MARTY ROSENBERG
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JEFF CRAMER INTERVIEW

Welcome to GridTalk. Today we're very pleased to have Jeff Cramer with have with us. Jeff is the president and CEO for the Coalition for Community Solar Access where he's been eight years, is that right, Jeff?

A: It's been eight years, wow. Yes.

Q: Eight marvelous years. Thanks for joining us.

A: Thank you, Marty. Good to be here.

Q: So, it's a good time I think to catch up on what Community Solar is all about and where it stands and what's it's poised to accomplish and the hurdles that you face and challenges that need addressing so I'm very pleased to have you. With the uptick in federal spending, stimulus money and a lot of pump priming going on, we want to know how Community Solar is positioned. Why don't you take us through where you're at right today. The briefing I got for our chat said that by the end of this year, there should

be six gigawatts, 6,000 megawatts of community solar. Is that a lot in your book or is it just a harbinger of things to come?

A: Yeah, I suppose it depends on your frame of reference so if we do step back a bit and we look back all the way to the origins of Community Solar, which I believe was a small 150-kilowatt project in the state of Washington back in 2006 to today, it's a lot of Community Solar. It's thousands of projects around the country in over 20 states across the country but as you look to the future and you look in the long run and not even that distant of a future, we're seeing multiples of that six gigawatts on the system. Right now, demand outstrips, far outstrips supply for Community Solar and the business models, the innovation in the sector is only increasing, so it's…

Q: So, let's stop right there when you say demand outstrips supply.

A: Sure.

Q: Does that mean there are objects waiting to find the actual panels? Are they trying to put the business model in place or are they waiting for state regulatory approvals?

A: So, it's sort of all the above. There are projects awaiting regulatory approvals through gigawatts of interconnection queues and essentially meaning that the grid and the policies that regulate the grid and plugging into the system are in the process

of updating to be able to accommodate this new influx of distributed generation and on the other side, there are customers across the country on waiting lists to join Community Solar projects that haven't been built yet, or are in the process of being developed. And then as you look sort of further out, you've got almost I believe up to 10 states now that don't have Community Solar that are considering through the legislative process, creating Community Solar programs so while those customers may be not directly in the queue awaiting projects, based on our experience in other states, we know that they are hundreds of thousands to millions of customers waiting to participate in Community Solar and in those say 10 markets, or 10 states where they're considering Community Solar, there are thousands of landowners, farmers, and the like that are already are working with Community Solar providers awaiting the opportunity to be able to create new revenue streams for their family farms to participate in Community Solar.

Q: So, when we look at the universe of solar in America today, I like to think of three large buckets. Everybody thinks first of folks, primarily affluent folks have been early adopters and put it on their house because they wanted to make it a contribution to fight a climate change. Then, you have utilities stepping us and saying, look, it's much more efficient to build larger solar

farms; we're going to do it. And the third piece is the piece that you're involved with which would be third-party development of projects.

A: Um hum.

Q: There's a pent-up need for lot's more solar. I mean, some estimates say that globally, we need as much as 70 times as much solar as we have right now to really make a dent in the climate challenge that we face. Do you think Community Solar is going to be playing a larger and larger role as if so, take a minute and say where it succeeds where the utility-owned model and the rooftop solar individual home-owner model might not be quite up to making the challenge.

A: Yeah, Marty, that's the $64,000 question there. I think it sort of requires stepping back a moment and saying that we…the last sort of 15 years since I've been in this sector has been sort of a pilot stage to commercialization stage overall for us to prove that this technology works, that these policies work and we've largely done that. That's the good news is that I think that even utilities across the country have realized and are sort of shifting their profit-making towards building out renewables but I don't think we can underestimate the challenge and if we look to say, 20, 40 years, something like that and the number of states that want to hit 80% or 100% clean energy, we need to

completely transform the electricity system. We need to go essentially from building the Model T and a few dirt roads to an international highway system and in doing that for the national highway system…in doing that, yeah, it's going to require a portfolio of resources to get there. Any single entity that says we've got a plan and we'll control it is blowing smoke at this point. So, what Community Solar offers is it offers a sort of a hub for the deployment of, a central hub for the deployment of distributed generation. We can deploy gigawatts worth of distributed solar at scale that solves policy problems like offering new alternatives for income for family farmers to offering access to local clean energy for those that have been left behind by the clean energy revolution, particularly low-to-moderate income customers and we're seeing a number of programs focused on serving and providing benefits to low-income customers. So again, then when you step back, we're going to need all of the above. Utilities are right, we need a lot of transmission. We need a lot of bulk power generation but we're also right that we need to double-down on providing distributed generation of scale and you know the rooftop segment is also right, has been right and will be right going forward in its need to be able to continue to put solar on roofs and the combination of that sort of rooftop solar, Community Solar, and other DERs

with demand response, some call virtual power plants, distributed storage all can work together to permanently reduce and stabilize demand so that we can put less stress on the bulk power system. We did a study back in 2021 that we're continuing to update called the "Local Solar Roadmap" that to me was a clarion call to policy makers to say, look, we need not only are there good policy reasons to do all of the above and to prioritize DG as well as utility scale but it's going to save us money as well as providing these policy benefits that everyone's seeking.

Q: So, just to give our listeners who are all over the country…

A: Yeah.

Q: A chance to understand, Community Solar is now available and I'll read it real fast: California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Massachusetts, Maryland, Maine, Minnesota, New Mexico, New Hampshire, New Jersey, New York, Oregon, Rhode Island, Virginia, Vermont, and D.C. And if you throw in the states that you say are considering or about to consider it, half of the states are going to have some form of Community Solar pretty soon. I'm seeing one that does not; I'm sitting in Kansas. So, what's the reality here in terms of what a third-party developer can do it? Can they just prohibited or is the turf so unforgiving that they wouldn't even come into Kansas?

A: Yeah, I mean, you're right, Marty that Kansas doesn't have Community Solar per se though it is an important note to realize that Community Solar really started in more of these rural, red, purple-ish, political territories and areas through co-ops creating community solar projects so in Kansas, there may not be a state-wide program but I assure there's probably at least one or two Community Solar facilities through the co-ops that have less of the regulatory red tape to step through to create and in those co-op projects, they work with our members, the Community Solar providers to create those programs. Now that aside, there's sort of a couple of ways to look at states that have and don't have Community Solar. In the list that you offered; I'd say about half of those have active, robust programs. The other half have either programs in name only or have programs that are in implementation so California is an interesting one in that we've been working for over a decade now to implement a Community Solar program. Through fits and starts, we believe we're at the precipice of one of the largest, more innovative programs in the country being announced in California which would be based on a Net Value Billing Tariff which essentially would pair the availability of Community Solar facilities to create economies of scale through gigawatts of deployment but also the end projects that are targeted of at least 50% at serving low-to-moderate

income customers and in doing it in a way that serves the grid by creating a tariff that incentivizing the pairing of storage to address say the duck curve in California, so that's one example. So, those are the states that say have Community Solar or are in the process of creating Community Solar. The other states, say almost 30 states that don't have it as I noted earlier about 10 of them are considering and I wouldn't be surprised in the next couple of years if almost all of them are creating programs because this is where you get to the really interesting stuff of Community Solar to me is that Community Solar can be designed to meet whatever kind of policy goals you have, so if you're Kansas or take Iowa or you're Wisconsin and your goal is to be able to create a program that creates competition and choice for customers or leverage private financing rather than solely using shareholder dollars to reduce risk for customers and ratepayers, that can be your goal for your policy program. If you are, say California and you're saying, look, I have specific grid needs I'm looking to address and I have specific environmental justice goals that I'm looking to meet, you can design a program to do that. That's the special sauce of Community Solar.

Q: So, talk a little bit about political popularity of Community Solar. If I have solar on my roof, I see it, my

neighbors' see it. If a utility builds out a field it's evident, it smacks everybody in the face.

A: Sure.

Q: How does a middle-or-lower-income person in Chicago or St. Louis or Miami take ownership and involvement in a Community Solar project that might be miles from their house?

A: Good question. Well first, Community Solar can be both on a roof or ground-mounted; it can be either and there are great examples of both. And as we know, there are still hundreds of thousands of millions of square feet of commercial roofs out there still available to be able to create large-scale distributed generation systems through Community Solar. But, getting back to your question, this is also to me the magic of Community Solar is that we've figured out a way for any electricity customer to be able to participate and benefit from local clean energy deployment in less than five minutes with guaranteed savings and the way that works is, going back to the initial forms of Community Solar, customers had to review hundreds of pages of documents, take out a loan, talk to their bank. This was a hours and hours process with individual financial risk because private third-party financiers were not yet comfortable with the model so the risk was borne onto the customer themself. As the model developed, essentially, we used

to say the first 500 megawatts to a gigawatt as a learning lab. For Community Solar, financiers became comfortable with the model of Community Solar and now private financiers, third-party financiers are willing to put up the private capital for the project based on there being a program that gives them compensation per kilowatt generated onto the system and then the customers can simply participate in the project by being a subscriber so it's really as simple as signing up simple as signing up for your Netflix or Apple TV or something like that. They go on, they connect their utility account, electricity account with a Community Solar facility and then they either through consolidated billing with one bill or when there isn't consolidated billing, with two bills, get a credit from the Community Solar subscription and then they pay their electricity bill and usually they receive savings from anywhere from five to 20 percent, depending on where they are. So, again, to me, if you step back here and you say, 10 years ago wow, we have all these customers that can't participate in the clean energy revolution, and that and particularly those that have been left behind for over a hundred years of discrimination in the electric grid through either from poor service or fossil fuels and the deleterious effects of their emissions now, through five minutes, it almost seems too good to be true at times because of the

innovation in the sector. All they have to do is sign up, participate, and subscribe through a Community Solar facility and they are now connected to a facility that's say, somewhere within their utility service district so that's where all the electrons from the project are sort of being socialized within the system and they are creating more solar on the system and receiving the benefits directly through the Community Solar provider.

Q: What are the utilities' attitudes toward this? I would imagine they range from whole-hearted endorsement to lukewarm?

A: Yeah, I mean I think it depends on where you are. Again, as we stated at the beginning here I think that the good news here is that we're all getting to the same page and we're saying, look, we all need to, we need to transform this system in the next 15-20 years so in deregulated sort of environments where utilities don't own generation or transmission it's a bit more of a natural conversation and we work very well and closely with utilities in those areas working on interconnection reforms to ensure that they can better manage their systems and better integrate new distributed energy resources and we can both work with customers to provide them a better experience and give them the things they want. In vertically integrated environments I think there's opportunity but certainly the utilities, they make

money off of owning things and building things for themselves, so…

Q: So, do you see a need to change the regulatory model particularly the vertically integrated utilities?

A: You know, I think that's probably above my pay grade but at least from where I sit but ultimately, I think it…

Q: Above your pay grade or politically impossible?

A: *Laughing*…you know, maybe one of the two and look, I think if we're going to hit our goals by 2035, 2040, 2050, whatever we're talking about as our benchmark here, some big changes are going to have to be in store. Sort of the cost-to-service, sort of ratemaking model is probably going to hit a wall at some point and I think right now, we're sort of retrofitting our vehicle with new technology as the car's driving down the highway at a hundred miles an hour and at some point, we're going to need to maybe get a new vehicle…

Q: So, it's kind of interesting the ferment and the creativity that's out there and not to dwell too much on where I'm at but the Kansas City's City Manager is pushing a plan to develop the largest municipal solar project at Kansas City International Airport, 500 megawatts which means though, the game is changing and demand is coming from new quarters for change.

A: Yeah, I agree, I agree and I think you're seeing examples of projects like this in places that we didn't typically used to see them but I think the key is going to be sort of addressing this valley of death between early commercialization and achieving higher penetrations and then when you do that, you sort of have to look to places that have achieved that, I mean, I was recently actually in southern Australia and to my understanding that the amount they have sometimes up to 100% of their daily peaks being served by distributed solar which is, it's important to look at that working on some level and at the same time, we sort of have to reverse engineer how that works within our regulatory system and our sort of business models that all play into it here.

Q: So, as long as we're looking at numbers, let's finish with some numbers that according to information your team provided, there's about six gigawatts of Community Solar at the end of this year.

A: Yeah.

Q: And there's a possibility of 14 by later in the decade; 14 gigawatts. That's still a fraction of the 72,000 megawatts of solar that's available in the United States which is just 3.4% of U.S. generation. If we're going to ramp up, do you think all of the buckets we talked about are going to be growing or do you think Community Solar's going to be playing the largest role?

A: All of the buckets will certainly be growing and I would never assume that Community Solar is going to the lion's share in capacity of that; it's not, but it's going to be disproportionally larger going forward of a percentage of that capacity than it's been today. So, in our local solar roadmap where we did a national model looking at the potential of scaling distributed solar, distributed storage, and utility-scale solar and wind and essentially what this model did is it put all steel that you need to put into the ground in the electricity system from poles and wires, transmission, even natural gas, coal, whatever it would be and said, what's the optimal mix here? And when it did that, it found that by 2050 we needed to deploy at least 247 gigawatts of local rooftop and Community Solar to achieve the lowest cost and in doing that, by deploying that much Community Solar and rooftop solar, we could save $473 billion dollars as compared to a grid that didn't expand local solar and storage. Now, in that model…

Q: Is that amount of money over a period of time: that's not over a year?

A: No, no, that's by 2050 cumulatively.

Q: Okay.

A: But importantly, the more local solar also unlocks more potential for the utility-scale solar and wind so in that model

we found that the lowest cost grid requires a lot more utility-scale solar. In fact, based on the retiring of these fossil fuel power plants that as we know, can run infrequently, at least the peakers, deploying local solar and storage would more efficiently help us integrate, I think it was almost 800; yeah, it was 798 gigawatts of utility-scale solar and 102 gigawatts of utility-scale wind by 2050 so we absolutely need both and we're going to need a lot more utility-scale solar and wind but the difference there is that other models might say that we have to deploy over a terawatt of utility-scale solar and wind but if we better leverage and manage the distribution system we're going to more efficiently be able to buildout the bulk power system.

Q: Last question I want to ask you is for folks that really want to get into the weeds on this and monitor and track how fast your progress is; you're on multiple fronts and multiple states. How should people stay informed of this and what are the big milestones they should be watching for in terms of your hitting your objectives?

A: Sure, so I mean I think the first thing they can do is all of the sort of projects that are deployed on the distribution system are managed by states, not a sort of national or a regional RTO, so they can call their legislators and they can say we want more of this stuff because that's how this stuff is

governed, distributed generation is governed and enabled so I'd encourage everybody if they don't currently have access to call their local legislator and say hey, we want access to Community Solar. We also work with McKinsey, a research firm that tracks the deployment of these resources and we work really closely with the Department of Energy as well, so we work with the National Renewable Energy Lab who tracks the deployment of and the growth in this market so I'd look for our biannual report with McKinsey and I'd look the regular reports that the National Renewable Energy Lab does and of course, follow our favorite Secretary of Energy as she regularly tours Community Solar facilities. I've definitely walked through the mud at a number of Community Solar facilities with the secretary and others who always enjoy touring those facilities regularly.

Q: Well, thanks, Jeff. Thanks for this sweeping update. We appreciate it.

A: Thanks for your interest, Marty, and this was fun.

Okay. We've been talking to Jeff Cramer, who's president and CEO of The Coalition for Community Solar Access.

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END OF TAPE