

City of Coral Gables City Commission Meeting
Agenda Item F-2
November 14, 2023
City Commission Chambers
405 Biltmore Way, Coral Gables, FL

City Commission

Mayor Vince Lago

Vice Mayor Rhonda Anderson

Commissioner Melissa Castro

Commissioner Ariel Fernandez

Commissioner Kirk Menendez

City Staff

City Attorney, Cristina Suárez

City Manager, Peter Iglesias

City Clerk, Billy Urquia

Parking Director, Kevin Kinney

Assistant Director for Mobility, Matt Anderson

Public Speaker(s)

Agenda Item F-2 [4:10 p.m.]

Discussion regarding implementation of hydrogen powered trolleys
(Sponsored by Mayor Lago)

Mayor Lago: F-2. Mr. Anderson, Mr. Kinney, please join me. I'm going to try to run through this as quickly as possible, to put this before my colleagues on the Commission. I'd like to show a quick video, if possible, to bring my colleagues up to speed on something I've been working on for the last month-and-a-half. I've been meeting with a few different individuals who are involved when it comes to hydrogen power. It doesn't have to be trolleys. It can be hydrogen vehicles; it can be anything. This is not a new technology. This has been going on already for possibly 10 or 15 years. These are the actual cars that run on hydrogen, but this is something that I think could be the wave of the future in the sense of batteries, I don't know where the video is, we'll get it now. As an electric car owner, when you study a little bit about the way that batteries are conceived and the way that they get the minerals, it's very difficult. This is something that I will talk a little bit about hydrogen power which we'll hear a little bit about.

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[Video Presentation]

Mayor Lago: Thank you, Mr. Clerk. So, I wanted to show you. This is just one example, one of the companies that I met with. They are doing it in Europe. Some people have ridden taxis that are hydrogen powered. I've actually seen vehicles exist hydrogen powered. Toyota has been working on this technology for a long time. They are really advanced. I think that this is the wave of the future, through a lot of the articles I've read. I have a lot of information that I didn't have time to prepare a memo over the weekend, but it talks a little bit about the evolution of hydrogen power and the drawbacks of battery power, the cost. We are talking about the minerals that are required that have to be extracted from the Earth. How those minerals are extracted and also the issue with the grid. You've seen California right now due to the fact that we as a country have not invested in our grid in decades. Right now, we're seeing certain areas where there's more proliferation of electric vehicles. We don't have the grid to substantiate the amount of electricity that's being pulled off the system. So, hydrogen power is something that again, I think has real legs and I bring it to the attention of my colleagues, because number one, I'd like for them to become a little bit more immersed in it, provide guidance, contacts, anybody that they know or meet. I would like to see the city, doesn't have to be in the next week, next month, next six months, next year; I'd like the city to really, through the Manager, start trying to see like we did when we started talking about remember electric vehicles that we said we want to have the largest 100 percent electric car fleet in the city in the State of Florida. Something that we started talking about how many years ago, Matt.

Mr. Anderson: 2015 probably we started those conversations.

Mayor Lago: Look where we are now.

Mr. Anderson: Yes.

Mayor Lago: Okay. So, I think that we can really do something interesting if you start having that conversation, and I know that we already had multiple phone calls with this entity, but it doesn't have to be them. They are just pretty advanced in Europe. I just want your input.

Parking Director Kinney: I absolutely agree. The biggest issue about EV's is the issue with demand on the power grid. With a hydrogen fuel cell, essentially you do hit the electric grid, but at off peak hours, and then you can fuel your vehicles whenever you want and it's a quick process. So, I think absolutely as staff we're very interested in seeing where this is going and you're correct, in Europe there are a few entities out there that have moved forward, and they are doing pilot projects and even converting fleets. The company we have spoken with is incorporating in Miami and they are interested in trying to find people to partner with.

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Mayor Lago: And that's why I brought it to your attention.

Parking Director Kinney: So, it's a good conversation to have at this point.

Mayor Lago: That's why when I met with them, I treated them to breakfast and they brought their whole team, pretty impressive. You know they are going to be doing things in other cities here, maybe we can do some sort of partnership with these cities. But what I would like to see is, through the Manager, we start working on this, and I don't know why I said trolley, that's my fault. Doesn't have to be trolleys. It can be vehicles for Code Enforcement.

Parking Director Kinney: It's a good place to start and prove the concept and then we can move to heavy fleet, we can move to lots of places, but I think it's a good place to start. The biggest hurdle I see for them is creating the first version facility in the county, because they have to convert to hydrogen fuel. Now they are willing to look at pilot projects even before that because they'll bring in the hydrogen fuel to show a pilot project, but they are going to have at some point within the county build and develop a conversion facility.

Mayor Lago: And that's one of the things that we talked about over breakfast, and I know we talked about it over the phone, and we had a secondary phone call, is the fact that we are in the middle of everything here in Florida and we have property that could be potentially interface between, let's say, City of Miami, West Miami, South Miami. It's one of the things I'm going to bring up tomorrow with the Mayor of South Miami when we meet with him, he's very interested in issues of sustainability and environmental stewardship. I think it's an opportunity here to bring multiple different cities into the mix. This facility could be, for example, located at our trolley facility on U.S.-1, that's one of the things that I showed them – prime location. It has enough room to potentially do one of these hydrogen facilities there and multiple cities that can be like their jumping off point. You're right next to the Grove, you're a stones-throw away from West Miami, South Miami. I would love the ability to have that conversation, continuing having the conversation and find a way if it's with this company or with another company. Doesn't matter which one it is, as long as we form some sort of venture or a pilot program with a company that has legs, that has legs and has a track record to actually deliver on something of this magnitude.

Vice Mayor Anderson: So, I have questions because I walked in a couple of minutes late. You are talking about the ones that are converting internal combustion engines to run on hydrogen or are you talking about the ones that converted to electricity like an electric car.

Parking Director Kinney: Probably the second.

Mr. Anderson: The second.

Parking Director Kinney: Where we see the most benefit moving forward and I do think it resolves a lot of the issues that we see with moving to pure EV's with battery storage, because you're not

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requiring vast amounts of rare minerals and there's just a lot of earth-friendly things that come along with the hydrogen process.

Mr. Anderson: And to add to that too, part of the concern we've had, especially on the heavy-duty fleet, is range. Like the reality is even some of the electric busses or trolleys that they have may not be able to...

Mayor Lago: Range anxiety.

Mr. Anderson: Range anxiety – you know that very well. Like the reality is in looking at our heavy-duty fleet and electrification options, they are really limited. So, if we can find something that can extend that range and hydrogen, some of the studies they share can double your range on that. That can really help us to meet some of our larger duty fuel usage on trolleys, garbage, whatever, can help solve some of that.

Vice Mayor Anderson: That's a very common element being that you can use water to generate it or make it from, but I remember Honda was getting into the hydrogen cell market at one point and then it kind of dropped off over ten years ago.

Mr. Anderson: Toyota is already selling a hydrogen car.

Vice Mayor Anderson: Yes. I think California kind of brought that back as a result of some of their regulations. I see that the U.D. Department of Energy has a site now providing some information on this. Has there been any studies on – I know we have many news reports of what happens to car batteries when, especially the large ones, catch fire. Have there been any test results on the hydrogen cells as being a safer option, not that gasoline is safe either, but.

Parking Director Kinney: We're early.

Mayor Lago: Very early.

Parking Director Kinney: Early in our investigation, so I don't want to say yes or no at this point. We are aware that there are some stories out there. We are kind of investigating.

Vice Mayor Anderson: Yes. I remember the very early, early gasoline car crashes when they even learned how they put the filler pipe in, was a big factor on whether or not you are going to explode when you got hit.

Mr. Anderson: I think also too, like there is a lot of money being invested in the federal government in, not only electrification obviously, but also other alternatives. So that's another opportunity for us to ask for.

Vice Mayor Anderson: afdc.energy.gov.

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Mr. Anderson: Alternative fuel data, yes.

Mayor Lago: So, Madam Vice Mayor, what I was saying was that I've met with these individuals. I took them to breakfast, and they were very impressed by just the amount of work that they've done, and how many years they've been in actual operation. Then I introduced them through a Zoom call, the team, and they've had other, we've had other calls since then. I'd just like to see the Commission's appetite, like we did in 2015 when we started talking about electric cars and charging, solar, all that kind of stuff of whether we have the interest in embarking on a potential pilot program and having conversations with other municipalities that, who knows, maybe we can build one fuel facility together and it could be beneficial for multiple municipalities who are literally right next to each other. We have the space on U.S.-1 at our Fire Station, which is perfectly located, and it houses our trolleys now. That's the reason why I put it on the agenda.

Vice Mayor Anderson: I think it's exciting.

Mayor Lago: What?

Vice Mayor Anderson: I think it's exciting.

Mayor Lago: I think it's very interesting. I've always been interested in this kind of stuff.

Vice Mayor Anderson: It's a cleaner burning fuel, so it will last longer.

Commissioner Castro: I think that this is the future. I don't think we're right now. This is not something for right now, one, because of cost implications. It's not a technology that's very mature right now and we'll be kind of testing it. I don't think right now we're in the position to start doing that. I think it's something we could probably show some interest in for five years, six years when there's more scientific reports and results. Hydrogen is challenging to transport and to store and we don't have the infrastructure for that. So that's something we really need to plan ahead; and the cost of producing hydrogen, especially using renewable methods can be high compared to other energy sources. I think that this is the future. I just don't think we're ready to do it now.

Mayor Lago: So, it's already being sold by Toyota on the market. It's all over Europe. I think someone actually rode in a taxi that was hydrogen in California. I have examples here of where they already have hydrogen refueling stations for California buses. It's available. If you know what you're doing and if you have the technology, it's not an issue where you are going to have combustion or any issues like that. Toyota has invested for over ten years in this technology. Again, if it's not the will of the Commission, the Commission is not interested in doing it, I won't move forward with it.

Parking Director Kinney: Well, I just need, speaking for staff, we are always looking at all options.

Mayor Lago: I know you are.
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Parking Director Kinney: But we are very impressed, especially the unique position for Coral Gables is, a company has been successful, and Europe wants to incorporate in the U.S., and one of the first places they thought about was Coral Gables. Now we do have a history where we've been burned a couple of times. We like to be on the cutting edge but not the bleeding edge, and we've invested in some things that were good concepts, but we were ahead of ourselves. We don't want to get ahead of ourselves, but they will have to show us how we can have security in the fuel, how we can make sure that it's a cost-effective method, but I do think the possibility of there being some kind of a pilot project we would recommend is there. We're not there yet. And we wouldn't recommend something unless we thought it was feasible.

Mayor Lago: If you look at the article that I have here, I'll send it out to everyone on the Commission. It talks about \$7 billion dollars from federal funding from the U.S. Department of Energy, the DOE. So, there's already massive subsidies, just like there were for electric cars. They see that there's no possible way for us to financially meet demands if we are going to push, like they're pushing for 2030 and 2035 in regard to having EV fleets. Just not possible. And they can't do, for example, trucks. If you look at an 18-wheeler right now – I was watching a video on it yesterday, for that to be able to have batteries, thousands, tens of thousands of pounds that it puts on the actual 18-wheeler makes it unsustainable and it really impacts the ability to actually deliver service and this is a completely different technology is a lot more light weight and you are already seeing all the examples here, but if the Commission thinks that its something that is not currently feasible, we won't entertain it.

Commissioner Fernandez: I guess I would just like to hear more about what we would be able to do. I guess right now it's kind of just a concept. Are you expecting a vote from the Commission today or directive.

Mayor Lago: What I'm trying to do is very simple. I'm trying to, like I do at every meeting, try to bring great things to the city where we sit down, we spend time with staff, we analyze it, research it, like I'm going to bring other things now that we're going to talk about that are opportunities to be more sustainable and have staff research the opportunity through the Manager and see how we could potentially over the next six months to a year, engage in an opportunity not by ourselves, but with other municipalities to deliver on something that could be beneficial. What could that be? It could be taking part of our fleet, two cars, three cars, one car, and transforming it into hydrogen. Maybe we see if we can do our trolleys in hydrogen. What would be the cost benefit of that. We spend about a million dollars a year on a trolley, correct? What are we spending on a trolley?

Parking Director Kinney: We are scheduled to spend for new trolleys about \$450,000 a year.

Mayor Lago: Yes - \$450,000. So, we are always spending money and basically revamping the fleet and getting it more efficient, but at the end of the day, this is going to be a situation where I always wanted to go electric. The Manager and I test drove, somebody drove us, electric vehicles,

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excuse me, electric trolley. The reason why we didn't go any further, Mr. Manager, as you remember, is I asked where is this trolley made. Said its made in America. Who owns the company? The Chinese government owns the company. So, we never went forward. But the opportunity here is to potentially find technology that can be retrofitted or find a trolley that already exists. They have buses, as we saw in the example, and they are doing it in California. They already have places where you have hydrogen stations where you can fuel up and that uses fuel. So, it's not something that – it's not like the Jetsons, it already exists, and you have major companies like Toyota that are pushing these cars out and they are selling them in the open market. So, it's something again, that's sustainable, that is environmentally friendly, a lot more environmentally friendly than electric cars and that saves the city money, in regard to gas, as there are massive fluctuations in regard to fuel.

Parking Director Kinney: Well, as staff, we have actively encouraged them to give us more information and even if they chose to put forward some kind of pilot project that they would propose to us, that obviously at this point we haven't even had a chance to evaluate that, but it is a very exciting technology that we think, we agree that at some point in the future, I think this is going to be the direction we're going.

Vice Mayor Anderson: I think it's exciting. I'd love to learn more, and I also like the idea of not having to breathe the fumes from the trolleys and as many vehicles. The more alternative clean sources of energy we can get, the better off we are from a resiliency standpoint as well. So, I know that this has been around for some time. It's not like the technology hasn't been around. It's a matter of getting the infrastructure in place and whether you have an onsite area where you produce your own hydrogen versus having it trucked in, that's a major factor. I welcome sharing the information, so I can read more than other than what's on the government website.

Mayor Lago: My intent is not to go rush and buy any cars; we don't have a fueling area. My intent is to come back to the Commission six months to a year from now, after having talked to other municipalities and see if we can do something together where we can expand on this information.

Commissioner Castro: I think my biggest concern here is cost, infrastructure and safety, right. Storing and handling hydrogen represents challenges due to its low ignition energy, so I think that's something that with time we need to test out and see really if its going to be more cost-effective not only to the city, but the environment as well. I think it's too early on this stage, but I think it's a great option at the end of the day in the future.

Vice Mayor Anderson: I don't think anybody is taking a vote here on this. I'd like to learn more about the issue.

Commissioner Menendez: I like it. Quite honestly, it's probably my favorite item of the day. No, I find it fascinating. I think we should explore more and learn more. I guess my only thing is, if they can put hydrogen can they get me a Delorian, that kind of.

Vice Mayor Anderson: That would be fun.

Commissioner Menendez: That would be fun. Test drive it. I think it's great. We should explore it. Why not be at the cutting edge. I think it's a great idea and see where it takes us.

Vice Mayor Anderson: As long as we don't get cut.

Commissioner Fernandez: I've been on the hydrogen powered buses in California, and I've seen their fueling facilities. They are near LAX and seamless process there. They've been using them for years. At least, I haven't been to California for about five years, so at least five years and they were already in the system. So, they've definitely been using the system there. California uses a lot of different ways of finding energy. I always thought one that we have not been tapping into is wind energy here, with all of our coastal areas. California takes huge advantage of that and fills in for a lot of their needs, but as the Mayor was saying, the electric infrastructure is just not there. So, if we are looking to be more sustainable, we need to explore other options and I think right now this is one that's starting up in our part of the country and we should look into it.

Vice Mayor Anderson: I think the reason why we don't have the wind is one, its intermittent and we don't have mountains to kind of...

Commissioner Fernandez: In California they have coastal, so they have it out in the water.

Vice Mayor Anderson: It's a different environment. We don't have wind all the time. It is inconsistent too much.

Mayor Lago: So, it's a long day. Is there interest on the Commission having the Manager and giving direction to the Manager to actually come back to the Commission, let's say in six months with some sort of progress work.

Vice Mayor Anderson: Yes.

Commissioner Menendez: Yes. I think it's great.

Vice Mayor Anderson: Share the writing with me.

Mayor Lago: Sorry?

Vice Mayor Anderson: Share the materials so I don't have to look on my phone.

Mr. Anderson: Okay. Thank you all.

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Mayor Lago: Alright guys. Thank you so much.