

Inclusive Financing for Distributed Energy Solutions

—Transcript of a webinar offered by the Clean Energy Solutions Center on 26 May 2016—
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Webinar Panelists

Curtis Wynn	Roanoke Electric
Mark Cayce	Ouachita Electric
Holmes Hummel	Clean Energy Works

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Stephanie Bechler Hello, everyone, I am Stephanie Bechler with the National Renewable Energy Laboratory and welcome to today's webinar, which is hosted by the Clean Energy Solutions Center in partnership with the Clean Energy Works. Today's webinar is focused on inclusive financing for distributed energy solutions.

One important note of mention before we begin our presentation is that the Clean Energy Solutions Center does not endorse or recommend specific products or services. Information provided in this webinar is featured in the Solutions Center's resource library as one of many best practices resources reviewed and selected by technical experts.

Before we begin, I would like to go over some of the webinar's features. For audio, you have two options. You may either listen through your computer or over the telephone. If you choose to listen through the computer, please select the mic and speakers option in the audio pane. If you choose to dial in by phone, please select the telephone option and a box on the right side will display the number and audio PIN you should use to dial in. And a reminder to the panelists on the line to please mute your devices when you are not presenting. If anyone is having technical difficulties with the webinar, you can go to the GoToWebinar help desk at (888) 259-3826 for assistance.

If you would like to ask a question during the webinar and we really encourage that you do, we ask you to use the questions pane where you can type that in. If you are having difficulty viewing the materials through the webinar portal, you will find PDF copies of the presentation at

cleanenergysolutions.org/training and an audio recording of the presentation will be posted to the Solutions Center training page within a few weeks and will be added to the [Solutions Center YouTube channel](#) where you can find other informative webinars, as well as video interviews with thought leaders on clean energy policy topics.

Today's webinar agenda is centered around a presentation from our guest panelists, Dr. Homes Hummel, Curtis Wynn, and Mark Cayce. These panelists have been kind enough to join us to share their experience of two utilities that are already opt in _____ on bill investment programs for building energy upgrades, serving customers without regard to renter status, credit history, or income. Before our speakers begin their presentations, I will provide a short informative overview of the Clean Energy Solutions Center initiative and following the presentation, we will have a Q&A session where the panelists will address questions submitted by the audience. Then we will have a brief survey.

This next slide provides a bit of background in terms of how the Solutions Center came to be. The center is one of 13 initiatives of the Clean Energy Ministerial that was launched in April 2011 and is primarily led by Australia, the United States, and other CEM partners. Outcomes of this initiative include support of developing countries and emerging economies through enhancement of resources on policies relating to energy access, no cost expert policy assistance, and peer-to-peer learning and training tools such as the webinar, you are attending today.

The Solutions Center has four primary goals. It serves as a clearinghouse of clean energy policy resources. It also serves share policy best practices, data, and analysis tools specific to clean energy policies and programs. The Solutions Center delivers dynamic services that enable expert assistance, learning, and peer to peer sharing of experiences. Finally, the Center fosters dialogue on emerging policy issues and innovation around the globe. Our primary audience is energy policy makers and analysts from governments and technical organizations in all countries, but we also strive to engage with the private sector, NGO's and civil society.

A marquee feature of the Solutions Center that we provide is a no cost expert policy assistance known as Ask an Expert. The Ask an Expert program has established a broad team of over 30 experts from around the globe who are available to provide remote policy advice and analysis to all countries at no cost. For example, in the area of finance and sustainable energy planning, we are very pleased to have Wilson Rickerson, the CEO of _____ Group serving as one of our experts. If you have a need for policy assistance in finance and sustainable energy planning or any other clean energy sector, we encourage you to use this valuable service. Again, the assistance is provided free of charge. If you have a question for our experts, please submit it through a simple online form at cleanenergysolutions.org/expert. We also encourage you to spread the word about the service to those in your networks and organizations.

Now, I would like to provide brief introductions for today's panelists. We have joining us, we will have Mr. Curtis Wynn, the president and CEO of Roanoke Electric, a leading electric utility in tariffed on-bill financing through its upgrade to save investment program. Mr. Wynn is an elected officer on the board of a national association of all electric cooperatives, nonprofit utilities in the United States that are owned by the customers they serve.

Also joining us, is Mr. Mark Cayce. Mr. Cayce has over 39 years of experience in the electric utility industry, including 15 years with Texas Utilities and more than ten years with Jackson Electric in South Texas. Since 2002, he has served as the General Manager and CEO of Ouachita Electric Cooperative headed in Camden, Arkansas, USA.

Lastly, we have Dr. Holmes Hummel, principal and founder of Clean Energy Works, which accelerates capital deployment for distributed energy solutions in the private sector. Clean Energy Works is known for building a bridge across the clean energy divide to allow investment in market segments that are hard to reach due to common disqualifying criteria for financing. Dr. Hummel has served as a scenario policy advisor for the U.S. Department of Energy's Policy Office from 2009 to 2013.

With those introductions, I would like to welcome Holmes, Mark, and Curtis to the webinar.

Holmes Hummel Good morning, Stephanie. This is Holmes Hummel. I am going to be first. Sure, that everyone can see my screen properly so that the visual aids with our remarks will be well synced.

Stephanie Bechler It looks great, Holmes, and the audio sounds great, too.

Holmes Hummel Terrific. Good morning and good afternoon. My name is Holmes Hummel and I am pleased that the Clean Energy Solutions Center has invited the three of us to share experience with inclusive financing for distributed energy solutions today. This is actually a remarkable gathering, more than 170 registered participants for the webinar hailing from 40 different countries. I think that we struck a tone and I hope that we will be able to offer content that is responsive to the interests of so many people from so far and wide. This webinar is presented by the Clean Energy Solutions Center, as well as the Clean Energy Finance Solutions Center, which is a part of the project that the Clean Energy Ministerial has supported over the last several years to support decision makers in both policy and now in finance.

The Clean Energy Finance Solutions Center helps governments mobilize clean energy investment. It was announced at COP21 in Paris in December. Being one of the first webinars offered through the new Clean Energy Finance Solutions Center is also a distinction we are happy to receive. We hope that we will serve everyone's interests well.

Thanks to Stephanie, you have already heard short introductions with the biographical background of the three of us who are contributing the insights

of our experience today. Without any further ado, I would like to enter our conversation by giving you the overview so you know where we are going from the start.

We are going to first discuss why inclusive financing is necessary. Of course, I might be taking for granted the fact that many of you are already aware of the barriers, which is why you have decided to join us. Nonetheless, I think it is important that we look at them at least briefly before turning to tariffed on-bill financing as a responsive solution. We will hear from the two CEO's about the results they are receiving in the field using tariffed on-bill financing. We will close with a discussion about ways to get started for those of you interested in expanding places where it's available.

I want to start first with a call to action that we have heard from both heads of state and leading policy and analysts in our field for quite some time, particularly with regard to climate stabilization, in order to achieve a two degree stabilization pathway. The International Energy Agency has been clear and consistent. We need a very assertive investment program in clean energy. If you look here at the International Energy Agency's analysis of the two-degree scenario, nearly half of all of the greenhouse gas mitigation that it expects in a least cost scenario between now and 2040 would come from energy efficiency.

In order to achieve the kind of scenario that you just saw, the same International Energy Agency has also analyzed the cost of technology deployment during that time period, concluding that we would need an additional investment above business as usual of \$1 trillion every year through 2050 starting in say 2030. But what I want to draw your attention to here is what needs to be done far sooner. Look at the component in the period of this decade, 2010 to 2020. The component is dominated by additional and incremental investment in building improvements, which is one of the things that we can address with inclusive financing for distributed solutions, the discussion today.

When I think about scale, this picture inspires me. When you think about what the world looked like from space even 150 years ago, compared to today, I start to ask myself what do we need to do that's on this scale in order to achieve 100 per cent clean energy as soon as possible, language we have seen in the COP21 agreement. Well, for all of those who are connected to the grid today, the grid that you can literally see from space, utilities that run that grid have achieved near universal access by recovering investments that they made to deliver services through an agreement with customers that is called a tariff. Tariff is jargon in the energy sector, but it's important specifically for financing.

What's important, I think for the distributed energy portion of the energy sector is to see how the tariff has helped utilities deliver services far and wide. Whereas those that are entering the market with new solutions that do not enjoy tariff authority have needed to use alternatives. So developers of energy efficiency resources or distributed solar or onsite storage or any of our smart grid applications, not necessarily are they able to access tariff authority for

making investments and recovering costs. For logical reasons then, these solution providers have developed alternatives that include making direct loans to customers or actually offering customers leases if they handle the financing themselves. These work arounds have been effective in unlocking potential and early adopter markets, but they show signs of limits and constraints as they move to scale. Some of these barriers are so persistent that they are not likely to move with more effort on the sales team.

Here, the structural barriers really come into play. I want to give you one example. It's in the area of property ownership. In the United States, half of all homeowners, less than median income, which is the midpoint of our distribution, do not own land. So they are categorically disqualified from any finance instrumenting that would require them to own land. For the most part, that means that they won't be eligible for the kinds of leases and liens and loans that are currently used to market distributed energy solutions. Overall, it's about a third of American households that wouldn't be able to play in the clean energy economy on the terms of financing that would require them to be landowners. Outside of the United States, that fraction could be even larger.

That's one reason I have been very motivated to work with leading utility executives that want to be innovative about evolving their business model and answering the calls of our time.

Pay As You Save is a solution that offers all utility customers the option to access cost effective energy upgrades using a proven investment and cost recovery model that benefits both the customer and the utility. While I know you can all read, I have read it out loud because that is the core sentence of what we are about to look at in more detail.

In the Pay As You Save model, the utility draws capital into its investment portfolio from the same sources that it has been using for decades. The utility makes an investment in upgrades onsite through a competitive group of solution providers. Those investments are associated with the metered site so that the utility can recover its cost on the bill for that site with a charge that is less than the estimated savings. Customers at that site, both current and possibly future continue to pay those bills, but those bills are lower because of the improvements that the utility has invested in that reduce the overall consumption at the site and provide a net savings stream that the customer can use to cover the charge.

Some people have expressed anxiety that this kind of model might extend the utility's monopoly. Not so. What we have seen is that utility is actually stimulated and attracted more participates and solution providers into the market to compete for good jobs and good work, delivering solutions that customers want.

So the Pay As You Save system allows us to move forward with distributed energy solutions starting with energy efficiency building upgrades without involving consumers and loans, liens, debts, or leases. We are able to reach renters in low-income households. As a result, we have higher uptake rates

and also deeper energy and carbon savings. We will be able to talk more about why those things are true.

Right now, what I want to show you is what it looks like when we compare the debt-based options and the tariff based options on a basic residential energy upgrade program. First of all, once we bring in renters and low income, we have nearly doubled the addressable market. And instead of being denied nine times out of ten by consumers who don't want to take on additional debt or face barriers to even obtaining it because they don't qualify, we see instead that Pay As You Save offers are accepted more than half the time. The deal's terms are so favorable and the risk to the customer so low, that they are willing to do more and the deal size is larger. Overall, the utility's profile of investment costs recovery is actually superior to unsecured consumer debt and the charge off rates that have been reported by utilities using the Pay As You Save system is less than one tenth of one per cent.

What's important for those of us who are interested in scaling investment, is that the three factors on the left actually are multiplying factor. Double the addressable market with five times the rate of acceptance and double the deal size gets you an investment acceleration pack that literally moves from one to an order of magnitude or ten times higher in no time at all.

I think it might seem like it's too good to be true so I wanted to tell you what the doorstep conversation sounds like for a Pay As You Save offer. The customer hears that energy saving upgrades can be installed in your home or building with nothing paid up front by the consumer. The utility pays for the installed energy solution. To recover its costs, the utility puts a fixed charge on the electric bill that is significantly less than the estimated savings from these upgrades. The customer has no loan, no lien, no debt associated with the transaction, just lower utility bills and a more comfortable home. When the utility is done recovering its costs, the charge ends. And if the customer leaves the location and moves away sooner than cost recovery is complete, that's fine. They don't owe anything. And if the upgrade fails and is not repaired, the obligation to pay also ends if they maintained the upgrades diligently. This eliminates so many different facets of risk that motivate consumers to defer or decline energy efficiency upgrades that we see much higher uptake rates.

Here is an example transaction so that you can get a sense of the math behind the deal, now that I have given you the value proposition. For a single story home, upgraded with insulation and air sealing, and such, I am going to give you one transaction with some round numbers. This is sourced from a program that is in Eastern Kentucky. The investment in this case is a \$10,000.00 package of upgrades with a cost recovery period of 15 years and a cost of capital available to that utility program of three per cent. The savings to the customer are about \$100.00 a month. The cost recovery charge was \$70.00. The net savings to the customer was \$30.00 a month, or 30 per cent of the savings. The energy savings annually crested about 8,000 kWh hours. Now that you see the snapshot of a single transaction at a single site, I want to

show you what it can look like at a portfolio level by moving from Kentucky to Kansas.

In Kansas, we have one of the largest and longest running Pay As You Save investment programs. For the last several years, Midwest Energy with the How Smart program there has completed nearly 2,500 energy efficiency plans. In more than half of all that they have addressed have been accepted by the customers they are working with. In total, the utility has invested more than \$8 million. You see the average project size there. The utility is able to recovery virtually all of those costs. As I mentioned before, their cost recovery rate is above 99.9 per cent. And their reported savings here below, are icing on the cake after making an investment in recovering their costs.

I want to shift now to the executives that have joined us, both Curtis Wynn and Mark Cayce, each of whom have distinguished themselves in the power sector by introducing tariffed on-bill financing to their customer. In only the last year, already posting remarkable results, I think that Curtis Wynn has joined us. I would like to pass the conversation to him next while I maintain control of the slides. Curtis, are you with us?

Curtis Wynn

Yes, yes, I am, Dr. Hummel. Thanks for the opportunity to join you this morning. First of all, let me introduce the name of our program, which really falls in line with all of the reference points that Dr. Hummel has given you to this point. Ours is called Upgrade to Save. It is a tariffed one-bill investment program based on the Pay As You Save model that we have already talked about. So if you go to the next slide, I will just go ahead and get right into some of the numbers that we have experienced to date.

As it relates to how we are situated within the country, the electrical cooperatives in America, in the United States are in 47 different states. Of course, I am in North Carolina. The name of my electrical cooperative is Roanoke Electric. We are one of only a handful of cooperatives that have actually gotten involved with this program, but as you can see by the map, that cooperatives serve, cover about three fourths of the continental U.S. land mass. We have 42 million people who depend on electric cooperatives and cooperatives both transmission and transmission and generation cooperatives have invested over \$40 billion in electrical system infrastructure. If you look at where we are, we are in the Northeastern part of North Carolina. We serve five counties within this region. All of them in the region are plagued with persistent poverty. We have about 14,700 meters, most of them are residential members. Five per cent are commercial and industrial. We have a pretty broad service area, as you can see by the numbers, 1,500 square miles of services area. We have 2,210 miles of electrical line. Budgets of about \$39 million from an operating revenue standpoint and assets just below \$85 million. We run this organization with 52 employees.

So one of the characteristics of our service territory is that we have a number of customers that we call members of the electrical cooperative that spend more than \$2,400 annually on electricity. That is a big burden. If you compare our numbers against the maximum benchmark and if you looked at what we have in terms of members or customers whose electric bill are above

\$201 per month, you can see that's a pretty high number. Fifty-three per cent of the responses that we asked said they have bills of over \$201 per month. They don't rate us very highly. So what we are always thinking is the customer level of satisfaction that we get from our member owners. For those members who have those high bills, you can appreciate the fact that they don't give us very high marks in relation to their satisfaction with the electric cooperative. The damaging part of this is that most of the members, if you were to talk to them, would relate that to the high bills being related to the rates that we charge them, but that's actually not the case. It's wasted energy that is causing those bills to be high. Our rates are pretty much average, right in line with most of the neighbor utilities in this region. So that's not a good thing for Roanoke Electric to have that perception out in the community. We work very hard to address that.

We got to the next slide. What exactly do we do as we approach bringing our member's electric bills down? The typical energy efficiency upgrades that we do involve the six areas that you see on the screen. That is in insulation, providing insulation in the attics, sealing the ductwork that is connected to their HVAC systems, making sure they don't leak, the cooling and heating that they are producing, sealing around the leaks around the doors and windows. The biggest cost element is installing highly efficient heat pumps in the homes. That is something that we do quite often. We also wrap their water heater and provide them with enough LED, light emitting diode lights to go throughout their home, which is much more energy efficient than the typical lights that they may have in their home already.

As we approached this, we spent way too much, much too much time trying to offer loans to our members. Going back to the earlier slide, we have the demographics in our region are pretty bad in terms of the median household incomes of people here. So offering them a loan to finance the upgrades once we identified issues they need to address inside of their homes was not a viable option. It created major barriers to participating. As a matter of fact, we had very little to no participation in the loan programs that we offered. Many of our members or customers are renters that do not qualify for a loan. They have poor credit history. Others just simply declined to take on additional debt. Out of 1,000 customers that we contacted, only 150 of them responded with only fewer than ten of these ultimately going to taking us up on the financing option that would allow them to place the repayment of that loan on their utility bill. The typical on bill financing that sought a loan by the member to pay for the solutions.

So when we saw a solution that would be more inclusive and generate more value for our participants, we began to get better results. That's where this program came in. So what the Upgrade to Save program has been able to for us really allow any member who wants to participate in lowering their utility bill to an Upgrade to Save model the ability to do that. The process typically is that they contact us wanting assistance for their high bills. We would turn that over to a program operator, which happens in our case to be a subsidiary company that is owned by the electric cooperative. That program operator works with the local energy assessors to identify the best efficiency practices

and upgrades for those investments. The utility in our case, the electric cooperative offers to invest in the upgrades. We get the contractors to install the upgrades at no upfront cost to the member, providing quality assurance, oversight through our program operator. Then we, the utility, recover our costs for the upgrades with a fixed charge on the bill that is less than the estimated savings. That was actually a requirement of our program. We would not do an upgrade unless there was at least a 25 per cent savings out the gate for the member.

What have we found? To date, we have done over 120 upgrades to houses and mostly homes of our members. I want to share with you just some results of the sampling of the last 75 of those 120 homes that we have been able to upgrade. The average investment that we have made and these have been around \$6,900.00, which is less than we had anticipated. We initially thought that that would be about \$7,500.00. So that has come out to be much better than we thought initially. Because of the state where I live, the State of North Carolina, we have a renewable energy portfolio standard that we participate in, we have to purchase energy efficiency credits to live up to that mandate by the state. We had decided that because we are avoiding that investment, we would invest up to \$1,000.00 per household from the energy efficiency credits that we were avoiding and not having to pay. But on average, all we have had to do is less than half of that, about \$482.00. Again, this has exceeded our expectations.

The savings that we have been able to realize, again, has averaged about \$120.00 per month and that is pretty phenomenal. We are talking about over \$14,000.00 per year in savings for the homes that we have upgraded so far. The other good news here is that the charge on the utility bill, while I mentioned earlier, we thought that we would see about a 75 per cent charge on the bill has been almost half, just more than half of the savings. So our net savings for the members have been about \$58.00 per month. As I said earlier, we were expecting that to be about a 25 per cent. As you can see, that is roughly, just south of, just below 50 per cent. So we have exceeded pretty much all of our expectations going into this program from a financial standpoint and from a benefit standpoint. We have exceeded those, real good results from the program.

I do also just want to mention that this program does have a business advantage. As a utility, we are becoming more energy efficient. Because of that, we are seeing savings ourselves, just as our household owners that are members of our service are seeing savings. We are seeing savings also. The big thing for us is that we have a lower demand charge that we would typically pay for the supply of power that we purchase. We are billed on an energy charge and a demand charge. That demand charge has been lowered as a result of the work that we are doing through these energy efficiency measures. So rather than expensive inefficient heat pumps being turned on when it's very cold or inefficient systems running when it's very hot during the summer, each one of those that we replace with an energy efficient heat pump, we are lowering that demand charge. We also have some assurance that we keep our risk as low as possible. Rather than having a loan and having

a tariff on the bill, it is giving us pretty good assurance that we will recover our costs by having that tariff at the location where the measures are being done. As the program dictates through the PAYS program, the cost recovery is tied to a tariff at the location where the upgrade is done, not the person who may have requested that upgrade. So as long as the meter is turning, is the way I like to look at it, we will be recovering those investments that we made. It makes it very low risk.

There are a lot of ways to protect the environment, but the one way that I think is probably best and is proving to be the most cost effective is through energy efficiency. We are using energy efficiency as our least cost clean energy source, averaging about two cents per kWh it costs to do that. So we are very happy with those results. Also, the loss of revenue that we realized which we went into this program very clear that that was going to be the result. The loss of revenue from wasted energy is small compared to the gain in value. There are several ways that we see the value. Member satisfaction is something that we value quite a bit. We are striving to get our member satisfaction scores as high as possible. This is a big way to do that. The member is saving money and helping to stretch their budgets even further to do things that are needed for their families. That's a big benefit. The utility, the cooperative, Roanoke Electric is benefitting, lowering our wholesale power costs. So that's value. On every level, that is value. We are here as electric cooperatives to provide value for our members and that's exactly what the program is allowing us to do.

The other big piece of this is that of those we have established through our program with the USDA rural utility service is a \$6 million line of credit that is going to be expended over the next four years. That money is going to stay in this community, being paid to local contractors. , which is another benefit to our region. We have a good group of quality contractors who are gaining job opportunities and helping the local economy, which is another big plus for the program.

Holmes Hummel

First, I want to thank you for contributing the insights of your experience at Roanoke and ask Mark Cayce if he would join us with the snapshot of results from his program during a similar time period, but actually even more accelerated.

Mark Cayce

Thank you, Curtis, and thank you, Dr. Holmes. I am glad to be with you today. I appreciate everyone else joining this program today. I hope it will be of benefit to you. I am Mark Cayce. I have been in the utility business for almost 40 years with three different utilities in Texas and Arkansas. Currently, I am head of Ouachita Electric cooperative. We are located in South Arkansas, not far from the Mississippi River, and considered part of the Mississippi River delta. This is a part of the United States that has experienced persistent poverty for decades. Like many parts of the country that are served by electric cooperatives, I am excited about inclusive financing for the distributed clean energy solutions because if we can make it work here, an economically distressed communities, it can help many more people in more places across the country.

Now, our first financing program was called HELP. We developed this to be able to help our members better cope with rising utility costs. We made loans to customers so they could pay for upgrades. Then we would collect the debt payments on the bill. Our program was successful in many aspects. Customers who qualified did like. We were seeing success. However, it's been about a year ago, we decided to switch from an on bill loan program to a tariffed on bill program for two primary reasons. We wanted to achieve greater savings for our members. Many of our members were not eligible for loans because they rented their homes. Some of them, as Curtis mentioned, didn't like the idea of taking on new debt. That left out a large part of our population. Also, we wanted to include heating and air conditioning equipment, which required a bigger investment on our part. Because of the success we had had with our loan program, our board voted to move ahead using the Pay As You Save program so that we could make larger investments in our members' homes and achieve even greater savings. In fact, our goal is to achieve a 40 to 50 per cent savings on each of members' bills. This is a very large number, but it's a significant number because when you live in an area where people have a per capita income of about \$14,000.00 per person, choosing to spend that money on utility bills versus medication or other things necessary to survive in our economy is a tough decision. We visit with those people every day who are struggling just to pay their electric bills. It's a really tough situation when you are counting your pennies trying to make that decision.

Well, we worked with Clean Energy Works, the creators of PAYS, to file the first tariff of this type in our state. It was only two pages long. The state utility commission unanimously approved our tariff and the entire process went much faster than normal tariff proceedings do. The primary driver of this was the consumer aspect of it and then how friendly it was to consumers.

This diagram will remind you how the PAYS system works. You can see how this is different from an on bill-financing program, based on making loans like our original HELP program. Our experience was a true test of the PAYS system because we literally flipped the switch from one type of financing to another but holding everything else the same. We have the same customers, the same economy, the same program operator, and the same contractors. All we did was change from offering customers a debt product to making a direct investment with cost recovery that is consistent with our business model. In fact, we are seeing that investments we make with the tariff are actually more secure than investments that are made for providing energy to some of our consumers, but some of our consumers can't pay. They move and it becomes uncollectable. With the tariff system, the investment is made in the location as long as there is energy provided to the location our investment is recovered.

Well, this has created an immediate surge in the number of homes that we are working with. Just in the first three months, we have doubled the number of customers seeking assessments from 73 to over 162. More than a third of those are multi-family. We are working on our first apartment project that is in process right now a 64-unit project. Many of these customers are paying

over \$300.00 a month for utility bills. We expect to lower those bills by more than 50 per cent.

Everyone that we have offered this program to so far, we have had 100 per cent opt in for multi-family and rental units and over 80 per cent opt in on single-family units. Not having to come up with the money out of pocket to make personal investments, many people just can't afford the technology that is out there today that would dramatically lower their bills. But being able to put this equipment in place and working for them takes that money, allows them to be more comfortable in their home, have more money to spend. That money gets spent locally. So we have doubled the scale of capital improvements from an average of 3,000 to above 6,000 to get deeper energy savings. We have doubled our customers and we have doubled the project size. Just in the first three months of operating, we are looking at investing over \$1 million in the first three months. We expect that number to double again before the end of the year. The market response has been immediate and strong. This data compares to our best three months using a loan program with the first three months of the HELP, PAYS program.

In addition, because we had lots of existing heating and air contractors, we are putting more local people to work. So any money that we invest in the program gets invested locally. The customers save money. That money gets reinvested in our local economies. It provides jobs all the way around. The PAYS program is just working. As Curtis mentioned, in addition to lowering our member's bills, we also pay a demand charge. We also pay an energy charge. If we can lower our demand, it lowers our overall cost of energy. It's like we are seeing that it more than covers our loss to our sales base we are getting a significant reduction in our demand. Those costs are going down. Energy efficiency that saves demand is building new power plants and providing generation so that we can continue to provide service to our customers and hopefully to new customers that are going to move into our area.

One of the unique features of our program is we have smart meters deployed on all of our residential accounts. We are able to go back and verify the savings by looking at the meter data prior and post improvement work so that we can get actual data that verifies the savings. We have been using a program operator who coordinates contractors, makes our assessments, does the energy audits. We go out and inspect the work of contractors. We verify the work. We act as a representative for our members to make sure that they are getting the proper work done. We actually do this twice. We go out prior to the work being done and verify with a blower door test. We go back and inspect all of the items that were to be completed and verify again with another blower door test to ensure that the house has been sealed up, insulation has been added, and that the improvements have been made. This has given us a really large positive response from our members who are excited about lowering their bills. They get a better understanding of energy efficiency and what it means not just to their bill, but to all of our members and how that fits into the bigger image picture around the country.

So we have had enough experience with PAYS that we are also looking at the PAYS system to use it to open new opportunities for additional distributed generation as well. I would be glad to take any questions about our experience.

Holmes Hummel

Mark, thank you so very much, Mark Cayce and Curtis Wynn, both with decades of experience in the power sector, sharing their views on the value proposition of making investments in cost effective distributed clean energy resources starting with energy efficiency. Mark, I am interested in your long-term vision for expanding to a broader solution set.

I would like to move us on towards the Q&A, but not without making a quick pit stop through the next steps. For those of you who have been with us throughout the last 45 minutes, and are thinking about the value of bringing a tariffed on-bill solution to the area where you know best.

Here on the screen, you will see a series of steps that we find are most productive in the due diligence phase for anyone who is just learning about tariffed on-bill financing. We will not go through each one of these six things because we would like to devote more time to Q&A. I do want to take a moment to look at just two aspects. One is the decision tool for utility managers, which is available to everyone now, and also a quick look at sourcing capacity since many people are interested. Where does a company like Ouachita Electric get millions of dollars that it can invest. I want to make sure that we have not left that alone.

Curtis, I would like to know if you would like to address this line since the resources now on the screen is hosted at your company's website.

Curtis Wynn

Yes, absolutely, Dr. Hummel. We have fielded quite a few questions since implementing our program several months ago. I am more than happy to do that. I think it really deserves for anyone considering this, a more detailed and thorough look at all of the aspects of what would be involved. We worked with a number of people to put this decision tool together and have it on our website for you to go out and look at it. It thoroughly lets you walk through the steps that are necessary as you are considering this as a CEO or preparing a presentation for your board to answer some of the tough questions you may get from them. It's there, pretty comprehensive. It answers more questions than we could ever answer through a phone conversation. We are happy to speak with anyone about their interest in the program; this decision tool really gets you down in the weeds in terms of everything you need to know before you get started.

Holmes Hummel

Let's turn our attention to the source of capital, which was the second of the two topics. I wanted to be sure that we addressed. You actually did mention it in your earlier remarks, Mr. Wynn. I want you to address your views on the distinction between where you are sourcing your capital and how you are deploying it.

Curtis Wynn

Yeah, so with the other, going back to prior to us getting into the Pay As You Save system and that model and using the resources that are available through

the Energy Efficiency Conservation Loan Program that we often refer to as EECLP that is provided by the U.S. Department of Agriculture for utility service, we are able to tap into dollars that we typically use as a resource already to bill plan. The other options that we had before, we could go through a bank. We have credit unions that were available to provide the financing. Normally, typically, it is a higher rate. The investments that we used are coming through the USDA, which billions of dollars are available. The cooperative is making that loan request, as we have in the past for land upgrades and maintenance of our utility system because the upgrades that we are making on the other side of the meter, we are considering those to be upgrades to our overall system. We are treating it that way and so is the USDA. The funds that come through the cooperative, \$6 million that we decided to use as a line of credit are going directly to our facilities and homes where we are making these upgrades to Upgrade to Save program, again, averaging nearly \$7,000.00 per upgrade for each participant that comes to us wanting to get those upgrades to their facility. Again, the benefit of course, where this is being used, are numerous as I mentioned in a previous slide. This is the progression of how it gets to the members.

Holmes Hummel

Good, I want to close here by inviting everyone who is with us to be active and taking advantage of the question box and to also then allow us to make a request of each of you. First of all, if the material including the insights of accumulated experience from Kansas and Kentucky or fresh experience from the two CEO's who have been with us today, are important to the work and opportunity you see in the field, please do share this webinar and slide deck with more stakeholders with whom you work. If you are interested in seeking the kind of expert assistance that Roanoke Electric and Ouachita have already benefitted from, the Clean Energy Solutions Center Expert Assistance function that was introduced at the top of the call is an excellent way to register that interest. You are also welcome to use an old-fashioned email. If we don't address questions that have surfaced here in the last five minutes, we will do our best to be responsive to every line of equity that we receive. That is all we have prepared for our time now. I would like to know if there is anything we can do to support the work of the folks who have joined us.

Stephanie Bechler

Thank you so much for those presentations. They were very excellent. We have received several comments from the attendees, really thanking all of you for the presentations. I wanted to make sure to pass that along before we get into the Q&A. We have had a few questions come in. A couple of people have been asking can the tariff on-bill financing apply to solar power. Some were even directed more at both Curtis and Mark on the phone if their companies would consider expanding this program to finance distributed solar power.

Curtis Wynn

Mark, you want to go first?

Mark Cayce

Yeah, I would be glad to. We are looking at studying that right now. We have partnered with a company called TPI, Today's Power, who is going to be providing us with a home solar kit that would be installed in personal locations. We are studying the financial impacts of that, how we can make

that available. The main that we have found and we put a 96 kw solar facility in our office. One of the things we are seeing, which is unique from a utility perspective is that we are seeing demand reductions, especially at peak times through solar. We are trying to study to see if we can apply that to residential as well. We have not done it yet at this time. We are looking by the end of the summer to have something that might make that possible. We are also in the process of constructing a 1-megawatt community solar project that would be available to all of our members.

Curtis Wynn My comments are pretty much in line with Mark's. In regards to that question, we do have a community solar, 100 kW community solar projects that's been offered to our members. Also looked at the viability of including the Upgrade to Save model for the solar and financing of those panels. We haven't made that offer, but we are as it relates to more interest and possibly the expansion of interest in solar is something that we would consider. We have not done anything to date.

Stephanie Bechler Thank you both so much. The next question is focusing on the capital that you mentioned in the last couple slides. Which program did the USDA provide the capital that were speaking about?

Mark Cayce The actual EECLP program has been offered, I guess, over a year now. It's on the Energy Efficiency Conservation Loan Program heading, but it's readily available through the USDA. We are excited and anxious to get that money distributed to anyone who is interested.

Stephanie Bechler Thank you. One of our attendees would like to know are there any examples of congregational facilities taking advantage of these pay programs?

Mark Cayce Stephanie, could you clarify? You said congregational?

Stephanie Bechler I believe it is a church facilities, so not quite a business, but smaller churches and such. Have they taken advantage of these programs and would there be an opportunity there?

Mark Cayce The opportunity is definitely there. We set aside about 30 per cent of our line of credit for commercial and small business interests. A church would definitely qualify. We would certainly do that. If I am not mistaken, I think we have already had one inquiry. I am not sure if we have actually done it yet, but I think we have had that come through. So short answer is yes they would qualify and be eligible to participate in our program.

Curtis Wynn I would like to say also, Stephanie, that we actually haven't done any churches yet. We have done several schools. We have done a lot of our municipal county buildings to help them reduce their energy savings and it is working well for those institutions.

Stephanie Bechler Very good. Are there any for profit utilities using—hold on, sorry. I am reading it wrong. Would PAYS be suitable for off grid DER applications?

- Holmes Hummel** Stephanie, this is Holmes. When you say DER, I think you mean distributed energy resources like off grid solar or places that would be interested in solutions because they are beyond the grid. Is that right?
- Stephanie Bechler** Yes.
- Holmes Hummel** I think that is a really exciting line of inquiry. The tariff that we are talking about this morning, afternoon, for some of you who are in other time zones, is specific to utility service that is grid connected because the terms of the tariff are connected to the terms of service connected to the utility customer. When you think about off grid customers, they can still have a relationship to a power provider using an off grid system, as long as there is a remote disconnect capability that allows the tariff terms to apply. As I said earlier, there is nobody that I know that is using the Pay As You Save tariff for that purpose yet. There are already exciting business models for off grid electrification _____ of disconnect for financing. I think it's only a matter of time before these areas of activity converge.
- Stephanie Bechler** Great and along those lines, we have people asking if along the off grid lines, if you could see these models working in developing countries.
- Holmes Hummel** I think it's one of the most exciting reasons to be partnering with the Clean Energy Financing Solutions Center because as it was CEO Mark Cayce said earlier on this call, if we are able to demonstrate solutions that can reach people who live in economically distressed areas of the United States, we know that around the world in developing countries at every socioeconomic level, there are conditions that would prevent people from qualifying from loans to financing using loans, leases, or liens. If we are able to demonstrate a tariff based solution in a context where we can provide broad visibility and transparency as to how the program works and the results that it's getting, we hope to inspire more partners in more places to bring it to their contexts and see if they are getting similar results.
- Stephanie Bechler** Excellent. Does a tariff on-bill investment program cover multiple fuels such as gas and electricity?
- Mark Cayce** Our program is fuel neutral. We are summer peaking. We are interested in reducing our summer load. So, even if we have a customer that has natural gas or propane, we might do equipment for them. We have minimum requirements for that equipment so that it is also high efficient, but the program is fuel neutral. All of the savings that are produced on the electric side are matched on the gas side as well. It does the same thing. It puts that money back into our members' control and into our communities.
- Stephanie Bechler** Excellent. Are there any for profit utilities using the tariffed on-bill financing?
- Female** That's an excellent question, Stephanie. There have been a couple of investor utilities in the United States that have used the Pay As You Save tariff for a couple of reasons related to their source of capital. Those particular programs are not as strong as the ones that we have heard about today, primarily

because they were using their conservation budgets as the source of capital. That is not going to be a best practice that we recommend. The program investment just scales too fast and it will quickly outpace the conservation budgets of _____ funded programs. This should be used as a complement rather than a supplement. I would like preview for this group, however, that there are utilities in at least three states that are very large investor run utilities that have, in the last six to ten months, asked for a tremendous amount of time and attention to help them walk the same value proposition. I am hopeful that in the next year you will see one or a few of them cross the threshold and follow the leaders like Mark Cayce and Curtis Wynn on the phone to be the next utility executives offering tariff terms for all cost effective distributed energy resources to their customers.

Stephanie Bechler Thank you so much. We are down to the last couple of questions here, so if there is anything else the attendees would like to know, please, now is the time to put your questions in. Our next question is PAYS appears to be trademarked. Are there license terms to using the system?

Female That's an excellent question and thank you for raising it. Pay As You Save is trademarked by Energy Efficiency Institute, Incorporated. It represents a body of work that has been developed so that groups that want to apply the Pay As You Save system can get a running start with a fully designed program. Both the utilities that are joining us today have licensed the Pay As You Save system in order to get their program up and running much faster than if they started from scratch. The use of the trademark, Pay As You Save, and PAYS, is something that Energy Efficiency Institute takes out separately. They want to make sure that every program that uses their term reflects best practices. I would be happy to make an introduction to the Energy Efficiency Institute for anyone on the call who would be interested in licensing their solution. I am sure that both Ouachita Electric and Roanoke Electric can speak to their experience.

Mark Cayce Yeah, I would just like to say it made it much easier for us to get started. We really were on a fast track, but having many of the programs set up, it just made it a much smoother process. Actually, it was more cost effective than trying to develop something privately.

Curtis Wynn I echo those remarks. It collapsed many timeframes and got ourselves in a position to perform for our member with this model already being in place and having to get it off the ground. We could not have done it as quickly without that type of support. We were very thankful to have that expertise already developed for us.

Stephanie Bechler Thank you so much. We have one last question here. I believe it may have been addressed to someone asking for clarification. Has either utility used PAYS for manufactured homes?

Curtis Wynn I will cover that. We have a number of manufactured homes. We use the program for those and are seeing good results. Yes, that was a part of the training for our contractors that they understand how to work on

manufactured homes, as they would stick built. Yes, we did quite a few of those.

Stephanie Bechler Excellent, well those are the end of the questions for now. If there is anything else that any of our listeners would like to ask, please type it into the question pane and we will be sure to send all of your questions along when the webinar is concluded. Before we get to the survey, Holmes, Curtis, or Mark, do you have any closing remarks you would like to make?

Curtis Wynn I just want—go ahead Mark. I apologize.

Mark Cayce No, I just want to say that the experience we are having has been so positive and so welcome by our members. The ability to move into real property and to multi-family, we are really getting to the people that need help most and can least afford it. The energy bills for them are a much higher per centage of their income. So we are having a much greater impact for them.

Curtis Wynn I will just add to what Mark said. This keeps us as close to our jobs as cooperative leaders to follow the cooperative press pools and to add to the value that we bring to our members. There is definitely a response to a call to us to serve our members in a way that is cost effective. We have it in our mission statement that we want to provide the lowest possible costs and to provide quality service. This does help us meet our mission. We are excited about what this is going to do for our overall system in the future and the relationship we continue to enjoy with our member owners.

Female Stephanie, I would to close my contribution to this session by thanking everyone who stayed with us the entire time and I want to thank in particular the leaders that have, as I mentioned, done so much to open doors of opportunity, step up as both visionaries and action oriented executives, and to share the results from their experience. I was just recently in the good company of leaders on Clean Energy Investment, one of the world's largest multilateral development banks and they are absolutely clear that we need solutions like this for utilities outside the United States, not just ones inside the United States. I hope that over the course of the next few weeks, we are able to use the networks through the Clean Energy Financing Solutions Center to identify people who would want to take advantage of what we discussed today and introduce it into new market contexts and with new partners. I think the electric cooperatives in the United States are a leading class on this front. They are being closely followed and watched by municipal utilities and investor utilities. In my view, a year from now if we did this call again, we would have a whole fresh set of new data. I look forward to opportunities to update this community. Thank you, Stephanie for the opportunity.

Stephanie Bechler Thank you so much to all of the panelists. This was a really excellent presentation. We had several more comments come in thanking all of you profusely, which is a wonderful thing to see. We would now like to go into our attendee survey just briefly to get some feedback. The first question we would like to ask, please select your option. The webinar content provided me with useful information and insight. Please select on the screen your choice.

Great, thank you. The second question, survey point, is the webinar's presenters were effective. Thank you. Third, overall, the webinar met my expectations. Thank you. The fourth question, do you anticipate using the information presented in this webinar directly in your work and/or organization? Thank you very much. Our final question, do you anticipate applying the information presented to develop or revise policies or programs in your country of focus? Thank you very much. On behalf of the Clean Energy Solutions Center, I would like to extend a thank you to all of our panelists and attendees for participating today. I invite our attendees to check solutions at our website. If you would like to view the slides and listen to the recording of today's representation. That is available at cleanenergysolutions.org/training. Additionally, you will find information on upcoming webinars and other training events. We are now posting the webinar recordings to the [Clean Energy Solutions Center YouTube channel](#). Please allow about one week for that audio to be posted. We also invite you to inform your colleagues and those in your networks about the Solutions Center resources and services including no cost policy support. Please everyone, have a great rest of your day. We hope to see you again on future Clean Energy Solutions Center events. This concludes our webinar.