Rachel Johnson: 00:08 I'm Rachel Johnson, the member relations manager here at Cherryland electric cooperative. And I was looking back over some of our previous episodes of the podcast and realize we started this podcast in 2014 so this is our, our sixth year and our sixth season of co-op energy talk. And we've got quite a, quite a body of podcast behind us. But as we were kind of looking forward into the future, we recognized that this was maybe an opportunity for us to try out some new things. We have a very loyal listener base, so we'll be very interested in hearing what you think. But over the course of this season of co-op energy talk, we're going to try out some new formats. We will still continue to have the format that everyone loves, the kind of discussion style with guests, but we're also gonna layer in some shorter podcasts where we just take on one topic or one kind of energy issue of the day and dig into it really quickly.

Rachel Johnson: 00:58 And so that's, that's gonna be an addition to our normal podcast. And you might also notice that we've had a bit of a rebrand, a brand refresh. If you check out our logo we'd love to hear what you think of that. But the other thing you're going to notice today is that I am not joined by my cohost and our trustee general manager, Tony Anderson. I am instead for the first time ever allowing the man behind the recording, mr Rob Marsh to step out from behind the sound recorder and take a microphone and thanks for joining us Rob.

Rob Marsh: 01:31 Thank you so much Rachel. You know what? Coming out of the hole, that is sound recording. It is a little bit brighter here behind the mic. Yeah, I like it.

Rachel Johnson: 01:40 Don't get too used to it. You got to prove that you are under seat. Okay, so what we were hoping to talk about today is a project that's been getting a little bit of press lately. It's called the Gemini solar project. It is a very, very large solar installation that's going to be installed about 25 miles Northeast of Las Vegas. It's 690 megawatts of solar, plus an additional 380 megawatts of lithium ion storage that makes it the largest solar farm in the United States and one of the largest solar plus battery projects in the world. So it's a really kind of huge, impactful, certainly getting a lot of attention. A project.

Rob Marsh: 02:16 Yeah, that does, that sounds massive. Now looking at 690 megawatts, what did, can you give me some context for that? Because I don't think everyone at home understands just how huge that is.

Rachel Johnson: 02:28 Yeah, absolutely. The good, super good question. So if you were to, the average Cherryland home uses about 750 kilowatt hours

a month. So if you were to take an average Cherryland home, this project could power 180,000 of those homes a year. Wow. Yeah. So we only have 36,000 homes.

Rob Marsh: 02:48 Yeah. Wow. That's, that's huge. I want, I wonder how many new Las Vegas Raiders football stadiums that might that equate to however, I don't think it's done yet, so we may never know.

Rachel Johnson: 03:03 Yeah. We were also testing how many casinos is that in the answers? I don't know. Because casinos use a lot of electricity.

Rob Marsh: 03:10 Got a power, those slot machines or grandma's going to be upset.

Rachel Johnson: 03:13 Yeah, exactly. But anyways, that's just a really big project. Gonna have a significant impact. And I mean even just thinking about the idea of, of taking the equivalent of five times cherry, like the homes that Cherryland serves and powering them with renewable energy, that's a, that's a big de-carbonization impact. That's crazy. And the project itself which is, is moving through the permitting process right now is going to be about a billion dollar investment by the project developer and they've already found someone to purchase the energy from the project. So they have a 25 year power purchase agreement with NV energy. And what I found really fascinating in the research I was doing is that that power purchase agreement is to sell NV energy. All of the output of this project for $38 and 44 cents a megawatt hour for, for 25 years. So that's about 3.8 cents a kilowatt hour, which is unbelievably low cost compared to what, what we have seen historically.

Rob Marsh: 04:11 Yeah. How does that, how does that compare to maybe like you know, our renewable energy programs and what we're paying for that type of stuff. Can you give me some context?

Rachel Johnson: 04:21 Yeah, absolutely. So I'll start by talking at the utility scale. We don't have a lot of utility scale, large, large solar, like you know, 60 90 a hundred megawatts of solar. But we do on the, on the wind side, this is less expensive than our wind contracts. In addition to that, if you want to compare it to the solar, we do have in our port power supply, slightly smaller projects. A lot of them are owned by our members. So they're in either our bile cell program or our net metering program. We're paying anywhere between 5.6 and 12 cents a kilowatt hour for the output of those. So, so still this is, this is significantly less expensive. It's also, if you look kind of at in general, the cost of even natural gas generation or buying natural gas out on the market. This is less expensive than, than that.

Rachel Johnson: 05:09 So it's, it's an incredibly affordable project. And what I, I think is also interesting to know is when we compare it even to the net metering projects on our system or even the wind projects that we have in our portfolio, none of those come with battery storage. One of the longterm criticisms of renewable energy have been that it's an intermittent source of generation. So when the sun's not shining, the wind's not blowing. You don't have access to that energy. Well this project will have enough storage attached to it to essentially provide power for up to four hours after the sun is no longer signing, signing, shining, which, I mean, I don't know if you've been to Vegas, but they need power after dark.

Rob Marsh: 05:49 Yeah. And apparently what happens in Vegas stays in Vegas. What other, what other things do we have listed there?

Rachel Johnson: 05:56 Yeah. So anyway, a, it's certainly a very, not only a, a large project in terms of the amount of power it's going to provide, but I think a project to watch in terms of the price point at which it's going to provide it. But what really brought it to my attention in this moment has to do with some debates going on about the land use attached to it. So the project is being built in the Mojave desert. It is, has already made it through the public, the permitting through the public utilities commission of Nevada. So it's approved the the land that it's going to be built on is supervised by the Bureau of land management. And when you want to build something like this on a BLM piece of land, you have to go through an environmental impact study. So the BLM did that environmental impact study.

Rachel Johnson: 06:39 They've already released it, and it's now in its opportunity to comment phase, which closes this month. And then once it's through that process, they're hoping to start construction this year. So this project will be up in producing and powering 180,000 Cherryland desert homes sometime in 2023. But what has caused some consternation and debate is tied to the amount of land it will use, an impact that will have on species that might use that land as well. This project is going to require 7,100 acres of land or see that? See, that number just was more time. Let me just let, let me just let that sit there for you for a second. Right? It's 7,100 acres of land in the Mojave desert. In order to build this 690 megawatt solar plus 380 megawatt storage project, not, not to bring up the newly formed Las Vegas Raiders. Again, not like I'm a fan or anything like that, but I wonder how many football fields that might that might encompass.

Rachel Johnson: 07:48 Well, I do that math in your head. Let me do that math in my head. But while I'm doing that math in my head let me give you a different piece of context. We have a gas plant that's in our power supply portfolio that we built in the last few years. It produces four. It's a 430 megawatt gas plant. Okay. It takes up nine acres of land. Wow. Nine is then there's only one digit nine. Right. And only 109 a little bit of a difference. Yeah, it is. Unlike this project which takes up the equivalent of 5,400 football fields, you didn't just do that. Your welcome. It won't make the Raiders and you good, but there you go. So on this, on this like kind of large piece of land that the project is going to be built on, there are one of the, what came out of this study that the BLM did is that there are a few species that call that land home.

Rachel Johnson: 08:41 Now I can tell by the shock, look on your face that our listeners can't see. Who wants to call that land home? It's just so, it's just so hot. I just couldn't handle, it's just too hot. Well, I agree. But two of the species that stuck out to me. One, apparently this is a migratory and potential breeding ground space for the Mojave desert tortoise. Yeah. There are only 200,000 Mojave desert tortoises in the wild today. And here's a fun fact for you, pointing towards your thoughts about living in the desert. Desert tortoises spend 95% of their life living underground smart on their part. Yes. Cause they're being their tortoises. Why even bother go for greener pastures. So, so one of the things that that is being kind of floated around is that they might require the developer to provide moving expenses, relocation for these.

Rachel Johnson: 09:43 Yeah. That's interesting though. Yeah. But the the other thing that was kind of interesting that stuck out to me is we, we, there's been debate over time with these large scale projects about not wanting to take up arable land. So farmland, because obviously we need it for farm. Right? Right. So again, like, well what, but what grows in the Mojave desert? Well, my favorite plant ever, apparently the critically endangered three corner. Milkovich I'm sorry, what did you call me? Yeah, I milked that look. That's, yeah. Interesting. I wonder what a milk vetch does. I don't know. And I also want to know who was the person who saw it and was like, Hmm, yup. Milk vetch, that's for sure. That's what we're going to call it.

Rob Marsh: 10:22 That sounds like a great name. Daisy was already taken,

Rachel Johnson: 10:26 But clearly there will be an ecological impact to this, to this project. And so you're starting to see this very interesting, not interesting, and it's not new necessarily, but it's illustrative of a, an ongoing tension that environmental groups are having to

grapple with. One, wanting to see a lot more renewables and clean energy in our portfolios as quickly as possible, wanting to decarbonize as quickly as possible, which happens at scale while simultaneously wanting to protect everything and, and, and have no ecological impact. And that just isn't possible given the land use impacts of these projects. It's just not possible.

Rob Marsh: 11:05 Right. Well you would think if I'm, if again, if I'm average show sitting at home, you think the Mojave desert is going to be the perfect place for something of this size. And again, all the sunlight, all the heat, I so hot w w what, what do we do if that's, if the desert is not a good place for this, what, where do we go next? Do we start talking about rooftops again? Is that going to be the next spot to go?

Rachel Johnson: 11:30 I think that there are a lot of people who would want to say yes to that. And my response to that is a very simple one. If you can bring me 690 megawatts of rooftop solar with battery backup at 3.8 cents a kilowatt hour, we can talk. Okay. But that's, that's the market now and you have to able to compete on that market. And so we are going to have to continue to balance the dishes, astronomical land use implications of renewable energy versus the other energy sources that we've had in our portfolio for a very long time. And I think it points to something we've said at Cherryland over and over and over again and can't say enough. There's no silver bullet. There's no, there's no perfect answer here. And part of it is about having just the right balance of solar, wind, natural gas and continuing to have both nuclear and coal in our, in our portfolio as well.

Rachel Johnson: 12:20 Absolutely. So we're right up on 12 minutes, which is when I said we would stop and I want to honor that. And so to our loyal listeners out there, we would love to hear what you think of this new format. Yes, please. And if you have any ideas for the podcast going forward, cause this is a, this is a year of much experimentation, we'd also love to hear what you think of allowing Rob's voice that was made for radio and face that was made for radio to grace, the presence of this podcast. Oh wow. First time did compliment your voice. Appreciate it, I guess. And without without dragging it out. I will just say thank you for listening to cope energy talk and we hope you enjoy the new format. If you have any feedback, please email pr@cherrylandelectric.coop.