

ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTY OF HAWAII

MEETING MINUTES

Friday, June 23, 2023

9:03 a.m. to 11:31 a.m.

Hawai'i County Building, Hilo, and Zoom

Commissioners present:

Georjean Adams, Chair

Jon Olson, Vice Chair

Laura Acasio

Melissa Cardwell

Lee McIntosh

Dell Otsuka¹

County staff present:

Ramzi Mansour, Director

Craig Kawaguchi, Recycling Coordinator

Christopher Laude, Acting Wastewater Division Chief

Peter Sur, Secretary

Sherilyn Tavares, Deputy Corporation Counsel

Douglass Adams, Director of Research and Development

Wendy Baez, Legislative Assistant, Council District 8

Others present:

Cory Harden, Kristine Kubat, Jennifer Navarra, Michael Brestovansky, Ellen Okuma, Nicholas Riznyk, Mike Ewell, Keith Neal, Keoni Ford, Ellie Moss, K. Kuulei Kanahale, others.

I. CALL TO ORDER

Chair Adams opened with a roll call and called the meeting to order at 9:03 a.m.

II. APPROVAL OF MINUTES FOR MEETING ON MAY 24, 2023

Motion, second, and vote: Commissioner Acasio made a motion, to which Vice Chair Olson seconded, to approve the minutes as presented. Ayes 5 (Acasio, Cardwell, McIntosh, Olson, Adams); Absent 3 (Burns, Otsuka, Norris). Motion carried.

¹ Present via Zoom; not participating for purposes of quorum.

III. STATEMENT FROM THE CHAIR

Chair Adams said we have some interesting topics to go through today and perhaps tee up for next time. So, looking forward to the discussion today.

IV. PUBLIC STATEMENTS ON ITEMS ON THE AGENDA

Cory Harden:

Good morning, Commissioners, and thank you for your volunteer service. I'm speaking on three items, but just briefly. Don't worry.

So, on VI.2 on the reusable foodware, it's a very interesting idea and I definitely wish Jennifer success with this wonderful idea.

On V.2, the landfill diversion ordinance, I support keeping recycled out of the landfill, but I don't support incineration. We've done that movie twice already with the proposals in 2008 and 2015. We had months of divisive debate and they were finally shot down. And as you know, at H-Power on Oahu, taxpayers are paying penalties because they can't generate enough garbage to fulfill the contract.

And last on VI.1, Douglass Adams speaking on Yummet and hydrogen. First, I have a lot of respect for Doug Adams, but I have a lot of concerns about Yummet and how the county is interacting with them. I think that to see the Yummet project in Minnesota, Mr. Adams had to sign a nondisclosure agreement so he can't tell the taxpayers who paid for his trip what he did on the trip. I did speak with Brittany Zimmerman, CEO of Yummet, when she was at the Climate Fair, and I asked if Yummet has any actual projects up and running. She said there were five in several states. But to get information, I would also have to sign a nondisclosure agreement. As you know, Resolution 73-23, which seems written for Yummet, never came to you folks. It skipped the normal review and was fast tracked to the full County Council, and their numerous supporters who were apparently organized in advance, testified in support, and the public got less than a week's notice. Brittany Zimmerman has been speaking to influential individuals and groups statewide for months. And that begs the question of why the CEO of a large company with actual financial backers would spend time chasing county resolutions that have no force of law. And I don't think she's ever mentioned a physical corporate headquarters. Zimmerman claimed that Yummet facilities could remove 1 billion tons of carbon dioxide a year from the environment. But considering to remove 16 billion tons a year, it would take all of the world's forests. How would you possibly do that? Zimmerman also cited nuclear energy as a renewable source. Not a good idea. Under Resolution 73-23, green waste, which is now given freely to people farming at a subsistence level, would be taken to make biochar and people would be charged for it. And also farmers would need to start paying for mulch and that would be shipped in over thousands of miles and wrapped in plastic. So those concerns, perhaps Mr. Adams could address them. Thank you.

Jennifer Navarra:

Today I would like to give testimony on the ordinance. I think it's V.2 on the agenda just in support. I'm glad to see the County moving in the direction, or I guess the EMC, taking the lead

on moving the County in the direction of adopting an ordinance that would help lead to some diversion. I gave kind of detailed comments in my written testimony. So I won't go through all of that there in the interest of time. But I do think it's a really great step in the right direction. And it's a draft right now. I know that a lot of it will change. I do think that it could be a bit more prescriptive. I'm interested in hearing from DEM what they think. A lot is left up to them to determine by rule, and I know that they have low capacity, and so maybe it having a bit more worked out in the ordinance itself might be of benefit or maybe not. So interested to hear more about that today, hopefully. And just echoing Cory's concern, incineration is not part of a zero waste philosophy. It is at the very bottom of the zero waste hierarchy, and it's never advised or recommended that we be burning our resources. And so an ordinance that is with the intention of doing something good, I hope, would not open the door to do something that I think we clearly have demonstrated over and over again in Hawai'i County that we do not want to burn our resources.

And then which brings me to the second agenda item. I think it's VI.1 on the Yummet project. It's kind of upsetting and concerning that the County seems to be really heading in this direction where there's been little public input and feedback to do a project that I don't even understand how it would be possible, considering that we have a contract with Waste Management right now where we owe them a certain amount of tipping fees, how we could start diverting all of our resources to a facility. I think initially I met with Britney months back. Initially, it really sounds great. It is easy to be, I guess, wowed by these ideas. But when we really start thinking about this project in a zero waste context, why would we take our resources, which most of them are still very useful, like, for example, glass or metal? We don't need to break metal and glass down to their base components to make them useful. It's not necessary. We can crush glass, and it's a commodity that we could use on this island. Cory already spoke to our green waste and other things. So there's no need to use such fancy technology and burn our resources basically into biochar. And then there's such vagueness on detail that I don't really know what they're doing. But I did a little bit of research, which I provided those sources in my testimony. You can't just make biochar out of anything and it'd be safe. If we're burning plastic, the toxics will still be in the biochar, and then we're spreading that biochar all over our land. It doesn't make sense. It's not good. So there definitely needs to be some vetting. I know they have their nondisclosure agreement, but we need to know what they're planning to do and whether or not it's safe. I don't think the topic really should be a discussion on financial feasibility, but it should really be about, is this what Hawai'i Island and its residents want done with our resources? So I'll leave it there. Thank you.

V. UNFINISHED BUSINESS

1. Pretreatment rule draft

Acting Division Chief Christopher Laude said he doesn't have it ready yet, and apologized. I keep saying it's not ready yet, it's not ready yet, but I have made progress. I've transferred everything I need to move out of the ordinance and into our admin rules, he said. So think good thoughts, he said. Maybe I can get to it this weekend and finish it up. But yeah, it's becoming a critical path issue, so it's pretty high on our list of priorities.

Chair Adams said she would continue to keep it on the agenda.

2. Continued discussion of EMC county landfill diversion ordinance initiative.²

Chair Adams said that she pulled together both of these items as a conceptual piece. There are lots and lots of details that need to be worked out, lots of issues, and her first goal was just to see how do you make them work together, how detailed should you have the ordinance? Can you fit it into the current way that DEM does its rules? And that was an interesting exercise. We have lots of issues. Lots of good comments came in from testifiers as well as the commissioners here, particularly around the issue of incineration versus pyrolysis. Some of what I did was just placeholders and to put some rough and dirty things I would like, and for the sake of time, go back and I'll gin up a couple more versions of these two and include maybe some options for different approaches that could be taken. There are some people who think it ought to all be by ordinance and passed by the Council. I used to work at EPA and write regulations, and so the idea of Congress or in this case, our County Council writing these very specific technical rules drives me crazy. Like they want to turn all of our waste into biochar and do it in two years. So get to work. Nah, let's back off. So I will come up with some new options and we'll talk about it next meeting. Commissioner Acasio and I have been going back and forth and we didn't have a lot of time to have conversations. So there will be some more changes and think about to bring to the next meeting what kinds of things you would like to see. She declared the item deferred.

Chair Adams continued: We all want to do the first- you work the pyramid, you do not generate the waste in the first place. If you do reuse it until it can't be used anymore, then recover everything that you possibly can for reuse and don't use virgin materials. And then if you have to downscale it, turn it into park benches, although I don't know how many park benches we need anyway. So there is a hierarchy and we should work it. And I put incineration in there intentionally because I know it will bug everybody. But it is a last resort. If your landfill is full and you have to site another landfill, that is not going to happen on this island or any island, incineration is probably the only thing left other than the random ditches here and there. So I will try and see if I can lay out different options and support really, work it. And it's only a last resort issue. The last resort is put in the landfill and in some cases that's a better lifecycle choice. So you have something new.

Commissioner Acasio wanted to push back on that for a second and say if we are working that hierarchy, we won't have that same pressure on the landfill. And also then if we're really working that hierarchy of prioritization, incineration is not viable because it needs feedstock, right? In order for it to be even feasible, we're really prioritizing that hierarchy piece.

If we manage to get to zero waste, let's do it. We will have changed the laws of physics and that'll be something, Chair Adams said.

² V.2: Landfill diversion: <http://records.hawaiicounty.gov/weblink/Browse.aspx?dbid=1&startid=124016>

VI. NEW BUSINESS

1. Presentation by Douglass Adams, Director of Research and Development, on topics relevant to DEM: Technical and economic viability of the Yummet biochar process on Hawai'i Island and the likelihood of sufficient hydrogen output from county landfills to be economically useful.

Motion, second, and vote: Commissioner Olson made a motion, to which Commissioner Cardwell seconded, to take agenda item VI.1 out of order. Ayes 5 (Acasio, Cardwell, McIntosh, Olson, Adams); Absent 3 (Burns, Otsuka, Norris). Motion carried.

Chair Adams said we would skip ahead to new business and ask Douglass Adams, Director of Research and Development, to talk about a couple of items that are pertinent to DEM and see what he knows, what he can say. There were two items of interest to the Commission as well as obviously the public, and that was first on the Resolution 73-23 that wanted everything, all our waste, to go to this biochar operation of Yummet. And the second item was just getting a little bit more understanding of the use of hydrogen that may be emitted from the landfills and how real that particular option is. We've shared some of the questions Commissioner Acasio had, but basically it was down to, is it real and is it something that is a benefit or not to this County?

Director Adams said that he has had the opportunity to serve on boards and commissions in the past as well. And the fact that you all are taking your time to do this and providing the service because mostly- a lot of the public doesn't recognize the immense amount of work that the boards and commissions actually do as a part of our county work. And so thank you for your efforts, particularly in a technical area like environmental management. I know that we did have the Director of Environmental Management on. I don't know if he's still listening or not, but if Ramzi is still there, I promise Ramzi, to embarrass you as much as I can.

Let me speak directly to Resolution 73-23, Director Adams said. I had nothing to do with that resolution. That's a Council resolution. And we understand the Council expressed its views through that resolution having to do with the material. And we still have work to do as the administration. And that work would be involving understanding the variety of materials that we have, how it can be used in a circular approach, frankly, to changing the way our economy works, changing the way that we currently are importing products here, using them and then turning them into waste, as opposed to using potential waste products as less waste and more of potential support for remediated products, for example. So I don't have much to say other than that on 73-23. It is the view of the Council. We, of course, the administration, pay attention to what the Council says, but we also understand that there is the need to make sure that we're doing things that are in accordance with scientific best practices, as well as ensuring that the responsibilities that I have as a Director of a Department that has in its charter looking at equity concerns, looking at cultural concerns, looking at economic concerns and sustainability concerns, all of those things fall as a part of our charter mission. And those all need to be things that we're looking at when we're looking at how we're going to try and move forward in the area. So Directors Adams and Mansour have had these conversations over the last two years about how do we break down the silos to some degree that he has in

environmental management and try and bring in opportunities for some of these more circular approaches, some of these more, to borrow the phrase, waste to wealth, opportunities.

When it comes to hydrogen as an energy source and also energy storage opportunity, the way that we look at these things, you have the ability for energy in terms of electrons and molecules, Director Adams said. Hydrogen is primarily a molecule-based approach to energy, both the generation and the storage of it. In that process, we believe it will be a way to make sure that we have the opportunity for choice, whether it's in transportation, whether it's in our grid, and the need to make sure that we have a diversified portfolio of energy generation and storage is something that we see as important moving forward. Specifically for the landfills, we are already flaring off methane on the South Hilo Sanitary Landfill. We had the grandfather clause that essentially allowed the methane just to be let off into the atmosphere. In West Hawai'i, we have some capping capability that controls it, which in a way actually makes that landfill easier for us to capture the methane and be able to use it for a variety of sources, whether it's ammonia or whether it's hydrogen-related activities. So we are not happy, frankly, that we're letting methane into the atmosphere. We don't think that's a good thing. ... my understanding is that for WHSL we have the ability to cap it, but we don't have any of the correct infrastructure right now to in fact capture it.

Well, there's two things, Director Mansour said. Wastewater could capture gases as well as the sanitary landfill. The sanitary landfill on the west side, we do have a gas system collection within the landfill. We got headers, but now it's being flared.

And that's being done with EPA, Director Adams said. EPA gave us a certain amount that we can flare, and so we're doing it in accordance with the EPA guidance.

It's a new landfill, so the biodegradation of the waste probably is going to take years, Director Mansour said. The east side landfill, which has a high quantity of gases, that's the one that we are trying to see how we could capture that.

To follow up on that, Director Adams said, landfills can be used to create these other generation sources like hydrogen. I've had briefings from folks that have talked to me about creating ammonia as well and then being able to use the ammonia here for the fertilizer process, for example, because right now we know that fertilizer is extremely expensive as we need to import it, and it's based on primarily fossil fuel generation. So the ability to actually do that as well as something that is of interest to us, all of these things scientifically look great and if we could just snap our finger, all that would be great. But of course there's financial considerations as well as the processes and systems that we already have in place here. So none of this is being done within a vacuum. It has to fit within the financial, but to some degree even more importantly will be how do we want it to work for us over the long term. And so we have in fact sent out an RFI- two years ago we had an infrastructure, RFI request for information that was responded to by around 35 different entities addressing a variety of

different infrastructure issues. Just this week we released a second RFI³ specifically tied to clean energy generation. So we're "requesting information from the community and innovators on climate change solutions. Specifically a net zero emission (green hydrogen and renewable energy) economy and sustainable infrastructure development. The purpose of the RFI is to identify viable climate change mitigation and adaptation opportunities. The County can consider opportunities related to green hydrogen, renewable energy and sustainable infrastructure for a 'post carbon economy.' Specific categories include Solid Waste and Wastewater, Renewable Energy Infrastructure, Sustainable Transportation, Quality of Life (QOL) and Everything Else." So we will be looking and accepting responses specific to in the solid waste and wastewater area, the Energy Profile Transformation. So waste-to-energy and I think it's important here because I've heard this as a part of the consideration I'm in absolute agreement, the Department is in absolute agreement, the County is in absolute agreement that incineration is the wrong way forward. Right? No incineration. We get that. And so that's the "Waste to Energy (no incineration), reduction in energy use and greenhouse gas production, solid/water waste disposal and management that is compliant with existing statutes and rulings, green hydrogen production, storage, distribution, and consumption" and then you've got Renewable Energy Infrastructure with a variety of areas, Sustainable Transportation, and Quality of Life. So this is Request for Information No. 4444, very nicely done, that was released on June 19. It's a 30-day lead. If we haven't done so already we'll be releasing a press release from the Mayor's Office that further makes the fact that this is out there visible and we're looking for responses in the variety of those areas. That all goes to say that no decisions have been made on our way forward.

Commissioner Acasio asked why, if we're looking at renewable and green clean energy, why is incineration- or how is that in the same RFI?

No incineration, Director Adams said. Absolutely no incineration. He continued: The part of the conversation that we've had about the Hilo Wastewater Treatment Plant and it's moving forward. And I'm pretty sure I'm not going to walk into any procurement conversation here. But the key is that we're looking at diversion possibilities for the wastewater and how that can be used – not necessarily just for energy, but we think that that's a good use of it. And so what this particular document is intended to help us with is that we've had a variety of conversations with lots of people, and what we wanted to do is gather that into a single response set up so that we can then really move forward with some decisions on what makes the most sense. And this is a part of that community conversation, but obviously we need to have community conversations. But in fact, we have been having community conversations, as you know. We have these conversations all the time about what is the way forward, what makes the most sense, but having some of the folks that would actually be involved in the processes themselves, understanding what they're talking about and to some degree the financial aspects of that. Because it's not a request for proposal, it's just request for information. There is no guarantee of any type of financial remuneration associated with responding to this. It's information and allowing us to set up the stage so that we can then move forward with the

³ RFP 4444: <http://records.hawaiicounty.gov/weblink/DocView.aspx?dbid=1&id=124576>

right kind of questions, the right kind of scopes of work, as we move forward in doing the things that we want to do, particularly in the Environmental Management area. I went to Minnesota because that's where I was told that Yummet was engaged. They had folks that were engaged in the work that was going to make hydrogen in a new way. The nondisclosure agreement that I signed is specific only to the actual process for making (the product). I can talk about my trip, I can talk about the elements that I saw, which if you're inclined to hear me do that, I'll do it at this point, Director Adams said.

Chair Adams said the biggest question was, is it proven technology?

Director Adams said one of the things that he was concerned about walking into the trip was whether or not this was a scalable technology. I feel very comfortable that it's scalable, he said. The people that I met with were not specifically, essentially- I should leave the description of Yummet to its CEO. There are a host of partnerships that that company has. And who I had the opportunity to meet with were the folks that were involved in concrete development. Folks that have had decades - and when I say decades, I mean like three and four decades- in the construction trade and the creation of cement products, using the standard Portland cement elements that are part of the way that concrete is made for use around the country and dare I say, probably around the world. And that is primarily a limestone-driven material. What I saw required no limestone and it also required no incineration. And it was being done by the folks that have been doing this with concrete production for decades. I'm not a concrete expert. I don't claim to be a concrete expert, but I do claim to be able to ask questions and work through making sure that I understand what I'm being shown and what I'm being told. So I can tell you that what I saw allows me to think that the total process that is being used to create what is essentially product for testing, and then to see the tests themselves, is something that is feasible. Not only is it feasible, I saw it in action, and that it is also scalable given what they are putting into it. So that's why I will tell you. I think that's about as far as I can go in terms of saying that. The other part of this, the other opportunity that I had when I went out there was to meet with the Minnesota Department of Transportation, National Road Research Alliance folks. And they are connected to MDOT. And there's a couple of these around the country that have the kind of reputation of, if you have a concrete or if you have a concrete product that needs testing, you want this tested by these places. One is in Miami and generally that's hot weather-related kind of stuff. And then one is Minnesota, but the one in Minnesota is available for everybody to come to. So they run their tests during the spring through the fall time period. They have both low volume, which means slow speeds and these sensor opportunities, but not as much traffic. And then they have an interstate right next to their office area where they do their work. And that's a part of the interstate that runs through Minnesota. And they have a side piece of that that they replace these cements and folks run across, right? Vehicles run across, and they're able to, through their sensor networks, check to see what the viabilities of these are. But they don't just put it in until they actually have all of the regular research and testing has been done. They're not going to put anybody at risk by putting these things in there anyway. He had the opportunity to go on the slow and the low volume one, actually drove around and stopped, looked at what they're doing with their sensor systems. Talk to the director of the program, talked to the folks that are the operational ends of the program, saw

what they were doing. I tell you all this because they were excited to be bringing this particular cement into their process. The program director had an understanding of what was happening here. The idea of them being able to test it was something that they were very, very interested in being able to do. So why am I talking about cement when we're talking about hydrogen? Reason I'm talking about cement is because this is one of the processes that has a- the creation of the cement, sends out both hydrogen and oxygen. So either you get water, H₂O, or you get hydrogen and pure hydrogen or pure oxygen, depending on what the requirement is. And then the idea is to have the octavers for that. So that's why we're talking about cement, because of the process of developing the cement. That's how they are able to create the hydrogen that we would be interested in having either for generation or for storage purposes.

But from our side, the question is, the feedstock is waste, Chair Adams said, to which Director Adams confirmed.

Okay. But they don't burn, Chair Adams said, to which Director Adams confirmed.

Commissioner Acasio asked if pyrolysis is not considered incineration.

No, it's pyrolysis, which is not incineration, Director Adams said.

Vice Chair Olson asked about any component that increases greenhouse gas.

It reduces greenhouse gas emissions, Director Adams said.

In other words, the end product is going to be less than the beginning product, the Vice Chair asked.

That's correct. Because it sequesters the carbon inside the product, Director Adams said.

And it's an escape-proof environment, Vice Chair Olson asked.

I'd like to say 100 percent, yes, Director Adams said. But I'm not the scientist in this, so I can't say that, the Director noted. What I can say is from what I saw, I think that there's a really good chance that's correct.

So it is bound up in the concrete production process, Vice Chair Olson asked.

Right, Director Adams said. I should probably be accurate, but I believe it's cement they're making. The concrete is a portion of that. So in the development of the concrete for the cement, the concrete itself is where the carbon is being stored. Cement itself has a variety of other aggregates and electronic stuff.

Interesting process. Obviously need to know more about that, the Vice Chair said.

Right, Director Adams said. And I think from the county's perspective we have had these conversations, but we have conversations with folks all the time. And the idea of finding a way that will allow us to reduce importation, reduce the costs associated with transportation, we think that that's worth our while. And so that's part of the reason for looking at this. The idea of trying to take 2.8 million gallons that flow daily of treated effluent into Hilo Bay and remove that and have it used in a way that's supportive of a variety of functions, energy being one, we think that that is a way forward. We think that that's potential for circular economy-related activities. Are there other uses for some of the inputs that might go into it? Absolutely. Are there decisions that would have to be made on what's going to be allowed to be used if in fact this was one of the ways that we went forward? Yes, clearly. But that's part of the reason why the RFI is so important. We want to gather that information so we understand what we're talking about in a totality as opposed to just having elements that are kind of talking to us. And that gives us then at the County- the receipt of that information then allows us to have the kind of conversations with our communities that people are interested in having is fun.

Commissioner Acasio asked Director Adams to confirm that what he went to visit was a test site, to which the Director agreed.

Okay. And then we don't know what the specifics of what's being diverted or what can be diverted, Commissioner Acasio said.

It's, my understanding, can be just about anything carbon-related, Director Adams said.

Commissioner Acasio noted Director Adams is seeing a clear distinction between incineration and pyrolysis. But she hears the word "pyro" inside "pyrolysis," so it automatically makes her think of incineration. Could you summarize your clarification on what you're seeing as a distinction, and then also going back to the RFI, seeing that incineration is not included in renewable, but is pyrolysis considered? If the distinction is-

Sure, we would imagine that we would receive information on folks that we'd be using pyrolysis as a part of their process, Director Adams said. For sure.

So, Commissioner Acasio asked, can you make a distinction, more or less, briefly to the Commission?

Director Mansour said part of it is you could generate heat either by chemical reaction, thermochemical or, in this situation, I think they are proposing it through thermodynamic chemical reactions. So by breaking down, generating heat through chemical reactions. That's how I understood it in conversation. Therefore it's not like burning, but it's through chemical reaction to create enough heat. Because you need heat to create biochar or anything else. So I just want to remind you all when that resolution came in, we talked about it with the idea is we need to explore what's out there to be able to meet that 2026 (deadline stated in Resolution No. 73-23). At least, we need to try to see what technologies exist. So the concept of what we're trying to do is to go out there and see what technology and see what type of entities that

could respond to our RFI and also assist the County to be able to go waste to energy, trying to divert some of our current resources to better resources. I heard the biochar. The biochar is yeah, I mean, once you create it, it has great advantages when it comes to carbon dioxide emission reduction. We could reduce tons and tons of CO₂ per year having the biochar. How are we going to get to the biochar? Could be also chemical reactions through these organic materials that could turn woods to biochar. You don't have to burn it, but you could generate heat through chemical reaction to create it. Biochar could reduce greenhouse gases. It's good for irrigation fertilizers as well. You've seen every time we have a fire, the next year, that area blooms so good because it enhances, it's a nutrient to the soil. So also it's great for our water for filtration systems.

So there's a lot of advantages to the biochar and it does reduce greenhouse gases, N₂O, which is nitrous oxide, Director Mansour said. And it could also reduce, eliminate the methane gas as well. And these are the greenhouse gases that you could control them by the biochar itself. We try to explore as much as we can to get into the right direction of being sustainable and yet bringing this County to a better stage of reducing the greenhouse gases.

Commissioner Cardwell said she appreciates this presentation and said it's important to gather as much information as possible. And I just can't stop thinking about this conference I went to a couple of years back where Mike Ewell, who's in this meeting today, made it very clear that pyrolysis is not the direction that we want to move in. And so I couldn't remember exactly what pyrolysis is and so I just was looking it up and so essentially it is still heat. It's basically heating without the use of oxygen, whereas incineration is with the use of oxygen. So that's the difference. So it's still something where we have to heat things up to a very high temperature. It's just without oxygen. So I just think it's really important not to try and greenwash this and make it seem like it's something that doesn't also have consequences. And I also hear about biochar, but all the things Director Mansour just said, all of the benefits of biochar is also the benefits of mulch. And so why would we then heat something up which has a similar benefit to- you're shaking your head no- but I don't know. I keep thinking about what Jennifer Navarra said too, that sometimes the solution is simpler than we think. And I just want to kind of put that out there on the table. I'm not an engineer but, I don't know, I think there might be some simpler solutions. And sometimes technology is wonderful. It gives us all kinds of amazing things, but sometimes it also complicates things. And we tend to want to do this fancy thing that maybe is not in the best interests of our island in particular.

Just to let you know, Director Mansour said, that the heated organic material without introducing oxygen, it's like suffocation. It will be all controlled in a vessel and that's how you start the process. So yes, there's pluses and minuses, but if your pluses outweigh the minuses, it's kind of the cost-benefit analysis. When somebody gets sick and they're going to do a surgery, there are certain things the doctor is going to tell you. Either you got to weigh the benefits, right? Sometimes you got to analyze it that way. And that's true for everything we do in life. So if we need to move with technologies that are going to get us there, that's the only way to move forward. If we're going to be simple, then we're going to stay simple.

And we're not going to meet certain goals.

Director Adams said he completely concurs with the Commissioner. We want it to be as cheap as we can make it and we want it to be as nontechnical as we can make it, right? And so part of our query is to see if those things exist out there. We do know, and I know that you are aware of this, none of this is being done in a vacuum. Our ability to make it financially feasible probably means in some cases a use of existing distribution methods, for example, and potentially even production facilities that we can retrograde fix. All of these things are on the table for the purpose of getting us where we want to go, which is reliable, renewable energy, so that all of our community, not just the current members of the community, can see the benefits associated with receiving affordable, renewable, reliable, green energy. And if we can do that using some of the sources of waste that we have as well, then all of that to the better.

In addition, Director Mansour said, we've been transparent. We haven't started anything. That's why we are having these types of discussions, it's for you to be part of it. And as we move forward, whoever ends up submitting the RFI could do a presentation for you as well. And you guys could ask as many questions as you want and we will ask as many questions as we need because we need to make sure we select the right people, if somebody out there could deliver on what Director Adams has explained.

Wastewater Division Chief Chris Laude said he likes what Commissioner Cardwell said. Simple is oftentimes better. And when you start thinking about these wonderful, amazing, incredible new technologies that are available, keep in mind that from the wastewater side, our job is to collect the wastewater, we treat the wastewater, and we discharge it. So something in addition to that is not something we're set up to do. We have a hard enough time staffing our existing facilities, right? So a new fancy biochar facility is not something we have the ability to staff. We could at some point, but we'd have to hire people. We'd have to develop a program to manage that. So you're probably looking at contracting that out and then you get into all kinds of issues with that. Also keep in mind that exciting new technology usually comes with, "hey, we did this in the lab and it works fantastic. We want to scale it up, we want to experiment on your facility." And sometimes that works, but oftentimes the process just doesn't scale up and it doesn't work. So a fair amount of skepticism and critical thinking about, what is it? How can we use it, and will it actually be beneficial or will it take up more resources? And then the final thing for now is on O'ahu, we had a composting program where we take green waste, mix it in with the biosolids and compost it, right. So that worked great. The problem was the greenwaste seemed to have a lot of plastic in it. So while we produced this wonderful mulch and tried to give it away for free, most people said, oh, it's got too much plastic in it. So even simple sounding things like that are fraught with these difficulties and it's going to take some time and effort to figure out how to get to the solutions.

Just a comment, Vice Chair Olson said. You're going to have a tough time finding a place at the (energy) table. Between solar, wind, there's not going to be a welcome sign out for another competitor for a place on the grid. And individually, everybody's doing solar because they own it. That stuff on the roof is my property and have a nice day.

It's nice to be the County, Director Adams said. People do actually ask you for your opinions.

Well, in that case, you're going to get an opinion whether you want or not, Vice Chair Olson said.

So to your point, you're absolutely right, Director Adams said. You got to be at the table. And so that has been part of our- both in terms of being in the PUC and looking at dockets that are associated with a variety of whether it's utility or any of the other generators. We're in constant conversations with those folks as well. You're absolutely right. We have to be here.

Commissioner Cardwell said that what Chief Laude just mentioned about the compost and there being plastic in the compost and the mulch, we have a similar problem here. But in her mind, it also kind of begs the question of, if we can't figure out something as simple as mulch and keeping plastic out of mulch, how are we going to pull together- pyrolysis is fairly complicated and there's a lot of toxic gases that result in the process of pyrolysis and so that's to be considered. If this RFI goes out and all the information is gathered and it points to pyrolysis maybe not being the best option for us, is the County open to hearing that? And then what? Is there a Plan B or is it, we're at this place of getting information and then we'll see what comes back as a result of it.

We are in the search of information, Director Mansour said. Our challenge is, we got 2.8 million gallons of water going to the ocean. Everybody said, don't send it to the ocean. Now we're trying to find a solution and that's what we have, 600 tons a day going to a landfill. Everybody says don't take it to a landfill.

This is the problem with a democracy, Commissioner Cardwell said.

Yes, Director Mansour said. So the idea here is we are trying to find information to make sure that we do the right thing moving forward.

These are tough problems, Director Adams said. You've laid out some of the issue. As I tell my folks, we don't have a choice. We've got to do something, right. So we have to figure out what that is. It doesn't necessarily mean that it's technological. It may be social. We've had the conversations about and this is some of the stuff that Ms. Navarra talks about, as well as my friends that are in the room here, right? How do you assist social behavior in potentially changing as well? My concern about changing social behavior, however, and they've heard me say this, is that if we do it, we have a tendency to forget about the folks that are in a lower moderate income that have not had the opportunity necessarily to join. And it is a big deal for me that we don't go down the path that says we have to completely reduce everything else and therefore you're not going to ever have a chance to move into the area of socioeconomic support that they haven't had a chance to be at. Part of our work is to focus on, how do we make sure that we're taking care of the folks that are in that low to moderate income class, the migratory diaspora that you're getting, climate refugees that we're getting? How are we taking

care of them? Because we feel if we can figure that out, which is not an easy calculus, by the way, but if we can figure that out, then that will actually help everybody else. So we're looking at those folks as being the folks that we can focus on. If we can fix things so that they are able to have an affordable standard of living, a quality of life that allows for- quality of life in his mind is a single job that if you have two folks in the household or one in the household, they're able to take care of it where you don't have to work two or three jobs kind of idea, right? So bottom line for him is that we don't have a choice. We've got to do something. It isn't going to go away. We all talk about the existential crisis that is the climate change crisis. We have a variety of those- demographics are part of that as well. But we can't not do something. We have to do something.

That's perhaps a good place to transfer to other ideas, Chair Adams said. I would also like to say I was on the Solid Waste Advisory Committee and one of our top priorities was whatever we decide to do, we need to look at the life cycle impacts. You look at it as a whole, you can go broader to sustainability, which looks at the economic and social impacts as well. You've got to analyze it all. You got to look at it and dang, it's hard to look at all that stuff, but you got to take a crack at it and you've got to keep up to date as new information comes in the door. You go, holy cow, all that road just disintegrated in Minnesota. So we've got to go back and our assumptions need to be adjusted and we do it again and again and again as new technologies show up. So I think that the idea is good. We're trying to gather information and part of why I wanted to get it on the agenda and we'll talk again if we get to the landfill stuff. You've got to look at, you've got to analyze it, you've got to weigh and balance it. There's no perfect solution, no silver bullet ever. So we'll muddle through and what's happening is good. We're trying to collect information and the challenge for this county and for this commission is having the time to just sit down and look at it all and make good decisions.

Director Adams said he really appreciates these questions. We are actually looking within the R&D Department, we have folks that are assigned to look at the circular economy and how that can work here. We're in pretty good position being an island. The idea of being able to figure out what that looks like here and then in the considerations of what the County is interested in hearing, what the County will listen to. We are not tied to any particular type of process. What we're tied to is trying to achieve a quality of life and a standard of living that is going to be consistent for everybody and then using that as the foundation for the questions we ask ourselves and the questions we ask about the things that we learn. And so that's where we're going. It's part of the reason that we have the conversations that we have in terms of the circular city piece that's here focused in Hilo. All these are ways for us to move in a direction that allows us, we think about 2042 – 20 years from last year is when we started thinking about – we think about what does that look like? Because if we're not thinking about that, if we're not trying to figure out what 2042 looks like by the time we get there as a county, we won't have necessarily gotten where we want to. We have to identify what it is in 2042 are our guideposts and then work our best to try and move in that direction.

Commissioner Acasio wanted to go back, for the record, to clarify that there are two things at play here and one is that we're talking about energy production and waste to energy. And then

there's another conversation in the room which is really about zero waste and landfill diversion and reduction in consumption. So from a zero waste model, pyrolysis as in addition to incineration, pyrolysis is not on that hierarchy. There's like two pieces and I'm really concerned, she said. I believe it was last EMC meeting when we were informed that recycling RFIs and information about waste diversion and recycling and those kinds of things are put on hold until an RFI like this brings back information. But it's including pyrolysis, which is fundamentally resource destruction. And that's where kind of maybe friction between the two ideologies.

I understand your point, Chair Adams said, and we'll talk about it when we get to looking the landfill ban concept and how we could tackle it. We're not done. None of us are done. And it is a very important discussion and gathering information. She and other commissioners thanked Director Adams for coming.

2. Presentation by Jennifer Navarra, Zero Waste Hawai'i Island, on the reusable foodware project in Hilo.

Ms. Navarra said she was happy to be here today to talk to the Commission about a project that we've been working on in Hilo.⁴ And this is more shifting conversation towards the zero waste hierarchy and really reducing the amount of waste that we create. The waste prevention side of things. It's really critical and key. And so we're looking specifically here at what we call foodware, which is like our takeout cups and containers. Really, the scope of this is anywhere food is being put into a container on site. So this could be a school cafeteria or a hospital or an elder facility or a Meals on Wheels program, or would also be restaurants, coffee shops, Foodland where we all love to get our poke. And so that's the scope of the work that we're doing. And we're specifically starting in Hilo, but this is something that we would love to see be a County-wide program once we get started in Hilo. And this is a project that would not be at all possible without working with Perpetual. And I'll go into more detail and introduce Ellie, who's on the call today, who's the executive director of Perpetual. And I think we also have Ellen on here today, who's part of our team. (Slide 1)

For those of you that don't know, Ms. Navarra said, she is the program director for Zero Waste Hawai'i Island. We are now a fiscally sponsored nonprofit starting at the beginning of this year, which is kind of exciting because it gives us the ability to get money and pay people to do this work as opposed to just all volunteer. But we did start out as a community group in 2019, doing outreach in the community. We hosted a monthly meeting and did events and then during the pandemic we kind of shifted our emphasis to really think about system level changes, some of those socioeconomic things that have been discussed today. We realized that living this zero waste lifestyle really was not accessible to most people unless we change our systems. And so we've been focusing on some policy work, some state-level policy, and really have been looking at reducing waste, specifically around packaging. (Slide 2, and each following paragraph in her presentation denotes a separate slide)

⁴ Reusable foodware presentation: <http://records.hawaiicounty.gov/weblink/DocView.aspx?dbid=1&id=124583>

We started a small pilot program late last year, called NO POHŌ. And we're working with the Locavore store to pilot reusing glass beverage containers. And so they have two of their products in these bottles and hoping to expand this service to more businesses in Hilo and maybe islandwide one day.

So our team is expanding. Like I said, we have some funding now thanks to our work with Perpetual. And we've been able to bring Ku'ulei Kanahale on board. She's working as our cultural advisor and outreach coordinator. Really excited to have her on board. Helps us to expand what has been a very narrow demographic, hopefully to a larger audience for zero waste. Then we have Ellen Okuma, who's really been the lead and financial and the person washing the containers for the NO POHŌ project. So that's really been her baby. And she's retired librarian and brings like a wealth of research experience and a lot of connections within the community to our team. Laurie Rich is our operations advisor. Devin Brown is a UH-Hilo student with the Bonner student intern program and he is working on a project to do reuse in the cafeteria for their takeout containers. And then finally we have Katrina Zavalney, our fiscal sponsor, and also she's part of our team in terms of helping us with strategic planning and organizational development. And so now to introduce Perpetual and they really are the lead on this project. This is something that they're spearheading. They're a relatively new nonprofit, but they really come to help communities help to design and implement these reuse systems.

And the reason for this is because this idea is something that there's lots of startups really around the world doing, but we're seeing it happening at a very small scale and as kind of an option as opposed to being the default. And so there's some real benefits to having reuse systems operating at scale, which I'll go into. But the goal of Perpetual is really to bring all the stakeholders together to design and create these systems. And once we have a model, hopefully this idea can expand across communities in the U.S. and around the world. And so in addition to working in Hilo, Perpetual is also working in Ann Arbor and Galveston, Texas. And then coming soon, they'll also launch in Savannah. Galveston and Ann Arbor, the timelines are staggered, so they're a little bit ahead of us and they've already done some community design workshops. And in the phase of actually designing these systems for those communities. Here's the Perpetual team. Ellie Moss is the executive director. She has a lot of background and experience in working in sustainability in the corporate world. And she's mainly her and Autumn Buford are mainly the people that we work with here in Hilo. Dagny Tucker also is highly involved, but she's in Paris. And so because of the time difference, we don't interact with her as much. Ellie's on here today, she's way more expert on this than I am. If there's any questions, she's usually the go to person that knows way more about these things than I do.

So the process that Perpetual is using is really working in collaboration. So they not only have their academic partners, their corporate partners, behavioral science, we know like human behavior change is a really difficult thing around waste management in particular. But then they also have the partnerships within the local city. So Zero Waste Hawai'i island is playing that lead local partner. We're the connecting point to community members, to organizations. We'll assist with the community engagement and business engagement. And then if we get as far as launching something, we would help with managing volunteers. There's also the great

possibility to partner with governments and city. At minimum in Hilo, we're going to at least need some cooperation from government to site washing or return bins like at the transfer stations or around town. The potential is really to be determined and there probably will be different governance models and the amount of involvement from the government will vary across the state. And that's great to have different models for different communities to look at, to see what works for them. And then the other critical piece of this is having a reuse service provider. And that really is like the business that is going to do the logistics to make a reuse system work.

And so right now, this figure to me is exactly like the discussion that we've been having earlier today around Yummet. The extraction of resources, shipping things all around to have a container that we use for 20 minutes to eat our takeout food, which we then dispose of, and then we often dispose of in really harmful ways for the environment. And so this is our linear economy. And so I think that as a society, that's where we are in this debate, right? Like do we really want to transition to something that's circular or do we want to continue the business as usual, which is like the extraction of resources and then wasting of those resources. And so for foodware, reuse really makes sense. It makes sense for Hawai'i where we are isolated and the cost of freight to ship things here is really high. So wouldn't it be great if we shipped containers here? Or even better if we made those containers here on island? That would be the ideal situation. But it makes more sense to have those containers circulating within the community and not creating so much waste that the county has to manage.

So reuse is really a critical solution for plastic waste and pollution. There was a 2020 study that found that reuse is really the largest lever for reducing plastic waste and pollution.

Successful reuse systems really have a lot of benefits to society. My mind, and a lot of people's minds probably immediately jump to those environmental benefits of less pollution and less litter, less toxics going into the environment from the extraction and manufacturing of single use containers. And then also the greenhouse gas emissions that go along with shipping things and making things. But there's also some huge economic benefits as well. There's comparable costs for businesses if the system is set up to operate at scale. We don't want it to cost more to businesses to adopt this system and it will be cheaper if we can do it at scale. Also there's the reduction of source issues. Like we have a lot of supply chain disruptions, especially since the pandemic. Businesses, every business I've talked to, they're keen on this idea because they're having trouble getting those single use takeout containers. And so having a stock of containers here on the island that we can recirculate and reuse will cut down on those problems. Also money will stay in the local community and we'll have less waste to manage. As a county. It's also a better experience for people for eating and drinking. Reduces exposure to toxic chemicals. A lot of our disposable containers, even the ones that we think of as being more sustainable, like those molded fiber compostables, those contain PFAs lined to help with the moisture absorption. And so we're being exposed to toxic chemicals when we consume foods out of these. And so we want the toxics out of our food containers. And that's a big goal of reef systems. Also has the potential to create local jobs, income source for collectors, and it's also a point for community connection, I think. We all come together to do events and we gather and

a lot of times what ends up being the product of that is waste. And wouldn't it be amazing if we could come together and share and not generate so much waste when we do that.

So we kind of look at- there's two kind of different ways that things can circulate in a reusable container system. There's the closed loop, which is a little less complicated. This is like a university cafeteria or a school cafeteria. It's where the containers are staying on site in one location. There's some examples of this happening at very large scales. Our group is working with large events to reuse cups, which is a huge endeavor. And then the more complicated thing is this closed loop system. And this is where you're getting your coffee or your takeout, you're taking it home with you. You're walking around town with your coffee or your boba tea and then you need to find a place to return the container. And so this is actually where we're not seeing anything happening at any large scale yet. Like I said earlier, there's lots of small startup businesses doing this where it's an option. But we've learned a lot from doing this. We've learned what works and what doesn't work. To have these open loop systems, we need tracking for the containers themselves, the logistics and the washing and all of that.

So to explain a little bit about how this reusable takeout containers or container systems work, we can start here in this redistribution. And this is when a business would be stocked with reusable items. They wouldn't actually pay for those items until they're checked out by a customer. And so instead of paying for the container itself, they're paying a service fee, which should be comparable to what they're paying for the disposable containers. And then once they're checked out, we don't want there to be any cost to the customers in doing this. And this is definitely not the way it's being done everywhere where they have these startups. Sometimes people pay like a really hefty deposit when they check something out. But we want it to be cost neutral to customers for equity reasons, so that we're not just biasing towards people that can afford to be a part of the system. We want it to work for everyone. And so really, a customer wouldn't pay anything unless they didn't return the container. And then we have return bins conveniently around town, Downtown Hilo, maybe at the parks, maybe at the port for tourists that got their food when they were out and about and had leftovers. We want to make sure we get our containers back because the imprint or the carbon footprint of a reusable container is much greater than a disposable one. So if we're losing containers, then that's a problem. And then that's when the service providers come in. They go and collect those containers, transport them to a washing facility, and then they'd be redistributed back and back and circulating these containers within the community.

This is just a few examples just to show you that this is not just some fictional imaginary thing. It is happening in places. This is Tim Hortons, which is like the Dunkin Donuts of Canada. They're piloting this project in Vancouver using cups with ShareWares and Return-It. I think for them you pay like a \$4 deposit when you get your cup. And then they have these convenient kiosks for return.

DeliverZero is another company that is out of New York City and they're working with 80 restaurants, which is a decent amount, but probably a very small fraction of the amount of restaurants that actually exist in a large place like New York City. But this is an app where you

would order through one of their partnering restaurants. And then you'd get your food in a reusable container, I think. Then you can have them pick it up for you at your home or you drop it off at a participating restaurant.

Dispatch Goods USA is in the Bay Area. They're doing a bunch of different models. They're using stainless steel containers, which is like the type of material we use is a big point of debate right now in the very small reuse community. But they're doing some business to business for produce and then they're also doing the takeout as well.

And so what's really key about establishing this systems of reuse is that it really needs to be operating at scale, where there's an ecosystem in place so that ideally most restaurants are participating in the program and that it's the default as opposed to an option. You want to have collection bins conveniently so that people can return containers as they're going about their daily business. We need the washing infrastructure and the logistics in place to make the system work. We also need the clear, consistent signage and queues for residents to participate in the program. The behavior change part is key. And then we also need those high volumes because if you don't have the high volumes of container cycling, then the costs don't go down as well as if they did. And part of the vision of Perpetual, and I think it's a really genius one, is that they almost want to put all the pieces together and then turn the system on overnight. And from a human behavior change that's much easier. And humans do change our behavior. We all really quickly learned to put on masks and sanitize our hands as we walked into stores during the pandemic. If it is the norm and there's that social pressure and that's what we do, I think it's easier for people to follow those systems.

And so this is just kind of an imaginary map, but we could draw one for Hilo where people can get reusable containers wherever they're shopping or eating. They can return them conveniently as they go about their business. And that the reverse logistics can take place smoothly and seamlessly.

And so the approach that Perpetual is taking is really like this long thing that starts with just mapping engagement and goes all the way to the launch of the system and improving systems. Where we are at right now, we've done that mapping engagement. We've talked to a lot of different people since the summer of last year. We started having conversations and figured, not surprisingly, that this is something that as an island community we're interested in. We became their local partner. And soon to be happening is this circular assessment protocol will be taking place, and that is with University of Georgia Lab. They do this protocol all over the world, really, where they go in and they assess the circularity of packaging within a community. And so they do transects of litter. They go in and do brand audits and look at what products are packaged in to really see how circular the packaging system already is and what opportunities there is for leakage of litter into the environment. And so they'll be coming here in August to do that and it'll create baseline data for Hilo. And then as we progress, hopefully to launching something, we could do this protocol again and see how things have changed. So where we are at right now is in this design phase. And I think I meant to mention in the beginning, but I'm partly here to inform EMC on this project, but also to get feedback from you guys because

that's what we're doing right now. We're going to nonprofits. We'll be fielding information, getting feedback of hurdles and challenges or who we should talk to and what we need to do to make this a reality. We are planning some community design workshops. They're really going to be more like fun events for us. They've done these in Galveston and Ann Arbor already. We're probably going to take a longer period of time to engage with all the diversity of different groups that we need to in Hilo. But we will probably do a very large event in the fall, in October, partnering with East Hawai'i Cultural Center and other small things. So that's where we're at right now. I think we hope to wrap up all the community engagement and then we would move on to actually designing something and then that would also go out to people for comment. And then if we see that we want to continue further, Perpetual is prepared to continue on and get us all the way to launching a system.

Just some fundamentals of the system design for this. We want a system that is viable across the board, right? We need something that's economically viable, that it's a self-sustaining program, that it's cost neutral to consumers, and that it's a comparable cost for businesses. We need something that's environmentally viable. It is very possible to design a reuse system that's worse for the environment, especially if we're not getting our containers back. And getting those high return rates is really critical. We also want something that's technically viable. We need to make sure that our containers are clean and sanitized and everybody feels safe and happy about reusing a container and that we can have just really seamless managed operation like that. When a business needs containers, they actually can get them in stock and have enough that they need. And then there also needs to be the social viability. So it's a system that works for everyone, all income levels, that you don't have to have a smartphone or a credit card or a bank account to participate.

And so Perpetual's role in this process is, they're not going to come here and be our service provider, right? They're just helping us get the system established, that design and the implementation piece. So they're supporting the cities in doing that. They're bringing the technical expertise. I didn't mention it, but Dagny Tucker has actually run a reusable cup program with Vessels. She's no longer a part of that company, but she has on the ground experience of doing that. They are mobilizing funding, which is really amazing and great. They brought some money for us to hire on people. And I have a slide where I talk about the other funding that we've applied for and they can also facilitate bringing the reuse service provider. I think my vision and dream is really to see a business that's created here on island as opposed to having someone else come in from the outside. But we'll see that's part of the community engagement. Part of this is like, is that something that broadly we'd want to see here in Hilo or is that just my dream and Ellen's dream?

So the funders, they have a bunch of different funders that are funding their personnel. The Plastic Solution Fund is actually the grant that brought funding to Zero Waste Hawai'i Island to hire on people to do this work. As you know, we applied for the SWIFR (Solid Waste Infrastructure for Recycling) grant to bring money for the reuse infrastructure for the washing facility. We just got word this week that we passed the first hurdle of that. So now they'll be evaluating that proposal based on merit. There's also the REO (Reuse Outreach and Education)

grant. And then we applied just recently in the last couple of weeks for this EPA Pollution Prevention grant in cooperation with the Hawai'i Sea Grant. That will be a large chunk of money to do the business engagement piece, not only with businesses, but with school cafeterias and Meals on Wheels programs. And then also get, not the containers themselves, but like the racks and a lot of the materials that you would need to have a reuse system, and also the consulting and technical assistance for them. And then Zero Waste Hawai'i Island, we applied for the Aloha 'Āina Community Foundation, Hawai'i Community Foundation, grant recently and that would help to fund some of those community design workshops, among other things.

And so these are all the partners. I won't go into detail. Each city they're working with has a local partner. I do want to highlight the University of Chicago Data Science Institute. They are actually working on doing the modeling to figure out the volume of containers we would need circulating to make this system work, which is actually a really tricky thing to figure out.

And I'll leave it there just now, throw it out to EMC. You're welcome to ask any questions. Ellie's here, I'll let her take over answering questions because she's really amazing. But really just feedback from you guys is really what we're seeking today because this is part of our community engagement, is talking to you guys and getting your thoughts. So I will stop sharing slides. (End of Ms. Navarra's presentation)

Well, Chair Adams said, I will start out on behalf of EMC. Wow, it's great. It is the kind of thing that we are wanting to support and if you run into some walls that you think EMC can help knock down, let us know. I was involved a little bit with the program, (Worcester Polytechnic Institute in Massachusetts) that did a summer or an intern type of program here looking at the pros and cons. So I've long been supportive of the idea. I think Hilo is a good place to start because it's kind of stable, unlike the rest of the island or where I live. So it is a wonderful start and hopefully be a good case study for others to take advantage of. And that Perpetual outfit is doing all the things that I was worried we couldn't do. So yay for finding them.

Yeah, that's amazing, Commissioner Cardwell said. That is just incredible what you're doing. And it's huge. It's really amazing and huge. So thank you. In Hilo there's so many places that are takeout where people often dine in. Like they get their food in "to go" containers but then they end up dining in and then they end up throwing away their containers, like at the restaurant themselves. Could part of it be that people can return their container to the restaurant and just leave it there? Because it seems to me like that would be the absolute easiest way to get the containers back because I guess that is a concern that people take it and then they just throw it away as they would a regular "to go" container. Just because that's our habit. That's what we're used to doing. And of course, like you said, with mask wearing. I absolutely agree. People can change and they can change their habits, but to make it really easy and super convenient, is that part of the model where the collection could be at the restaurant itself?

Yeah, for sure, Ms. Navarra said. That would be one place and then there would be kiosks around that people could return. They're expensive. I don't know if we're going to have as many as we have garbage cans. I mean, I envision, long term once it's beyond startup, maybe

we do- I can already see some hurdles that we have in terms of placing things from our discussion with some of the port people. And you guys know all of the- I think you probably understand, the State employees and all of that. So that's where EMC could maybe come in and be helpful with navigating that part of it. I think the transfer stations are a critical place to have containers because we eat at a restaurant, we take our leftovers home, they might sit in a refrigerator for a week and then we need to have a place to dispose of them or to return them to. So we want to make it convenient. And that's part of the design process, right? And understanding the behavior of Hilo and what works for Hilo, that's when we say we're doing these community design workshops, it is to field information from people about what's going to work for them. And I think it's also a little bit complicated to just do this in one location, because we know Hilo is a place that people from Kea'au and from the Hāmākua coast, they're coming here to shop and they might be taking things home with them. So we also need to think about how do we make it so that those people can return containers. In an ideal, beautiful world of my vision for Hawai'i Island's future, I think having curbside pickup would be the easiest way for us to get those containers back conveniently from everyone. If you can just put your bin out with your reusables and your recyclables and your organic waste, that would be the best. But I think that vision is a little far off.

Commissioner McIntosh said this sounds very similar to way before his time when the dairies would drop off milk bottles to everyone's house, and then you would drink it and then you would return it and they would reuse the milk bottles. And similar to Coca-Cola, the Commissioner said, my mom would tell me stories about where they would take the Coca-Cola bottles and then they would return it and they get just enough money back as an incentive that they could buy another Coca-Cola bottle, and drink it. So I'm not sure why those programs died out or quit, but you could research and see what has been done in the past and see how you could avoid a similar fate that they befell them.

Thank you so much Jennifer, Commissioner Acasio said. Really appreciate your work in putting together that presentation and all the work behind the scenes. I'm really glad to see that you've connected with Perpetual. I know that they're connected with the circular cities and things that we've been working on from prior, from the Senate office and that this is just a beautiful detailed presentation extending the work that we had done in our office. And I just wanted to really appreciate you for getting into that detail and coming to the EMC to present. It's really encouraging and brings so much hope. I would love to help bring it to fruition. I also see that it's a really good closed loop opportunity for working with University of Hawai'i, but also the DOE schools because their breakfast and lunch is all single use and it's mind blowing to calculate the numbers of forks that go to our landfill every day and that's just forks. Thank you so much. I would love to help in any way further this because this is exactly what we are working on in our Waste to Wealth vision for state policy. So mahalo.

Vice Chair Olson said hopefully you jumped into getting some cost-benefit analysis going on with the participants, how they feel about what they're getting for what they're getting and their point of view in terms of what would make the containers more likely for them to recycle.

Chair Adams said if others have some ideas, they are welcome to get in touch with Ms. Navarra and if you think of some things that EMC specifically could do other than give you applause, go for it. Let me know and we'll get you back on the agenda.

Great presentation, Director Mansour said. Have you worked with the Department of Health from a health point of view? Have you researched it and whatever requirement the Health Department do you think would be looking for?

Yes, Ms. Navarra said. We know this is possible because they did the program on the pilot project in Hale'iwa on O'ahu, which is very similar. And then we have some experience from launching the NO POHŌ pilot. Department of Health rules and regulations with food are very specific. Like very specific. Just to go into a little detail for the glass bottles, if it was not the business itself, like The Locavore Store makes that product and puts it on the shelf, if it wasn't them that did that and it was like someone else made the product and then they sold it, then there would be like a whole different process. So Department of Health is very product-specific, I think for the takeout context with restaurants, we know that that's very feasible and doable and then if we expand into other things, I think we're just going to have to deal with those hurdles when they come. I thought about it early on because for the NO POHŌ project, we had a huge delay because we got our containers approved and everything. And then the inspector that works with The Locavore Store threw a whole monkey wrench and said, well, these glass bottles that you're wanting to use are manufactured as single use bottles and so you can't use them. And so I was like, we got to get started way ahead. But the reality is we're not doing anything yet, right? This is all into the future. And so it's just timing-wise, until we have actually something to be approved that we are going to do X, Y and Z to Department of Health. I think it's premature to go and get their approval, but we know that it's possible. And I think for the restaurant context, it won't be that complicated. But if and when we get into something like a product that's being made and put on the shelf, then that's where we might have more hurdles. So I guess the short answer to your question is yes. And the dishwashing facility part, I don't know about that, but yeah, they have their regulations and rules and ways of doing things. And so we'll cross the bridge when it comes in terms of getting all the approvals that we need.

When we get the pretreatment rule, Chair Adams said, we'll be able to tell how to deal with the water discharge from this dishwasher outfit, and then it'll be right in our wheelhouse.

3. Discuss issues and recommendations for maintaining the residential Used Motor Oil program. (<https://www.hawaiizerowaste.org/recycle/motor-oil/>)⁵

(Discussion deferred)

⁵ VI.3: UMO resource info: <http://records.hawaiicounty.gov/weblink/Browse.aspx?dbid-1&startid=124012>

VII. REPORTS/CORRESPONDENCE

Director's Informational Report

1. Legislative and budget update

(No discussion)

2. Solid Waste Division Projects and Updates

1. Recycling and Landfill Diversion updates

(No discussion)

2. SW operations analysis update

Director Mansour said that the Department is looking at a solid waste system operational analysis with the idea to select a consultant. We are in the final step to finalize the scope with the intent for them to come in and analyze our current system from the way we handle the waste to transporting the waste to the funding to what could be recommended for more efficiency, recycling, diversion, talking to stakeholder. They will be talking to EMC as well, and Council Members, trying to figure out if the land filling is going vertical versus- because we only got about 15 to 20 years remaining. We are in the process of doing that study to figure out what is the best direction moving forward. There's possibility of renegotiating with Waste Management of Hawai'i on the filling methodologies so we could extend the lifespan of that landfill probably for another 30, 50 years. So we're looking at that as well with the concept of getting some dollars back on cost per ton on our current agreement. So that also is in the harbor. And what Director Adams has stated earlier, DEM is working with R&D trying to figure out how could we put our current resources rather than going to a landfill or going to the ocean to a very different resource. The idea is, yes, you take in a resource, but instead of getting dumped and disposed of, could we regenerate a better reuse of it? And that's what we're trying to navigate through murky water to get information so it could guide us how to move forward.

Chair Adams asked if a contractor has been selected.

Probably by the end of day, Director Mansour said. We are working the little details. I have a meeting at 1:30 to get clarification from them on making sure some of the words are within what they submitted on the scope. I just wanted to make sure we use the right wordage.

Vice Chair Olson initiated a seven-minute discussion about identifying funding for solid waste, which Chair Adams ruled to be out of order.

3. Wastewater Division Projects and Updates.

1. Pāhala and Nā‘ālehu AOC

(No discussion)

2. West Hawai‘i wastewater projects

(No discussion)

3. Hilo WWTP upgrades

We are still working on the Hilo WWTP as you all know, Director Mansour said. The low bid came almost double the price that we had budgeted for. So it's amazing how the construction market- it's outrageous to do anything nowadays. So we are back to the drawing board and trying to package both together, Phase 1 and Phase 2 and trying to bid it out with the hope that we'll get a better price within our budget for both phases. When you look at one project and compare it to the entire county operating fund, it's just mind boggling. But it's going to continue being a challenge for DEM. Things are not getting cheaper. They are getting more expensive. As far as wastewater, many other projects are being worked on and trying to navigate through what EPA and Department of Health require.

4. Wastewater plans

1. Addition of wastewater services for the Puna District⁶

All projects are on schedule, Environmental Planner Kelly Hartman said. We're going to open the link to commenting on the website for the Puna project once the facility plan comes out. We thought that was important to get more comments on that, but besides that things are rolling smoothly.

Regarding the facility planning, Director Mansour said, we just signed a contract with Carollo Engineers to do countywide facility planning documentation. Also that includes a cesspool conversion master plan for the entire island and looking into our sewer collection force mains. So it's a full analysis going to be done by Carollo to do a countywide plan on the wastewater.

2. Puakō and South Kohala Regional Wastewater Master Plan

(No discussion)

4. Information requests to DEM from Commissioners

1. What is funded in the FY 23-24 budget for COHDEM Recycling Program? (Adams/Otsuka)

Chair Adams asked how much of the County's budget is going to be directed at the recycling diversion programs.

I don't have that number, Director Mansour said, but there's definitely funding for operations and public education. We have Business Services Hawai‘i, we have Hawaiian Earth Recycling, and we have Big Island Metal Recycling. I think it's about \$7 million for that. We have about \$5 million with HER. We have BSH cardboard, white goods in the range of \$800,000 to \$1 million.

⁶ VII.3.4.1: Puna wastewater website: <https://storymaps.arcgis.com/stories/50e624065fa641598326febe6316327b>

And then we have scrap metal and we have our operations. So I would look at them probably between \$7 million to \$8 million to that section.

But, Chair Adams said in terms of your staffing and new initiatives around recycling and diversion-

We didn't add staffing on that section, but we have vacancies that we're trying to fill. The recycling program takes up almost 20 percent of the entire Solid Waste Division budget. It gives you an idea. There is a lot of money going there.

Commissioner Acasio asked about posted vacancies. Are they live?

We will have our new human resources specialist start June 28, Director Mansour said. We've been with that one for almost a year. And the coordinator specialist one was advertised within the county. We had nobody apply. So now recruitment is going outside the county system. So that should be going out soon.

Commissioner Acasio recalled in the April 2023 EMC meeting that the Director had said that recycling initiatives were on hold. So she just wanted to clarify if new recycling initiatives were on hold until the other RFI comes back with information.

We're always looking for ideas, Director Mansour said. it's not on hold. It's a matter of just, if there's a new idea that's going to work, we shouldn't put it on hold. If the idea is, we're going to have the additional study, we're going to work on it in parallel. It's very dynamic.

2. What types and quantities of polymer flocculants are used in wastewater treatment and why are they used? (Acasio)

Director Mansour said polymer is usually used to enhance the treatment of wastewater because you have suspended particulates within the wastewater. So when you add polymer it attaches to it and it settles. And it's easy for us to treat the water from these particulates that floating within the water. So they get attached to that polymers and the polymers will be easy to settle. And that's how we treat our treatment plant effluent. So it's an additive to enhance the wastewater treatment and capture any suspended solids or particulates, either organic or soluble, that could be attached to that polymer and it allows for it to settle. Then we could manage it that way. It's a treatment. It's for the treatment purification of the waste.

And then that solid is the sludge that is landfilled, Chair Adams asked.

Yes, Director Mansour said. And then once it becomes a biosolid, it becomes the sludge. And currently we're taking it to the landfill. You add it in the clarifier stage. You are trying to clarify the water before you send it out to the ocean.

Commissioner Acasio asked about the polymers in the water that do not get attached to a particulate.

The polymer itself will settle because of the way it's designed, the way it's manufactured to allow for it, Director Mansour said. It's going to settle on the bottom, because we go through primary, secondary, and disinfection and all that process will eliminate it. So as far as I know, nothing makes it to the final outfall, he said.

Do we have an estimate on the cost of that part of the treatment, Commissioner Acasio asked.

Director Mansour does not have an exact cost estimate, he said. Maybe \$150,000 a year just for the product itself. We're not as huge as the City and County of Honolulu. CCH was in the range of \$1 million a year or so. Our usage is minimal in comparison.

Chair Adams and Director Mansour recommended checking with Chief Laude for more information.

VIII. FUTURE AGENDA ITEMS

1. Follow up on action items determined today.

Chair Adams said we have deferred a couple of discussions, including the landfill ban on recyclable items as well as the used motor oil program.

2. Other (Commissioners may suggest items they would like placed on the next agenda.)

Chair Adams said if there are other items that people want to see and talk about next meeting, send them to her. We'll see if we get Corporation Counsel to provide an analysis on our last funding question (May 24, 2023 meeting). We'll put that in there for sure. But again, just let me know and I'll see how we can fold it in. I'm hoping that we can have a presentation from Nick Riznyck of Hana Hou Recycling about some concepts that he's been looking into on mini-Materials Recycling Facilities. So again, some more information of things that are potentially out there on staying up at the higher end of the pyramid for solid waste.

IX. ANNOUNCEMENTS

The next meeting is scheduled for Wednesday, July 26, at Room B-2, Building B, West Hawai'i Civic Center (74-5044 Ane Keohokālole Highway, Kailua-Kona), and Zoom.⁷ Please contact the Secretary for the Department of Environmental Management or review the agenda posted on the County Calendar within six days of the next meeting for confirmation.⁸

So if you're not going to make it, please let the Secretary know, Chair Adams said. We're skimming awfully close on quorum. Just let us know because it can be tight for us.

X. ADJOURNMENT

Motion, second, and vote: Vice Chair Olson made a motion to adjourn, to which Commissioner Acasio seconded, and the motion was adopted. Ayes 5 (Acasio, Cardwell, McIntosh, Olson, Adams); Absent 3 (Burns, Otsuka, Norris). Motion carried. Meeting adjourned at 11:31 a.m.

⁷ IX: 2023 EMC meeting schedule: <https://records.hawaiicounty.gov/weblink/DocView.aspx?dbid=1&id=120846>

⁸ IX: Hawai'i County Calendar: <https://www.hawaiicounty.gov/our-county/county-calendar>

Respectfully submitted,

Peter Sur, Secretary