments entered in Zoom?

MS. LOZA: As a reminder, if you are joining us by Zoom on the computer, please use the raise hand feature. If you have called in, please dial star-nine to raise your hand, and star-six to unmute your phone line. So, the first hand raised is from LCJA, ECV Office. You should be able to unmute yourself.

MS. LOERA: Hello, this is Mariela Loera, with Leadership Council. It's great to hear that you all are planning this panel. I would encourage that we have more of these from now until the report is due. I'm —— I am really concerned that the report doesn't reflect community input and perspectives enough, due to the lack of engagement thus far. So, it's great to see this now, and hopefully it happens more often to let those can be included.

I agree that, while Imperial County communities should be prioritized in the panel, residents from the Eastern Coachella Valley should also be represented. I think the (INDISCERNIBLE) location that was used during the forum in November was great, so would suggest just feedback on that one was good.

I would like to see more updates on the work that is being done by this ad hoc committee. I think this is great, so just having more consistent information, maybe putting that in the docket and seeing

the docket more, more consistently would be great. Thank you.

CHAIR PAZ: Thank you.

MS. LOZA: Okay, we do have one comment in the Q&A box and it says—— and it's from D.M. Corn. And it says:

"If the $400 per ton tax is imposed as seems likely, and each of the three companies produces ——

CHAIR PAZ: Can you,

UNIDENTIFIED SPEAKER: Sorry.

CHAIR PAZ: Can you —— Excuse me. Can you please read these during the general comments and only read the ones that are related to the topic we're discussing?

MS. LOZA: Yeah, sure.

CHAIR PAZ: Thank you.

(Pause)

MS. LOZA: Those are all of the comments. Back to you, Chair Paz.

CHAIR PAZ: Thank you. So, my last comment is that we're at the end of June. We have plans for our next meeting, and then we will be working towards the draft report and ultimately a final report. There may be a need for additional meetings to get through these activities. And it will be critical that the

Commissioners all attend, and provide their input.

So, I just want to mention that we may identify additional meeting dates in the future, and, of course, we will provide the public notice of all planned meetings in advance and we will be in communication, or the CEC will be in communication with the Commissioners as we identify any future meets, since our deadline for the report is in October. So, we're right around the corner.

This is not a voting item, so I would just like to turn to Commissioners, I think we already took comments, so that is it on this topic.

So, slide number, what are we? Next slide, please.

Do we have any media and legislative updates?

Oh, no. So, we were informed there's no media and legislative updates today.

Commissioners, do you have any updates you would like to present at this time? And, I will do it in the form of a roll call, just to make sure we don't miss anybody. And, if you do —— you don't have any updates you can pass. And if you do, I ask you to be concise and just remember to identify yourself before providing your update. But, I'll be doing roll call, so maybe you don't need to identify.

So, I will start here with Commissioner Hanks. Do you have any updates?

COMMISSIONER HANKS: Nope.

CHAIR PAZ: Thank you. Commissioner Frank Ruiz, do you have any updates?

COMMISSIONER RUIZ: No.

CHAIR PAZ: Commissioner Ryan Kelley, do you have any updates?

VICE CHAIR KELLEY: I have none.

CHAIR PAZ: Commissioner Castaneda?

COMMISSIONER CASTANEDA: Nope. Thank you.

CHAIR PAZ: Commissioner Weisgall?

COMMISSIONER WEISGALL: No.

CHAIR PAZ: Commissioner Flores?

COMMISSIONER FLORES: No updates, thank you.

CHAIR PAZ: Commissioner Reynolds?

COMMISSIONER REYNOLDS: No update from me, thank you.

CHAIR PAZ: Thank you, and I have no additional updates either.

We will now go to public comments. And again, we will now take public comments on the informational items, which there were none. So, if you have a general public comment, please hold until we call on general public comments. But I will see, are there any public

comments here in Calipatria about informational items?

No? I do apologize, but I have to do this every time. So. Commissioner Flores and Commissioner Reynolds, are there any individuals wishing to speak in Sacramento?

COMMISSIONER FLORES: No, no one's here wishing to speak. Thank you.

CHAIR PAZ: Thank you. Commissioner Dolega is not here, but are there any individuals wishing to speak in Michigan?

(Pause)

Are there any individuals wishing to speak in Maine?

COMMISSIONER WEISGALL: No, there are not.

CHAIR PAZ: Thank you. Are there any individuals wishing to speak in Los Angeles?

(Pause)

We will now move to people participating through Zoom. CEC staff, are there any hands raised or comments related to the informational items?

MS. LOZA: As a reminder, if you are joining us by Zoom on the computer, please use the raise-hand feature. If you've called in, please dial star-nine to raise your hand and star-six to unmute your phoneline.

(Pause)

I don't see any comments or hands raised. Back to you, Chair Paz.

CHAIR PAZ: Thank you. And, we had —— I'm taking this item out of order, I just need to go back to it, to slide number 23. Since we have lost quorum. We did discuss the possible actions and draft findings on workshops held on June 16th. And there was discussion and there was public comment already. But, I just need a motion to accept the possible action on draft findings from workshops held on June 16th, 2022.

COMMISSIONER WEISGALL: So moved.

CHAIR PAZ: Thank you.

COMMISSIONER CASTANEDA: Second.

CHAIR PAZ: Thank you. There's a motion by Jonathan Weisgall, there is a second by Commissioner Castaneda. Any discussion from the Commissioners?

I do have a question for you all. We've been integrating this in the last few meetings, again, as a way for us to start seeing some of the writing and thought that is informing the report. We are getting close to having to have the final draft report —— the draft report and then the final.

Should we continue trying to capture things in this way after every workshop? Has it been helpful? Or are we okay with maybe stopping this for now and then

just wait until the draft report is. And, it's not a —— it's just conversation. There's no decision being made here. Just wanted to hear your thoughts.

(Pause)

COMMISSIONER WEISGALL: I'll just jump in. I, I think capturing, capturing comments as close to the time of the meeting as possible makes a lot of sense.

CHAIR PAZ: Okay. Thank you.

That was the only thing I wanted to have for discussion, but we do have a motion and a second. So, roll call please?

MS. LOZA: Okay. Commissioner Castaneda?

COMMISSIONER CASTANEDA: Yes.

MS. LOZA: Commissioner Colwell?

Commissioner Dolega?

Commissioner Flores?

COMMISSIONER FLORES: Yes.

MS. LOZA: Commissioner Hanks?

COMMISSIONER HANKS: Yes.

MS. LOZA: Vice Chair Kelley

VICE CHAIR KELLEY: Yes.

MS. LOZA: Commissioner Lopez?

Commissioner Olmedo?

MS. LOZA: Chair Paz?

CHAIR PAZ: Yes.

MS. LOZA: Commissioner Reynolds?

COMMISSIONER REYNOLDS: Yes.

MS. LOZA: Commissioner Ruiz?

COMMISSIONER RUIZ: Yes.

MS. LOZA: Commissioner Scott?

Commissioner Soto?

Commissioner Weisgall?

COMMISSIONER WEISGALL: Yes.

MS. LOZA: Okay. There are eight yesses.

MS. CARILLO: And, Chair Paz, this is Deanna Carillo reaching out from Sacramento. Just a note, or a correction that this is from the May 26th meeting, not June 16th, just for the record.

CHAIR PAZ: Oh, thank you. And, I just saw your text and responded.

MS. CARILLO: Great, thank you.

CHAIR PAZ: We'll clear a spot for that. Thank you.

Okay, so we will now turn to general public comments. I will open the floor for general public comments, and there is a two-minute limit. Any individuals wishing to make general comments here in Calipatria, you can either raise your hand or come to the podium.

(Pause)

Is that a yes or a no?

No? Okay. So (INDISCERNIBLE).

I see no hands raised here. Are there any —— is there anyone wishing to speak in Sacramento?

COMMISSIONER FLORES: No, no one here. Thank you.

CHAIR PAZ: Thank you. Is there anyone wishing to speak in Michigan?

(Pause)

Is there anyone wishing to speak in Maine?

COMMISSIONER WEISGALL: No.

CHAIR PAZ: There anyone wishing to make any comments in Los Angeles?

(Pause)

Now we will move to people participating through Zoom.

MS. LOZA: As a reminder, if you are joining us by Zoom on the computer, please use the raise-hand feature. If you've called in, please dial star-nine to raise your hand and star-six to unmute your phoneline.

Okay, so there is two comments. And the first one's from D.M. Corn. It says:

"If $400 per ton tax is imposed and seems likely, and there are three companies producing 20,000 tons per year, the taxes collected will total 24

million. If Imperial County receives 80 percent of that, that is 19 million. Question number one, is that tax money going to be sequestered and not commingled with count general funds so it is used exclusively to support the lithium extraction industry? And number two, does Imperial County intend to spend 19 million per year on lithium industry related expenditures?"

(Pause)

And the second comment was from D.M. Corn, and it just says to read the general comment above, and I did. Thank you.

CHAIR PAZ: Thank you.

MS. LOZA: Mmm hmmm.

CHAIR PAZ: That is it for today. We made record time.

(Laughter)

The meeting is adjourned at 4:25.

(Whereupon the meeting was adjourned at 4:25 P.M.)

CERTIFICATE OF REPORTER

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

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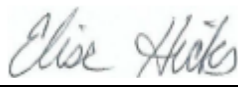
IN WITNESS WHEREOF, I have hereunto set my hand this 27th day of July, 2022.



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And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 27th day of July, 2022.

Myra Severtson
Certified Transcriber
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