

NREL's Working Group on Community Solar
March 5, 2015
Meeting Transcript

Joyce McLaren: We are going to unmute everybody from this end. So if you could just please mute yourselves, that way you will be able to mute and unmute as you wish, so that you can ask questions whenever you want to.

So again, this is Joyce McLaren at NREL. Sorry, in case you didn't recognize my voice. And today we have Emily on the line. Emily is a consultant with Lotus Engineering, who has been working with localities mostly in Colorado to help understand risk as it relates to solar and in particular making decisions on moving forward with community solar.

So she's gonna try to speak to the risk issues with keeping in mind that a lot of you are from the State level. But a lot of her work has been from the local level, but I think she'll be able to speak to issues that will be interesting to State level folks as well.

So with that ado, I just want to pass it over to Emily and she can let you know how she'd like to handle questions.

Emily Artale: Okay, thank you, Joyce, and hello, everyone. My name is Emily Artale and let me know if you have any problems hearing me at any point. You can send me a chat or unmute your phone and I'll try to adjust.

So as Joyce mentioned, I work with a lot of local government agencies and public agencies in the state of Colorado, helping them with energy and sustainability projects. And from what I've seen in my work, a lot of these agencies are having an increased interest in solar gardens. And this is for good reason.

I think they're looking at solar gardens to help them meet some of their sustainability goals, their renewable energy goals, and a lot of them – and not just municipalities, but residential and the business sector as well – are really interested in getting their energy from a renewable source.

And I think this is great. There's a lot of benefits with solar gardens. Obviously there are environmental benefits, there's financial benefits, social benefits. But it is a very relatively new program. And with that it brings it some risk and also some skepticism and a bit of hesitation from potential customers.

So I worked with a few municipalities looking at community solar. So a feasibility for them and looking at some of the risks. And I spoke with utility companies, the PUC, school district, state agencies, and other energy professionals. And what I did is I pieced together a story of how the program works, and some of the risks and the program limitations that may exist.

And it's the result of this effort _____.

[Crosstalk]

Participant: Can you hear me?

Emily Artale: Yes, I can hear you. Hello?

Participant: Sorry, I just need to mute myself.

Emily Artale: Okay, no problem. So it's the result of this effort that I wanted to share with all of you today. And if you have any questions, feel free to just stop me in the middle. If no problem, we can e-mail.

You can listen to me talk or we can have this more of a discussion, whatever works best for you.

Oops, sorry about that. So as Joyce mentioned, I work at Lotus Engineering in sustainability. I'm the principal engineer and the founder and a consultant. I work a lot in the public sector on energy efficiency and renewable energy projects. A lot with energy performance contracting. And then I also help agencies evaluate the feasibility and the soundness of various programs.

Now, I work and live in Boulder, Colorado, so a lot of the information that I'm going to sharing is based on my experience in this area. But I try to present it in a more broad sense and hope that will be more applicable to different situations across the state.

So in Colorado our solar garden program is fairly new. It was enacted in the 2010 Colorado Community Solar Gardens Act and then it took another year or two for the utility company to write the rules, publish the rules. And then every year or two for its solar garden developers to come, set up shot, developer their offerings and get customers.

And so what that means is that we have very little actual data with which to compare against performance data. So the last time I

checked there are gardens with maybe 12 months of data, maybe 8 months, but a lot of the projects that were being sold to people are based on estimates, best guesses.

And I think this in part is a large contributor to why potential customers are a little hesitate. It's a new program. They know there's risks out there and they haven't quite got their head around all of the risk. And they may not also fully understand the program.

So add onto to that, I think it's a little complicated. So in Colorado we have at least a dozen utilities. And the way it's written is each utility would have their own solar garden program and then each developer has their own business model.

So if you're a potential customer and you're looking at participating in a solar garden, you have to look at the different models and it's really difficult to get an apples-to-apples comparison. So I have a picture here, just as an example, of Xcel's program.

So Xcel is the largest IOU in Colorado. They serve Denver, the surrounding area, and then pockets throughout the state. And so they're like the main dog here. They're the biggest player and so a lot of the information I'm going to be talking to relates to Xcel's program.

So in Xcel's program there are three major players: There's the utility company, the solar garden developer, and the subscriber. And there's a 20-year connection agreement between Xcel Energy and the developer, and this allows for the solar garden to be connected to the grid and then the developers settles their renewable energy credits to Xcel.

And then there's also a contractual agreement between the solar garden developer and the subscriber. And this is really in exchange for the system itself. So the subscriber can either purchase the panels or they can buy the electrons generated from the panels. And then in one model they developer will also issue a portion of the REC payment as an additional incentive to the subscriber.

And then the last relationship is between the utility company and the subscriber. So I'm standing in that – most of you are familiar with it, but there are no contractual agreements. So Xcel Energy issues incentives to the subscriber and they're not guaranteed.

They're not in the contract. They're written in the tariff of Xcel Energy.

And because I'm gonna be talking about incentive *[tape damage]* subscribe to how this works. So *[tape damage]* what happens is that a developer looks at actual consumption data for the subscriber.

[Tape damage] so energy has three cost components that represent their cost of doing business. These cost components are then applied to this blended rate and the result is the bill credit. And it's about – there's a little bit of disagreement, but it's about 70 to 80 percent of the blended rate of a subscriber.

Now, other utility programs have a flat rate, but I've always seen it that the incented rates relate to the customer's electricity rates and they're for track changes. So that's the relationship stem. And in the case that the customer still has to be for electricity, they would pay Xcel Energy accordingly.

Now I'm sure you're all familiar with *[tape damage]* but in case your not I just want to supply this supply. So solar gardens are attractive and have a good payback and a good long-term potential savings. And I divided this into two areas.

So the first is kind of the payback period. So the customer accumulates a bunch of savings as these bill credits and/or RECs if they're receiving that. And as soon as that amount equals their initial investment, they can pay themselves back to pay by the financing agency.

And then it's after this point that they begin to save money. So hopefully the programs are designed that the subscriber should begin to offset most of their electricity cost and it's at that point that that money becomes savings in their pocket.

Now, Joyce told me that all of you are really familiar with solar gardens and you're experts on the topic, so I don't want to go into the benefits, but what I did want to point out was some of the major successes that I have seen of the program.

So one of the things – and maybe this is what you all are seeing as well – there's a ton of interest in solar gardens. So I work with a lot of municipalities and I can't even name one that hasn't considered solar gardens. And you drive through a town and you see the signs in people's front yards about participating in solar

gardens. There is significant interest in this. I think people are really excited about having access to solar in this way.

And what I've seen, there's really good payback periods. So I mention I do a lot of work in energy performance contract team. And the payback periods that I'm familiar with for solar are 20, 30, 40 years. The payback periods that I have seen with solar gardens are 10 to 20 years. So they're really attractive and they're a lot more manageable than a 40-year payback.

Under Xcel's program there's a requirement that five percent of the garden go to low-income subscribers and I think that's just fantastic. There's actually an organization out there called GRID Alternatives, and they work to get renewable energy in the hand of low-income people or people who wouldn't normally [*tape damage*] of the solar for low-income subscribers. It's so reasonable and so low, so I think that it's a fantastic piece of the program.

Another great aspect is that you can transfer ownership. So not only if you move within the territory can you transfer those electrons to compensate your electricity, but let's say that you purchase a bunch of panels and you become more efficient. Well, you can sell those excess panels to someone else in your territory. So it does not disincentivize improvements and efficiency.

And a lot of people are concerned that solar garden companies or solar companies in general could go out of business. And from what I've seen, there are a mechanism to protect the subscriber should anything happen to the developer.

And then finally, this last point – now, this is not true of Xcel's program. This is true of another program I've seen with _____ Electric, which is a small energy company in that western slope. But they're actually minimum incentive levels.

So we know incentive levels will vary, but they have defined a floor. So that offers a little bit of assurance and confidence to the customer.

Now, I think it's true with any program there's gonna be limitations and there's going to be shortfalls. And solar gardens are no different. And it's my thought that some of these shortfalls, some of the limitations, are certainly a nature of the program and of doing business.

Some are just you would know – hindsight. You would know after the fact of things you could say. And when you put all of these together, they sometimes roll into additional risks for the customer. So I split the next few slides into two components. The first one is about limitations and shortfalls of programs that I have seen and possible ways that they could be fixed. And the second one are potential risks to the customer. So my thinking was if you're going to market this to the customer, what are specific information that you could relay that could help them better understand the risk and prepare for the risk.

So these next few slides will talk about the program limitations. So I think this goes without saying new programs is being rolled out. You have a lot of people who are interested in it. It's hard to reach everyone and give them the details of the program. But what that creates, though, is a bit of skepticism, especially for really large projects, because I think people are like, "This makes sense, but there's pieces missing. I can't quite figure out what those pieces are. I'm not sure if I want to do this." I mean that's kind of what I've heard on the street.

And so what you can do – I mean, it seems like a simple solution, but I think it can be really powerful, and that's to create great marketing material that's easy to understand – no references to tariffs, no big jargon, no lingo. I mean, something that someone on the street could understand and get their heads around. And be really transparent. And I'm not saying you have to list out all of the risks, but my suggestion would be if you're gonna say there is zero risk or something like, realize the implication of those statements, because I have seen that included in front of the marketing literature and I have seen that dissuade, because they don't necessarily believe that. And they want that level of transparency.

So as it's my understanding, at least locally, solar gardens were really designed to get solar in the hands of those who couldn't normally get it – so residents of multi-family complexes. Maybe if you want to do ____ panels and not eight panels, this is the more affordable way.

And what we're seeing happening is that developers are definitely going after those groups. But they're also getting anchor subscribers. So in Xcel programs, one subscriber could own 40 percent of the garden. So you might see one community owns 40 percent of the garden, another community owns 25 percent of the garden, and then maybe they fill in the rest with residential and

business sector. And I'm not sure if this is a bad thing or a good thing, but I have heard some grumblings on it.

And this is kind of on the same side. So the rules limit garden designs for developers, which means it limits the potential. And we know that solar gardens are just really popular right now and people want to join them. So it seems like there's a lot of market potential, but it's limited.

So the suggestion being here is that when you're developing programs, if you're revising programs, make sure you get input from the developer and the utility company. Make sure the intent of the program is known. Make sure that the loopholes to get from that intent are known and maybe it's not such a bad thing. And if you don't want to limit market's potential or growth, make sure you allow for that to happen.

This one may not be very surprising to you, but I have seen that there are lots of different interpretations of risk. So I mentioned that I spoke to the PC to utility company representatives, so this includes the people who are running the program, who know it inside and out. This includes the 1-800 number that you call when you have questions about the program. And this includes account representatives.

Different participants that have subscribed to the program and different agencies, it helps all of these people, and I hear different stories on how this program works and the different levels of risk.

And to just give you one example, I'll try to illustrate how this could play out. So talking with a school district that was really interested in doing community solar, but she was also very hesitate, because she said her facility person said that Xcel said the rebates were going away.

And that's not true whatsoever. But there wasn't a resource for them to reference, to know what their rebates were gonna look like. They called their account representative and they were getting different information. And so I'm not sure if that project is completely dead, but it certainly causes a bump in the road. So I would really encourage that all of the players get on the same page and get the same understanding of risk.

And I may also mention, I mean, this was why I was hired too, is to bring a different perspective to the table. So if we all have a different perspective, at least we can talk about it, we won't be cut

off guard, and hopefully that will help us all on the path to build some successful programs.

Now this is – and I think the risk or the limitation that causes the biggest hesitation is in this program and causes the biggest risk. And that is that incentives for the program are manually calculated for each premise location; they vary annually and they are not guaranteed. And honestly, the methodology itself could change, because it's written in that tariff and so if it was a sufficient change it, they could.

When you're signing a project for \$1.7 million, \$2 million, this level of variability does cause a little heartburn for some potential customers. But I believe there are some ways to get around this.

When you're looking at developing programs, see what you can do to create clearly defined, easy to calculate, and dependable incentives. The only way to calculate incentives now is to access Xcel spreadsheet and get all of the utility data and input it and go to the tariff and look at the cost components. It's just not something that a facility manager, an energy manager, a city manager, someone like that is going to do it, let alone a homeowner or a business owner. So try to make it as clear as possible.

And I really love this idea of defining a floor. So that is something someone could reference as a very, very worst case scenario in terms of incentivizing.

And because incentive rates, from what I've seen, are connected to electricity rates, be prepared to talk about electric rates. Because as electric rates increase, incentive rates will increase at that same amount. And so the question is going to come up, "Well, what will incentive rates do over the next few years?"

So with the nature of solar, at least in Colorado, the utility company owns 100% of the REC. I just put in parenthesis to the value of rex for these programs is diminishing, because it's in our fee process. So developers bid their projects on the cost of rex so that the cost is diminishing. But that might be a separate topic.

But the reason I bring this up is because people want solar because they feel it's the right thing to do. If they like the ability to access removable energy, but sometimes they're also wanting to do solar so they can reach greenhouse goals. And if the utility company owns their rex, it might be as straightforward as they think it could

be. And so I would recommend discussing this as part of the marketing and work with customers or work with developers to suggest language that subscribers could use that subscribes how a solar garden is helping them meet their goals.

And then just part of the nature of the free market and of this program, each developer's going to have a different offering, which I think is great. It provides a lot of innovation, a lot of ingenuity. The two solar garden developers that offer projects in the Denver area have very different models.

So one you buy the panels, one you just buy the electrons and you never own the panel. And they both bring the pros and cons, so I think that's really great. But the downside of it is that it's very difficult for customers to do an apples-to-apples comparison. And frankly, that's why they hire me, because I do that comparison for them. I tease out all of the data and try to make a simple comparison.

So if you're working with your developers and your teams and talking to customers, you may want to consider suggesting some standardization of data. And I don't mean telling different developers how to make their offerings or anything like that. I am just suggesting some way to present the data. And one example, I present it here, is a comparison is a customer's existing electricity rates against their new rates with community solar.

And hopefully what we would see is that the new rates would be lower. But it would help them do a comparison of at least the cost, and then some of the non-financial comparisons, like they can be discussed about. But I find that this information is pretty helpful, especially if you're going to decision makers. You don't have a lot of time to get into the details. Something easy for them to look at would be helpful.

And I don't know if this is a case where you're at, but where I am, financing agencies can be a little hesitant to offer large loans for energy efficiency and renewable energy projects. So there are a couple of banks that are starting to get on board. But it does require quite a bit of education.

So consider there's working groups – solar access to capital working groups to help you gather resources and learn about this. And also become familiar with the two different ways that developers acquire panels. So they can do it through the 1603 grant or the tax equity rate.

The reason it's important to know about that is depending which way the panels were acquired will impact the financial process. So as I understand it, 1603 is pretty streamlined. I don't think that really muddles anything.

But if they're a part of the tax equity rate, then a non-profit entity cannot own the panels for up to five years. So then the bank would take ownership of those panels. And then that just plays into however they do business and it becomes a little bit more complicated.

So what I just walk you through are some of the limitations all I have seen of programs in general. And now what I want to walk you through is how the programs are set up that might result in some risks for the customers.

So the idea here being that if we can identify potential sources of risk, we can help prepare for those risks and set reasonable expectations for performance. Now, really, we don't want anybody bummed out at the end of the day, and so that's what this is all about.

So I would argue that no program has performance that would be 100 percent guaranteed, not even energy performance contracting. And solar gardens are really no different. So we know that there's only one component that is guaranteed that is known as a constant, and that is the cost.

That would be in the contract language, and that won't change. All of the other factors that go into determining the financial performance of the solar garden will vary and/or not guaranteed. And sometimes they're just speculated. The best data available. This includes the utility incentives; it includes cost, which is a result of consumption and electric rates vary; and solar electricity production.

So when I talk to customers, I tell them that it's variability that will influence their payback period and the potential for long-term savings. And so it's this variability that results in risk, financial risk for the customer.

Now, depending on your program and the developer, of course there's going to be a ton of other risks. And some of them, they're related to a bunch of different things. I know people are concerned that their solar panels won't perform or risks like warranties, or all

of those. There are so many I didn't mention here, but I mention two of the other top ones that I would pay attention to.

The first one being that the subscriber could pay a higher net electricity cost. I haven't seen this to be the case necessarily, except if certain things were to play out. And this is something we would really want to pay attention to to make sure it does not happen.

And the second one is inevitably with any program, there's going to be a learning curve. So certain things could happen that we may not depend on. But I think that more or less over time everything should fall into place and it's just a degree of more or less that we need to try to define and work with our customers to make sure that they're comfortable with. And I think once they get to that point then they can set those reasonable expectations for performance.

And the reason I say this is because – I don't want to say anything negative about anyone, but when you're selling a project, it's best to make it look really good. But if it doesn't perform as it was promised to you, you're gonna not be so happy. If you're told the payback period is nine years and then the payback period ends up to be 13 years and you have a whole new board or council members, I mean, they're gonna be really bummed out, not just on the program but possibly even solar in general. And we see that.

I hear comments and council meetings about this or that happening in the '70s. So one bad story can really see a ripple effect. And so I present these as recommendations as a way to ensure that our programs and projects will be successful today and over time.

So I really recommend that customers get familiar with their utility bill, how much they're using and how much they're spending. And I believe that there's a role for state agencies and utility companies to play in this to really encourage this, to help people look at their utility bills to provide resources, support, to not make it daunting. I mean, just looking at a bill, it's all those different terms. It can be kind of confusing and most of us just pay attention to our bills or the cost, not necessarily looking at consumption.

And for solar gardens, it is important to understand consumption and rates. And there's a few reasons. Number one, you want to look at the size of the solar garden and make sure it matches your consumption. Some programs are designed where you'd be incentivized to buy a garden that is larger, bigger, than your

consumption. And even though some programs allow for that, there are certain cases when you don't want that to happen, when you want your solar garden to equal 90 percent of your consumption. So understanding how much you have used and how much you think you will use in the future is a really important component of this.

And the second part of this is understanding your electric rates. As I mentioned, incentives are typically tied to electric rates. And you got to ask the question of utility companies and your PUCs all the time. What will the electricity rates be in the future?

And I know that it's a type of conversation that you just can't get a straightforward answer. Nobody knows. Nobody has a crystal ball. There's lots of things that come into play, and no one wants to commit to a number, because you don't want to be held to that number.

But what you can tell a customer is say, "Let's look at what your rates have done and maybe we can use that information to predict what will happen, especially if we know certain things that might be coming into play." And then this of course will impact your incentive rates.

And then it's kind of surprising to me, but one of the biggest worries that I have heard from potential customers is they are worried if they buy solar gardens they will not perform. And I am not sure where this comes from, but this is a big concern. So I recommend that they work with the developers to look at the equipment warranties and operation procedures.

So I've worked with developers where the warranties cover ten years, where the contract period is 20 years. And we're saying, "Okay, what will happen for the second ten years?" And the developers actually went out and extended the warranty for 20 years. So have these conversations and make sure the customer is covered for 20 years. Or if they're not, it's very clearly defined the roles and responsibilities should something happen. And then look at the O&M procedures.

The solar garden developers that I have seen actually contacted a third party to do the O&M of their systems and they used very tried and true, robust strategies. So typically they don't have any problem sharing this information and it can give someone a peace of mind.

It also helps when developers are saying, "Hey, this isn't gonna last 50 years. You're gonna have all these savings. It's gonna be great." And then you dig into the warranties and it's like, oh, it's 15 years. So what happens to the other 35 years? So this is part of that discussion of transparency and getting this information from your developers.

And then let your customer know that there still may be cases where they will have to pay their utility company for electricity. So I know that when I work with local municipalities, sometimes what happens is they adjust it by just accordingly to accommodate large investments.

And that's just great, but there's gonna be a case when you have to pay \$1,000.00 here, \$5,000.00 here, or something like that and you don't want the budgets adjusted so much that they don't have the money to pay for that. So this is just part of them not getting blindsided after the fact. So make sure that's part of the discussion.

And then I encourage my customers to understand the potential variability that can exist with the financial projections of their performance. So I want to dig into this just a little bit.

In Colorado— we have at least a dozen utilities and they all have different selection rates. Some pay 9 cents, some pay 22 cents. And they all have different rates of expiration. Some have one and a half percent, some have 19 percent. And if you were take all of that data and average it and present it to a customer, well, you could really be representing what could happen for this particular customer.

So I think it's very important to get accurate and reasonable expiration dates. And it's because it an impact the entire financial performance of the project. So I try to illustrate that with this graph. And when I present this to customers, I talk about like a best-case, worst-case scenario. So the best case in this example would be represented by the blue line, the worst-case by the green line.

And the blue case represents five percent escalation. So for solar garden people, they want rates to increase, because that means they will get more incentives and their payback will be less. The green line represents the worst case. So for solar garden developers, they don't want rates to increase a lot. I mean, the rest of us do, but solar garden developers don't. So that would be a worst-case

scenario, because that means they get less money, which means longer payback, less potential for long-term savings.

And we know that one of these cases may be presented to the customer, but in reality what's going to happen is probably something in between here. So that red line is based on something that I created for my customers. So I looked at historic rate increases, future rate increases, all the conversations that I mentioned before, current legislation, upcoming legislation, and just try to figure out, okay, what's going to happen over 20 years? And then I tried to model that here. So in reality rates are gonna vary at different rates, different years. It's gonna just look different.

But the whole idea here is it's gonna be probably more moderate than maybe what was proposed. But not as bad as the worst-case scenario. So we know that what's truly going to happen is somewhere in between the blue and green line, and I said the red line represents.

So what this means is that the payback period may be longer than what the customer thought originally and the potential for long-term savings may be slightly less.

So then I encouraged my customers to consider using conservative value for escalation rates and ask the developer, "How did you come up with these escalation rates? Often I hear that the statewide average" – and then apply these escalation rates and any other impacts that you can think of to your performance and just see what happens.

Most likely you're gonna get a bunch of different scenarios. And then rank them, figure out what's the likelihood of these different scenarios? When I've done this with my clients, we've actually presented this to council. "So these are different scenarios. This is what I think the likelihood gonna happen, based on X, Y, and Z. What do you think?"

And in the worst-case scenario, the payback period was the longest it could possibly be. It still wasn't that bad. And the communities went forward. But at least now they're armed with that knowledge of what they could be getting into.

And then finally you may notice that is the same with me *[laughs]*, and with this presentation, I really, really encourage transparency of the process. So I encourage our municipalities to review all the

solar garden contract language, because there are going to be bits in there are gonna be surprising to you. What if... Just make sure you're comfortable with that.

And then probably my nature of being an engineer and a consultant, I encourage the clients to question everything. I had a webinar on solar gardens about a year ago and we were talking about some of this stuff. And one of the energy managers for the school district said, "Wait a second, you mean this isn't guaranteed and this could change and this could vary?" She was never told that.

When people receive this information, they assume that's the way that it is unless they have a background in it. So I basically encouraged them to ask how all of these numbers were obtained and what the assumptions were, because we know that nothing is stagnant in the energy world. Everything will change and we have to use the information available to us to come up with these best estimates. But they're estimates and so you also need to make sure that they're reasonable to your particular situation.

And then if this isn't something that they do, I would recommend they get a third party to do it on their behalf, and that's what I've done with these few local municipalities.

And then some other considerations. I'm sure you all probably know this, but sharing with a customer and of course financing is gonna bring additional cost to the system. And always promoting efficiency.

So and the State's energy office a few years ago, they was an individual who came up with this phrase. It's kind of cheesy, but it was "Eat your building energy efficiency veggie first and your renewable energy dessert second." And it is a silly saying, but I think it does emphasize that let's really get at efficiency first, then we can get smaller solar gardens. We can reduce our cost.

And then finally, solar gardens will not reduce _____. I think that's an important part. There's a city down the road from me. It's really progressive, really, really likes renewables, but they would not do solar gardens, because they want solar to help them impact within the end of their building. So that's something someone really wants, we may consider a different model.

So I wanted to wrap this up with a case story. So this is the city of Lakewood. This is a community that I worked with. They're

southwest of Denver. They're actually right door to where NREL's located. I started working with them last year and then they connected with a solar garden August 2014.

Actually, the CEC, I believe, spoke with you all a little while ago. And their solar garden is just serving the city operation. So they own 40 percent of the total garden. Their size is 274 kw. Now, I did put in what I explained. I looked at different escalation rates and looked at the likelihood of it happening and all of these scenarios for them.

And from that data it ended up looking like – I'm calling a moderate-case scenario. They stood to save about a million dollars. And this was the sum of build credits and REC payments, because CEC also offers REC payments.

And this was a million dollars over 20 years and it resulted in the payback of about nine and a half years, so which was pretty amazing stuff. And we're asking the city why they chose to pursue solar gardens.

Number one, they wanted to save money. And number two, they wanted to become more sustainable. They felt it was the right thing to do. They were getting the call from their citizens and they really wanted to be a leader and a role model.

So this is a really beautiful picture right by where I live. Those are the flatirons. So Boulder's just right beneath those. It's very, very pretty. And that's it, a picture of a local solar garden I think from CEC. So this is actually Boulder Cowdery Meadows. So this solar garden serves the residents and businesses in Boulder County.

So I think community solar is just a great option. It has so much potential. But I think there are some shortfalls and limitations of the program and certain risks to customers. I'm of the opinion that you can design your program to overcome some of these program risks and that you can inform the customers of some of the potential risks. And it's by doing that that we can ultimately end up with very successful programs and successful projects.

So here's my contact information and I really appreciate all of you here listening to what I have to say. And if you have any questions, please let me know. We can talk about them now or feel free to contact me at a later time.

Joyce McLaren: Great. Thanks so much, Emily.

Emily Artale: Sure.

Joyce McLaren: Does anybody have any questions that you'd like to ask right now? No? Okay, then. Well, then I want to say thank you again to Emily for joining us and we will be sending around the slides so that you can review them at your leisure and use the contact information there to get in touch if you think of any questions later. But thanks, everybody for joining.

And we'll be in touch about future communications. We may be doing some individualized calls starting in the next couple of weeks to address some of the more specific questions that you might be having that we can't address through the webinar format. So please kind of keep an eye out for Kim Peterson to contact you about that.

So again, thank you, Emily and –

Emily Artale: Sure. Thank you, everyone.

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