



Episode 31 – Using Solar Technology

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Announcer:

The Alabama Crops Report podcast, your trusted information source for Alabama agriculture.

Katelyn Kesheimer:

Hello, and welcome back to another episode of the Alabama Crops Report podcast. I am Katelyn Kesheimer extension entomologist.

Adam Rabinowitz:

And I'm Adam Rabinowitz, extension economist.

Katelyn Kesheimer:

Hey Adam, welcome back. It's been a little bit since we've been hosting together.

Adam Rabinowitz:

Absolutely. We have done quite a few episodes of the podcast and it's exciting to be here with you today. I'm excited to introduce our guest as well. So we have Dennis Brothers who is an Associate Extension Professor in the department of Agricultural Economics and Rural Sociology at Auburn University. And Dennis generally works on poultry issues, but he's also engaged in solar adoption and the use of solar technology on the farm. And that's what we're going to talk about today, in terms of not just using solar on the farm, but ways to make money in terms of solar leasing. So, Dennis, it's great for you to be here today.

Dennis Brothers:

Thank you, Adam. I'm glad to be here.

Katelyn Kesheimer:

And Dennis is a first time guest and like Adam said, I'm really excited because I don't know much about solar leasing. I've heard the term here and there over the past couple months, but just kick us off Dennis, what is solar leasing?

Dennis Brothers:

What is solar leasing? Well under most applications, solar land lease is just basically a land rental proposition. Developers of solar generation companies, they basically lease land as a place to put panels to generate solar into, [inaudible 00:01:42] and to sell that power to utility companies.

Katelyn Kesheimer:

And is that popular here in Alabama?

Dennis Brothers:

Not really.

Katelyn Kesheimer:

Okay.

Dennis Brothers:

Just to be honest. Most of this occurs in states that have utility company and relationships with the state governments that allow net metering situations with utility companies and where utility companies is actively purchasing solar power. That doesn't happen a lot in Alabama. And also it's more prevalent in states that have higher rates of solar radiation like Arizona or New Mexico or places out west that have a lot higher solar rate.

Adam Rabinowitz:

But I know within the region here in the Southeast region, there are some areas where, you drive around and you see some large... What I call almost solar farms.

Dennis Brothers:

Solar farms is the popular term. That's what you most time... You'll hear folks talk about them as, is solar farms. And there are some of those in existence, in the Southeast. There's a few in Alabama. There's more in Georgia. There's some in Florida. But once again, it's completely based on the local utility company and what they want

to do because somebody has to buy that power. So if a local utility company has a desire to purchase the power, then it's a possibility that some of these may exist.

Katelyn Kesheimer:

So you mentioned out west there's a lot more, but the possibility to put them here in Alabama does exist. So what are the requirements in terms of how much land they need? What type of land are they looking for and do any areas of Alabama fit that bill?

Dennis Brothers:

It's possible. I said, the first requirement is you got to have a utility company that wants to buy the power. But if that exists, the farms have to be located close to a high voltage transmission line, close enough that they can get the power from the farm to a transmission line or substation. And so that's one requirement. Plus it has to be land that's relatively level, it's hard to put these panels on land that's real hilly. And cleared land, because if you have to go into the expense of clearing the land first, then it drastically cuts down on the value of the power you're generating. So cleared land, a good access to it, land that doesn't take a lot of preparation, can't be too rocky because you have to drive these panel racks into the ground, that holds the panels up. So can't have a real rocky area that makes it prohibitive.

Katelyn Kesheimer:

You've probably heard me talk about my time in West Texas, so I can see how out west would be a really great place because it's flat for miles.

Dennis Brothers:

Clear land, not many trees.

Katelyn Kesheimer:

No trees, nothing to clear, just a little bit of dust here and there.

Dennis Brothers:

You mentioned dust, that's a consideration. Out there, one of the problems they have is dust, that accumulates on the panels and we don't necessarily have that problem in the Southeast, because typically we get enough rain in a year that washes the panels off pretty well just by natural rain events. There is some trade off when you go out west and you got to deal with dust and dirty accumulation on the panels that have to be washed. And that could place a considerable amount of water and expense, where there's not always a lot of water available.

Katelyn Kesheimer:

Sure, absolutely.

Adam Rabinowitz:

But I'm hearing a couple of things that might be some opportunities for row crop producers in that, having that larger area of land that's flat and generally free of the hilly areas of the rocks and such, could provide them an opportunity, if it's right in the state. And so can you talk a little bit about that in terms of, within Alabama, but also what farmers could expect on a per acre return?

Dennis Brothers:

Yes. Well, first you think about scale. And typically a solar farm is between one and five megawatts. A megawatt is a thousand kilowatts. And that one megawatt typically takes about two and a half acres of land of coverage. So you're looking at... The land requirement may not be that big, but a lot of your larger solar farms may be 50 megawatts. So you're looking at 100 acres. The value of that, what a land owner could expect to get in a solar lease is highly variable. And you hear all kind of numbers and it all depends what the value of that power being produced is, which once again goes back to how much a utility company is willing to pay for the power. And you hear numbers from \$200 to \$2,000.

Katelyn Kesheimer:

That's a wide range.

Dennis Brothers:

And it can be a very wide range. And it varies with all those things we've talked about, is the land flat? Does it have good access to a high voltage line? Is it relatively easy to install? Can it get to all those things play into it. But probably one of the biggest factors is how much is that produced power going to be worth? And we have to remember, a lot of people don't understand this, but if you have a solar farm lease and you're leasing your land, you're not in the solar power generation business, you're in the land rental business. So you're giving somebody else your land to use. So it means you don't have access to it. And these are long leases, 25, 30 years. There is some security factor that a lot of growers think about. Well, I can guarantee some income on this land for the next 25, 30 years.

Dennis Brothers:

Yes you can, but you're stuck with that. You don't have any other option if you sign that lease. So, you got to look long term and think long term. And you hear a lot of these high numbers, like \$2,000 an acre. Well, if it sounds too good to be true, it probably is. And you have to be careful when you're dealing with solar companies and make sure you're dealing with somebody that's reputable. We've heard of growers saying, yeah, they told me they're going to give me this much money and that much money never showed up. So there's some due diligence that growers need to do if you're considering something like this. If somebody comes to you, wants to rent your land for this purpose, you need to do a little work to find out about who you're talking to.

Katelyn Kesheimer:

With the security and variability of agriculture and prices and everything else, there is, as a benefit that security for 25, 30 years, but there's also some potential risks. And so what advice would you have for growers that are maybe thinking about getting into a contract with a solar leasing company on their land?

Dennis Brothers:

Well, one of the first things I would tell them is to really think about, do they know what they're going to be doing with their land or want to be doing with their land 25, 30 years from now? Or what are their heirs going to be wanting to do with that land 25, 30 years from now? A lot of times these leases are gotten into by an older farmer, and they may not be the ones that will be over the land in 15 years. But yet there's... Here's another 15 year left on this lease and his family can't do anything with that land until the lease is up. And then once that lease is up, somebody has to be in charge of decommissioning these panels, taking them off the property, putting the property back in use as it was prior, there's some cost and expense to that.

Dennis Brothers:

You don't want a company that just runs their lease out and then they're gone. So that's a consideration. One consideration people don't often think about is, a lot of these leases are very restrictive. So much so that even the land owner himself can't go on his own land while it's under lease, he's restricted from entry for any purpose. Sometimes they're restrictions of what can be done around the land. For instance hunting, they don't want somebody hunting and a stray bullet coming and hit the solar panel. Or some activity that creates a lot of dust, that could cause a cleanliness problem on the panel. So that could be a lot of restrictions as well. And all that must be looked at and considered.

Katelyn Kesheimer:

Yeah, what I'm hearing is, if any potential contracts need to be read over with a fine tooth comb, to make sure you understand exactly what you're getting into with this.

Dennis Brothers:

And there's no standard contract, it's going to vary with whatever solar generation company that you deal with. There's no... That I know of, there're no laws or state or federal laws that oversee these contracts. It's just up to private negotiation between the land owner and the solar company, is what they decide to do. So it could be anything.

Adam Rabinowitz:

So that dollar amount that one might expect to receive as a payment for having that, is certainly a nice little buy-in and gets your attention. But there are a lot of considerations that you've mentioned here and just a lot of issues that land owners and producers need to think about. And what that potential lost income's going to be for not having that land for that crop for that long period of time.

Dennis Brothers:

It's definitely an opportunity cost situation. What am I giving up?

Katelyn Kesheimer:

Especially with restrictive access to your land or building around it if you have future plans, it sounds like there's a lot to think about here.

Dennis Brothers:

Once again, it's highly variable. I've seen small solar farms in the middle of a subdivision. I've seen small solar farms on the edge of a cotton field. And so if I was a row crop grower, and I was looking at this, I'm going to look first at my marginal producing land perhaps. Or land that I have to only get to farm a piece of it, because it's wet during the wrong times of the year. Some things like that, that'd be the first place I would look if I was looking at something like that. Look at the marginal land or the land that hasn't been producing very good for the last five, 10 years. And it's not worth putting the extra effort to get it to produce. And those kind of things are what I look at. To take some prime crop land out of production to put a solar farm in, I mean, sure you can do that, but you got to think about this as a 25 or 30 year decision.

Dennis Brothers:

Am I going to be okay with that? There's some other opportunities for growers to look at so long, that may not involve long term leasing for sure, of large bits of property. Particularly if I'm a grower that has some alternative use for electricity. If I got a greenhouse or something like that or poultry for instance, and I'm using a lot of electricity, I could possibly get into to solar as a way to offset purchased electricity. And that can be done. One of the obstacles of that is, it can be a high cash cost to get into that situation.

Dennis Brothers:

But there are leasing opportunities that a grower could get into where he leases from a solar producer or a solar company, that he leases a system for a period of time, kind of like a lease to own situation. Or he pays a lease payment. The solar generation company is using net metering laws or net metering opportunities to sell power to utility company during the lease period. That's where they're making their money plus some tax incentives possibly. But after a certain period of time, after the grower has paid this lease payment, he has basically paid for the system. And then he retains ownership.

Katelyn Kesheimer:

Which means ownership of the ownership the power-

Dennis Brothers:

Of the power it produces as well as the panels themselves. So it's a way to get into the solar game without going through the large upfront cash expense or the large loan to get the system. You probably... In the long run, because these are 25, 30 years systems that continue to produce. If you go into a lease that lasts 10 or 12 years,

15 years, you've paid for it at no additional costs over what you would normally be paying for electricity. And then after that period, you've got the benefit of this free electricity for the remaining life of the systems. That's one way that leasing can be used. But these are typically smaller systems. Smaller systems that are just producing a enough power to supply some enterprise on the farm.

Katelyn Kesheimer:

So this 25, 30 year lease I'm curious, is that the amount they use? Because it's how long the equipment will last for. Is it built to last longer? And that's just how much time they need to make enough money and power back. Where does that number come from?

Dennis Brothers:

Great question. Two purposes, one, that is the generally accepted warranty life of a solar system or the panels that produce the power. They are all warranted now for 25 years, some 30. So a solar developer knows he can count on those panels to produce the required amount of electricity to pay for his project over that 25 year period. Plus it takes that long typically to pay for the project. Part of their business model is, it takes a long term to make a return. But that is tied to the long life of the panels as well. They don't quit producing power after 25 years, but they're no longer warranted. So the question is, they've lost some production after that time. So is it economically feasible to replace them or just quit using them.

Katelyn Kesheimer:

So definitely something for potential investors or growers to look into, costs of repair or replace after that amount of time.

Adam Rabinowitz:

But during the leasing process, that's not something that the grower's going to have to worry about.

Dennis Brothers:

No.

Adam Rabinowitz:

But afterwards, as you mentioned earlier, the decommissioning of the system is important to have clearly stated, because a producer does not want to be left with all this hardware sitting on their land.

Dennis Brothers:

Exactly.

Adam Rabinowitz:

And having to figure out what to do next.

Dennis Brothers:

It's going to be expensive to get rid of it. If he wants to start cropping land again, he's got to get rid of that. So that can be a expensive proposition.

Katelyn Kesheimer:

Well, Dennis, this was super interesting. I knew nothing about solar leasing, solar farms coming into this. And I feel like we barely just touched the surface of it. So any parting words you want to leave with our listeners before we go? Or we could do our fun fact that we skipped in the very beginning, because Adam was so excited to jump in. So we'll ask you now, Dennis, what fun fact do you want to share with our listeners?

Dennis Brothers:

Well, I'm an old Auburn alumni, as is my wife, as is my two children. So I bleed orange and blue from the start to the finish. I guess that's a fun fact.

Katelyn Kesheimer:

That is, fantastic. I think this is where we say War Eagle, right?

Adam Rabinowitz:

That's right. [crosstalk 00:17:17]

Dennis Brothers:

That's right.

Adam Rabinowitz:

I mean, Katelyn, you and I are new to the Auburn family.

Katelyn Kesheimer:

We are transplants. My husband works here, so I guess as a family, we bleed orange and blue.

Adam Rabinowitz:

My wife is now a PhD student here.

Katelyn Kesheimer:

Fantastic. Welcome to her.

Dennis Brothers:

So once Auburn gets in your blood, it's hard to get it out.

Katelyn Kesheimer:

Yeah, I think they've trapped me here. So everyone's stuck with me for a little bit. Well Dennis, thanks for joining us today. This was super fun and I hope you enjoyed it. And as always, if y'all have any questions, feel free to reach out to us and we'll catch you next time on an episode of the Alabama Crops Report podcast.

Announcer:

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