*Hannah Debelius:* Hi, hello and welcome to the 2021 Better Buildings Summer Webinar Series. In this series we are profiling the best practices of Better Buildings Challenge and Alliance partners and other organizations, organizations working to improve energy efficiency in buildings.

My name is Hannah Debelius and I'll be moderator for today. I am a fellow in the Building Technologies Office and I have the wonderful privilege of working on the Better Buildings Program with our higher education partners.

Today we are going to be discussing Financing in Higher Education and how we'll be exploring some different options and creative solutions that you all can finance your renovations, renovations on campus and building upgrades for sustainability.

We are excited to announce today that we will be using an interactive platform called "Slido" for Q&A. So right now if you could go to either your phone or open up another browser window and go to slido.com. You are then going to enter the event code DOE. What we're going to do is that this platform is going to help us do some polls, we can get to know our audience a little bit better and also that's where we will be accepting Q&A for all of our speakers today. So again, go ahead right now and open up either a new browser or a mobile device, go to slido.com, then enter in the event code DOE.

All right and I'll also mention now that you can put in questions anytime to Slido and we'll get to those at the very end. You can also Thumbs-Up those questions that are already in there. So if you see one that you like you can hit that Like button and it will move up to the top so that we can prioritize that when we get to it.

So with that we'd like to learn a little bit more about you. So we can go ahead and launch our first poll. Wonderful. Our first question is that we know that a lot of our audience today is representing a higher education institution. So for those of you that are representing one could you please tell us what classification is your institution?

All right a lot of doctoral and master's colleges and universities or baccalaureate colleges, a couple of associate colleges. That's wonderful we have all of those institutions represented today. I'm also curious to see if we have any tribal colleges or HBCU online. Again, we're using Slido so it's not too late to go to slido.com and then put in the event code DOE, that's where we're doing this

polling. All right a couple of special focus institutions. Wonderful, thank you so much. We appreciate learning a little bit more about our audience.

So with that we're going to go to our second poll question. That is: What type of financing mechanisms have your institution completed or explored to finance building renovations or sustainability projects? If you could take a moment and think through this list here, we'd love to hear more about it. All right our first response is "none of the above," which is great, because you've come to the right place if you're looking to learn more. All right so internal financing, we know that that's one of the most common options for higher education institutions, performance contracting, green revolving fund, a couple of people doing third-party loans. Could you scroll down to see if anyone has put in a – okay and three percent for efficiency-as-a-service and a couple for green bonds. All right, excellent.

Great, well I appreciate you all giving us your feedback. So now Slido will return to collecting Q&A, so again you can put in those questions anytime.

I should have mentioned at the beginning, but this is a really special webinar today, because we're actually doing it in partnership with the National Association for College and University Business Officers. So Megan from NACUBO has joined us today. They are a wonderful Better Buildings Affiliate Partner and it's just, it's great that we get to partner on this and find that common ground where we can mass financing and sustainability.

So Megan Schneider currently serves as a Senior Director for Government Affairs at NACUBO. Prior to joining NACUBO she worked in the federal relations office of the University of Arizona, where she served as a liaison between the university and the federal government. So Megan we want to hear a little bit more about NACUBO and the partnership that brought us together today.

*Megan Schneider:* Yeah, thanks so much Hannah. We are thrilled to be partnering with the Department of Energy on this webcast. As those of you that maybe on the line that are NACUBO members know, you know that we love promoting the Better Buildings Webinar Series. It contains so much good information for our higher education members. We're thrilled to be partnering with the Department of Energy. But for those of you that you may not be, that are on the

line that may not be familiar with NACUBO, I'd love to tell you a little bit more about us.

As Hannah mentioned we are the National Association of College and University Business Officers. We want to go to the next slide, there's a little bit more on there as well. So NACUBO is a nonprofit professional organization. We represent the CFOs and chief business officers at colleges and universities. Many of you watching today may fall into that category. But we also do policy work in all of the various functions that often fall into business reporting lines, which frequently those in the sustainability space, those in the facility's management space, which is why we really value our partnership with the Department of Energy over the years.

NACUBO represents more than 1,600 nonprofit colleges and university members, both public and private, both 2-year and 4-year institutions. So we're very familiar with the fact that sustainability and energy efficiency needs vary quite a bit across the higher ed landscape.

And of course NACUBO's mission is to advance the economic vitality, business practices, and support of higher education institutions in pursuit of their missions. We're just so delighted to be partnering with the department today.

Thanks Hannah.

*Hannah Debelius:* Great, thanks so much Megan. Great to hear from you all and partner on this webinar.

We have three wonderful speakers with us today: Dr. Morgan Olsen of Arizona State University; Elaine Sadowski of the Community College of Allegheny County; and Kyle Saltsman of RE Tech Advisors, who will be sharing a little bit more on the solutions and options we have for Better Buildings.

So I'll be introducing each of our panelists as they come up and speak. And again I remind me you can go to slido.com anytime to, to submit questions and we'll save plenty of time at the end to address those.

So first I would like to introduce Dr. Morgan Olsen, who's the Executive Vice President and Treasurer and Chief Financial Officer at Arizona State University. He is ASU's Chief Business and Financial Officer and holds an appointment of Professor of

Practice in the Mary Lou Fulton College of Education. His responsibilities at ASU include overseeing treasury and financial functions, capital projects, real estate, facilities operations, human resources, police, environmental health and safety, information technology and business and auxiliary services at the university's five campuses.

So he's not busy at all, but he's made time for us here today. So with that, Morgan if you want to unmute yourself and turn on your camera we'd love to hear a little bit more about you all at ASU.

*Morgan Olsen:* Hi, Hannah. Thank you very much for the kind introduction and good morning or good afternoon to our audience depending on where you are in the country today.

If you would advance the slide.

I'm going to talk a little bit about three different types of approaches that we use to advance energy projects on our campuses. But let me say just a work or two about Arizona State University first.

We're a big place and so you know a lot of our numbers tend to be kind of big. We have about 70,000 students that we call "immersion students," that are located on one of our four physical campuses throughout the valley here in Greater Phoenix. We have a built environment of over 27 million gross square feet, most of that's here in the valley. We do have a physical location on each coast of the country and through some of our operations are actually active around the globe now, so things, things are complicated.

We do use a lot of energy. We spent over $32 million a year on various types of energy purchases, mostly electricity and gas and sustainability and making sure that we are managing and minimizing the impacts on our planet is a very important part of what we do. We had the first school of sustainability in the country. We offered the first Ph.D. in sustainability. So we think it's really important that we try to practice what we preach and so what we do with our, our practices as an organization in the way of sustainability and energy conservation are, are really important to us.

So the next slide talks a little bit about three of the approaches that we use, utility rebates, power purchase agreements, and then finally our SIRF or Sustainability Initiatives Revolving Fund,

sometimes known as a "Green Fund." Each one of these is important for different reasons. They have different scales, but we, we have found that they're both helpful to us in terms of coming up with the resources that are necessary to make the investments to help us advance in, in the area of sustainability and energy conservation and they help us also engage the university community.

One of the things that we do at university or in fact the most important thing we do is that we help students reach their educational goals. You know as a part of that they're going to go out into the world and they're going to you know model these values and these practices. You know we're a small part of the energy footprint of our country, but you know we train virtually 100 percent of the future leaders of our country and so you know what, what they experience on our campuses is, is truly important in terms of reaching some of these goals.

So the next slide talks a little bit about utility rebates. You know by our scale these are relatively small, but many states have often through their utilities or some special governmental entity has been set up the opportunity to earn certain rebates if one makes investments in various types of projects or has a certain shape to its use of energy and there's some other examples as well.

In our case you know we've been able to address the envelope of our buildings, you know how we manage our IT infrastructure, what we do in the way of heating, ventilating, and air conditioning equipment, all that's managed by the use patterns are, lighting is a big one, et cetera. This just shows the last three years in terms of rebates that we've received each year. Relatively small in terms of the dollars, but I think it does provide incentives you know to all of us. So I, I think we all have sort of a competitive nature to us and so doing exactly what the term incentive would suggest it's incenting us to do the things that we probably all ought to be doing in terms of our use of, of energy. So that's a strategic that we try to follow.

There's lots of public policy that is important in other areas that I'm going to mention as well. So you know being aware of what those opportunities and, and taking advantage of the ones that make sense for your institution we have found are you know important things for us to do.

The next slide talks a little bit about the areas had the biggest foot, footprint, carbon footprint impact for Arizona State University and

that is our goal over time to be carbon neutral. Our president, Michael Crow was one of the initial signatory of what was known as the "President's Climate Commitment." So institutions of higher education across the country have been part of that and I think made a real difference in terms of how we are able to manage you know our, our energy use.

So basically what we're doing here is through working with third parties, the power of partnership we think is really important for us is we're using the, the capital of those partners, third-party capital in a lot of cases, we're spreading the capital costs as necessary to implement these strategies over time.

Because we are a nonprofit entity it's helpful to partner with a for-profit entity that is able to utilize various tax incentives. Again, that, that word "incentive" is important. That savings that's produced by federal tax policy or state tax policy is then shared you know with the institution, which lowers our overall costs.

The other thing working with partners has done is it's allowed us to have access to renewable energies that may be available in other markets. You know energy policy and energy use can be a little bit like politics, it's all local, but what we have found is that having access to technology that may be emerging in other markets is really important to reach our goals of a zero-carbon footprint and one-hundred percent sustainable energy use.

So the next slide talks a little bit more about that. We have over 90 solar systems of various types on our campuses. Those are really harnessing the a, the a obviously the solar power that we have available to us. If you can't do that in the valley of sun I don't know where you would. Seventy-five of those 90 on-site solar systems were actually done with a partner through a power purchase agreement or a similar arrangement. That has produced about 35,000 megawatt hours a year of energy that we use to power our campuses.

We use that for shade structures that cover our parking lots and also serves as congregation points. On the right you see one that is over our softball field, so the, the Sun Devils that play women's softball on that field. In the middle is something we call, "Power Parasol." This happens to be near one of our libraries and our student union. It is a power plant, but it also provides in our climate a very nice shaded location you know for all kinds of outdoor activities on our Tempe campus. So these are very important to our strategic.

The next slide will show you where, where we're going now. We have found that the economy of scale that's available on very large or grid scale, renewable energy projects is superior to what we're able to do with a smaller systems on our campuses. So we have done three of those projects, one of those you see on the left there. That is a 400-acre solar farm that happens to sit in Red Rock, Arizona, between Phoenix and Tucson.

We purchased the majority of the power for that plant that was constructed for one of our major utility partners, a public utility. The remainder of that was purchased by PayPal and that is delivered to us and we use that power to reduce our carbon footprint and a share of renewable electricity.

On the right is a picture of the Armadillo Flats wind power energy plant. This unlike the solar plant I just mentioned actually sits in the state of Oklahoma. So we have a virtual public power agreement there that essentially is a also known as a "contract for differences." We purchased that power that's produced by the wind turbines and then we sell that to a third party while retaining the renewable energy attributes as part of our goal of reducing our total carbon footprint.

Then we have a third project that will be another solar plant with our other major regulated utility provider in the state of Arizona that will allow us to essentially have about two-thirds of our electricity use as renewable green energy. The remainder is something we'll be focused on in the future and is largely around substituting for what is now natural gas powered combined heat and power plants on our campuses that we have for reliability and redundancy as a major research university.

The next slide talks a little bit about what we're doing in the area of green fund or SIRF in our case is what we like to call it. We've had this in place for a little bit over a decade. There are three levels of projects and they have a little bit different approach for each of them. Tier 1 is something that we use to really work to engage our student body. Our, our students are, are really creative and, and smart and we want to harness all of that brainpower that they have. They're also very committed you know to a more sustainable world and so they're concerned about what we do at the university with our sustainability practices. May often have very good ideas, so we're able through this program to ride them with some funding you know to actually implement these, these ideas.

We have larger projects that we do as well. Tier 2, which might be something that a school or a college or a department would do. Then Tier 3, which is usually a central project that we have that is more capital intensive and has a longer payback period. But we have a, a cross-functional committee of, of folks across the university that evaluates all these projects. It's like apply for a grant and ultimately the, the chief financial officer signs-off on these projects.

The next slide shows you a little bit about how that works. So as I mentioned Tier 2 and 3 we, we tend to have a little more formal financial criteria there. We, we look for you know net present value of greater than $10,000.00 and we hope for a internal rate of return of greater than eight percent. We do allow for the more capital intensive Tier 3 projects a little bit longer payback period for those things. You know we are benefiting from the financial attributes of that, but really probably more important is making sure that things happen that we think are important to being you know a good partner and a good sustainable global citizen as a university. So you know we want to allow for those things that might have a little bit longer payback, but are really important in terms of sustainability attributes.

And then the, the next slide is really kind of a summary here. You know this, this seminar is really about financing you know these types of investments. We all know that we've been through a challenging period here this last 18 months and even before. You know universities have lots of great ideas looking for funding and so there's, there's always you know a challenge for financial resources. So any time you can come up with some strategies to make some of these things happen you know it's, it's a good day.

So utility rebates, basically using other people's money, OPM, and, and you know those, those typically you don't have to payback so that's, that's wonderful when you find those opportunities. PPAs, you use other people's money and pay, pay those people back, your partner, slowly over time. Then of course the SIRF fund, we also want to use our own money and, and we try to make sure that those projects pay ourselves back. What that does is it creates sort of this virtuous circle where we make some investments, we implement them, we generate savings often against our utility's budget and then we use those savings to create that cycle by reinvesting in the next round of projects.

So those are some of the things that we do at ASU. I'm looking forward to listening to the projects that, that my colleagues have and appreciate your time this morning.

*Hannah Debelius:* Excellent. Thank you so much Morgan. I really appreciate it. You covered a lot of ground there and no wonder because ASU has been doing such wonderful sustainability work for a while now. So really appreciate those insights. I know PPAs in particular have been on the minds of lots of people in higher ed that we've been speaking to for a while.

Next up we have Elaine Sadowski from the Community College of Allegheny County. Elaine is a Director of Energy and Sustainability at the Community College of Allegheny County. She has many years of experience in local government, educational institutions, small industrial and commercial energy management. Her projects for CCAC include energy performance contracts for the college, as well as the county. She initiated the solar power purchase agreement for CCA. Elaine is a member of AEE and ASHRAE and is a certified energy manager.

Wonderful. It looks like we can, we can see and hear you I think Elaine, so go ahead and take it away.

*Elaine Sadowski:* Okay, great, thank you so much for inviting me. It's a pleasure to share our experiences.

First if you go to the next slide please.

A little bit about CCAC. We are a community college located in Pittsburgh, Pennsylvania. We were founded in 1966. We have an annual enrollment, full-time equivalent of 24,000 credit and 17,595 noncredit students. We have the conventional college-type programs in arts and humanities, business, education, social sciences, human services, health-related professions, STEM, and also teach skilled trades. We have four campuses and four centers and that's approximately 1.6 million square feet of buildings. Our annual energy and water bill is about $3.5 million.

Next slide please.

We have a lot of challenges. We live pretty much hand-to-mouth financed by some funding from the state and Allegheny County and also through the tuition that we charge our students, but we are hesitant to raise the tuition because for many of our students, even our existing tuition is, is too much, even though it's relatively low.

We have a lot of aging facilities. A lot of them were built in the '60s and '70s. The equipment in them is reaching the end of its useful life. A few of our facilities are over a hundred years old.

We have set ourselves ambitious energy and water-saving goals. We're members both of the DOE Better Buildings Challenge and the Pittsburgh 2030 District. But we have limited capital and there are limits, legal limits to the amount of indebtedness we can incur. We need to reign in our operating costs and keep from raising tuition. This is something that our board of trustees is, is very emphatic about. We've tried to keep our costs as low as possible so that our… Although we are very much interested in saving money, we look at it as a cost saving thing first and then as a sustainability goal, so our, our aims are not quite like ASU's.

Next slide please.

Our first case study is our South Campus. It's a 278,000 square foot building. It's basically one big building, 1970s vintage. The equipment was antiquated, inefficient, it was a maintenance nightmare. We practically had contactors living in the boiler room trying to repair the equipment to just keep it running. We didn't think we could make it through another heating and cooling season when we started this project. This building had a $624,000.00 annual and energy and water bill. The pre-retrofit Source EUI was 267.9 kBtu's per square feet, which is, was outrageous.

Next slide please.

Because of this aged, failing central plant consisted of a boiler, chillers, and pumps we could have just replaced the existing equipment with a new one of what it originally was. But we decided to frame this as an energy-saving project so that we could go into an energy guaranteed savings contract and pay for our new physical plant through the energy savings that we incurred.

We went out for a bond and we've set it up so that we have guaranteed savings that will cover our bond payment for, for the 15-year life of the bond and we're actually exceeding the savings that we predicted.

We replaced two steam boilers and steam absorption chillers with new electric chillers and hot water boilers. The basic need for the steam boilers was to operate the chillers. I believe this was done back in the '70s our local electric utility had extremely high demand charges and I believe this was done in order to counteract

some of the effects of those charges, but it came out being far less efficient than a conventional system and costing us a whole lot more money.

Next slide please.

So what we did we did some lighting upgrades, because they have a quick payback and helped to provide funding for the other measures. We did some water conservation upgrades, including low-flow plumbing fixtures. We installed new boilers, new chillers, new pumps, new switchgear, expanded the, the building automation system. We retro-commissioned everything that was not replaced. This lead to some interesting findings as well.

Next slide please.

In addition to the plumbing fixtures, the new chillers required far less cooling water, so our cooling tower water consumption was lowered dramatically. And because we had a much more efficient central plant we decreased our gas and electricity costs as well.

Next slide please.

This is just some additional information about the retrofits that we did if anybody's interested.

Next slide.

This is a visual. On the left you see the old boilers and on the right the new boilers. We actually opened up so much space in the, in the boiler room we now rent it out for weddings and Bar Mitzvah's, not really, but we really did empty out the boiler room.

The next one is the cooling system, the old absorbers and the new electric chillers.

Next please.

These are our pumps, the old ones and the new ones. And everything is variable speed drive, much more efficient than the originals.

Next please.

This is a little more about what we did. One of the things that we found when we did the retro-commissioning this building has

served by the central plant 400 or 500 individual unit ventilators in all the classrooms and these also are a maintenance nightmare. So when we went through these we found a lot of free-stacks that were not functioning, among a lot of other things, but just doing that saved us from having to replace some of these units when they would freeze-up over the winter.

Next please.

This is the financial picture. We spent almost $4 million and we had a $4 million bond. We anticipated a total savings of $269,000.00 a year.

Next please.

Our energy and water annual dollar savings were projected to be $241,441.00. Our actual energy and water cost savings during the first complete year of operation was $283,558.00. So we're actually getting even some positive cash flow after we pay off our bond. Our Source EUI was lowered to 168.5, which is about 35 percent and we've been holding pretty steadily at a decrease in energy and water costs of about 43 percent.

Next.

Our next case study is a power purchase agreement. This is our North Campus, it has an area of about 150,000 square feet. It was constructed in 1990, excuse me, from an old department store industry it's actually the most efficient of our campuses, with a Source EUI of 129.7 at the end of 2019. Our energy cost is almost $200,000.00 a year and 77 percent of that is for electricity. We have higher electric costs at this facility because it's served by another local distribution company, as well as it being the only campus served by this company, so we have higher, excuse me, higher per kilowatt-hour costs than any of our other sites. We thought maybe because of that it would be a good idea to explore some solar energy.

Next please.

So we, we looked at power purchase agreements. I was given permission to go ahead with the solar project as long as I didn't spend any money, so that, that was my, my framework. *[Laughs]* We went through the Pennsylvania Solar Center's G.E.T. Solar program. They provide technical assistance to Pennsylvania nonprofits and residential people on project financing, technical

assistance in acquiring power purchase agreements and also with project bundling so that we can get lower rates by bundling several smaller projects together so that there are economy of scale.

We were able to get a power purchase agreement with a rate lower than we are currently paying for electricity. We can produce enough energy to supply 30- to 40-percent of the building's load. We estimate this will save us about $27,000.00 a year.

We have not kept the renewable energy credits. Our financing entity is doing that. Our board of trustees preferred to have the greater cost savings than to purchase the green attributes of the energy.

Next please.

This is just a brief description of a power purchase agreement. Again it allows us to take advantage of somebody else's capital, somebody else's tax credits, somebody else's accelerated depreciation on a solar system and we just pay them for the electricity that they generate. They take care of the system, they maintain it and we, we just reap the benefits.

Next please.

This is a, a conception of what the system will look like when it is complete. We expect to start on it in September. We're going through all the paperwork now. The nice thing about this is that the power purchase agreement spells out the cost of the electricity that we will pay over the term of the agreement, so we know for budgeting purposes what we will be paying. And because the third party owns and operates the system we don't have to worry about any of the maintenance and the third party also is incentivized to maintain their system at peak production so that they can generate as much electricity as possible.

Next please.

Some of the questions you will get if you start exploring a power purchase agreement is: Why is it for such a long period? That's because there's a, a substantial capital cost and it has to be amortized over a long period. So these are questions I actually got from our law department, they, they find the length of this agreement rather odd. Why are we buying all the electricity produced by the array, even if we don't use it? That's because we'll

be able to sell anything that we don't use back into the grid. So those are questions your legal people may ask you about.

We use the Solar Energy Industries Association model agreement and that covers a lot of the questions that people ask when you try to enter into a PPA. It covers things like what happens if the, if we sell the building and default, et cetera.

Next please.

*Hannah Debelius:* Elaine?

*Elaine Sadowski:* Yeah?

*Hannah Debelius:* I know this is your last slide, but if you want to just spend 30 seconds then we'll, we'll move forward. Thank you so much Elaine.

*Elaine Sadowski:* Right. A couple of things to look out for, choose your baseline carefully. The COVID shutdowns have skewed a lot of energy and water consumption patterns, so don't choose a COVID year for your baseline. Be careful of maintenance savings estimates. Some of them are real and measurable, some of them aren't, some of them are kind of made up and inflated. Pay attention to the contractual costs escalation rates for energy. Check out model documents that governmental and trade associations have prepared that give you a framework for entering into some of these agreements. The last thing is to bundle your energy measures so that things that payback quickly can help you to pay for more capital-intensive projects.

That's it, thank you.

*Hannah Debelius:* Excellent, thank you so much Elaine. I really appreciate the specificity on a lot of those projects and also it's, it's too bad we're all on mute, because I actually did laugh out loud about your joke renting out that space on the boilers.

Next up we have Kyle Saltsman, who is a Senior Consultant at RE Tech Advisors, where he supports the financial allies participating in the Better Buildings Challenge as an account manager. Prior to joining RE Tech he spent five years working as an operations and product manager at Spark Fund, a technology subscription company based in DC as an active financial ally. With that Kyle we're looking forward to hearing more about some financial solutions.

*Kyle Saltsman:* Yeah, hi everyone. Wanted to start with a quick thank you to both Hanna and NACUBO for organizing this webinar and thank you all for your time and attention today. Really looking forward to getting to your questions, so I'll, I'll try to keep my remarks as quick as possible.

My push today is to layout the ways of the DOE's Better Buildings Challenge support third-party financing in the higher education context.

During the previous presentations you saw some in-depth explorations about how power purchase agreements, bonds, and performance contracting were used to help ASU and CCAC all execute their projects. I'll, I'll be discussing some of the resources on the Better Buildings Solutions Center and how you can use them to answer any questions you have about not only those materials, but any, any form of third-party financing option we, we hope that would be under consideration for you and, and your opportunities.

To tell you a bit more about myself, obviously Kyle Saltsman, based in DC and at RE Tech Advisors we help run the Better Buildings Challenge or help support that program and we help run the Financial Allies Program in particular. Their participating financial allies are organizations that cycles to, pledges to invest certain amounts of clean, of capital into clean projects. I'll talk more just a little bit about how you can reach out and connect with them directly.

So on this slide I'd like to begin with a quick overview of the landscape of clean energy finance as I see it. Financial can take a variety of forms. I had a lot of attention paid to developing a wide variety of approaches that aren't always universally applicable. Frequently the, is, it's a matter of trying to find the right approach for the specific needs that, that you might have.

So on the left of this diagram we have the traditional financing options. All of these have been available for a long time for project finance generally and are often used to be applied to clean finance projects of renewable energy and energy efficiency projects. Then on the right, there's a variety of financing approaches that have been developed that are specifically tailored to the needs of energy efficiency and renewable energy projects. They allow you to payout of savings with no upfront capital down or they may have a billing mechanisms that are specifically tailored to not impact your balance sheet depending on the needs of your organization, which I

know is something that, that came up during some of the previous conversations.

But there's a high barrier to being able to enter this space and operate in given the variety of definition and approaches that have been developed in the last, particularly in the last five to ten years as more effort is expended to try and use financing to achieve a better performing buildings.

To help out and to help make these financing resources more accessible the DOE Financial Allies put together something that we call the "Financing Navigator." So this includes a factsheet detailing how each of the approaches, each of the approaches on that, that page – I'm sorry you can stay back on that last slide for just a second more, how each of these approaches work, including their major advantages and disadvantages and who acts in each of these spaces. So what you're seeing here is actually a screenshot taken directly from the navigator. You can navigate to and click on these as, as live icons to be able to learn more about each of these approaches.

So if you go to the next page I have some more information on the Financial Navigator. It is a nexus of resources and definitions for each of the financing approaches and is hosted on the Better Buildings Solution Center. The Solution Center generally contains a wealth of resources, toolkits, and case studies covering the learnings and sharing best practices of all of the participant across the Better Buildings Challenge, not just from the higher ed section, sector specifically, but also allows you to capture learnings from other similar industries as well.

The Financing Navigator specifically is a widely used resource with over 25,000 unique users since launched, validating the, the information there for, for you. You can access using either the link on the screen here that we'll, we'll share after this presentation or just by Googling "Financing Navigator" and it's the first result that should, that should pop-up.

I'm going to take the rest of my time to go through some specific resources that are on the Solution Center and accessed through the Financing Navigator that I think are going to be relevant to your interests, as well as exploring some other case studies that will cover a variety of the options that, that weren't necessarily explored earlier in this presentation.

So if you go to the next slide you'll see one of the other features and traits of the Navigator. So on the right-hand side you know much, not unlike a college campus, you're going to find that it's easier to find your way around the financing space if you have a guide, if you have a partner. So we try to make it really easy for anyone to connect with our participating Financial Allies. These represent a wide variety of institutions from the largest national banks, to specialty financing organizations that just focus on the single approach. You can enter in pieces of information to help filter down so you can connect with the right Financial Ally. If you want to reach out to, to a real expert on a, on a high-level, high-level basis through the Financing Navigator.

We also have some resources here that are tailored specifically to the needs of the higher ed context. So we've got a, a primer for that pulls together a, a wide variety of solutions from across the Solution Center that are going to be the ones that we think are the most highly relevant to you and, and your interests.

If you go to the next page you're going to have a good example of one of the resources that's hosted on the Solution Center. So here the University of Utah we worked together to develop an implementation model diving into the Green Revolving Funds. During Morgan's comments he mentioned the traits of a virtuous cycle where when you have an active program where you deploy and invest in your buildings you generate savings that's paid for that project and, and then some.

Green Revolving Funds are a way to formalize and articulate and track the savings that come from these types of projects and help you build the momentum to be able to continually reinvest in your buildings. And the University of Utah case study is a great example of how this virtuous cycle was started and how they turned their initial investment into a repeating, recurring investment that repaid the, the initial, the initial investment multiple, multiple times over, over a longer period of time.

On the next slide we have another specific resource I want to bring to your attention. So the Finance and Resilience Initiative was a workflow that we undertook in recent years that loaded a number of helpful resources, including case studies that demonstrate successful resilience projects. So resilience, physical resilience to extreme weather events, as well as more general and financial resilience topics are things that are height of mind for a lot of organizations. Many different campuses are going to find themselves at a different point along their journey towards being at

the point where they feel that you've, you've addressed all forms of, of resilience that's relevant to you.

So we created the, a toolkit for you that has appropriate information for you at no matter what step you are on this journey. If you're just getting started we have information there that's helpful for building, getting stakeholder buy-in and, and engaging the decision-making framework at, at early stages. That's helpful not just for resilience context, but any type of, of building investment that you're trying to build momentum around. Then there's more case studies, factsheets, ah, as well as example implementation models that will hopefully contain insights that will be helpful for you no matter where you are on the journey.

On the next slide we have another specific resource I want to bring to your attention. So one of the most frequently asked questions we get when it comes to third-party finance is: What is the difference between efficiency-as-a-service and energy savings performance contracting? So we released a factsheet that specifically delves into that issue. We had one of the I think both, both presentations talked about the, the benefits of ESPCs and efficiency-as-a-service is similar in the sense that a third party is engaged to help make sure that the project is going to be successful, but they differ in a lot of contractual mechanics and impact particularly on your balance sheet and what's the, what happens during the project post, post-completion.

So we've got a factsheet that delves into where they're similar, where they're different and this is just an example of the, the type of information setting materials that we hope you'll be able to find on the Solution, on the Solution Center generally.

If you go to the next slide to, to round things up I want to profile another case study with some learnings from a different sector. So here is a quick snapshot of an implementation model which is also linked on this page, delving into how Iron Mountain, which is a data center participant in the Better Buildings Program, worked with Redaptive, one of the Financial Allies to create a scaling efficiency-as-a-service project. Efficiency-as-a-service engagements are built around the contractual what the outcomes are trying to, to achieve and they're appropriate for a wide variety of technology types.

The main key for them is their scalability. So where some contracts and some projects are really easy to do on a one-off to be able to handle a specific building, they setup, these organizations work

together to make sure that they could scale the solution that they were applying, first it was for, for lighting, from or not just a specific solution and a specific location, but across many different buildings at all the areas where Iron Mountain does business and was at scaling trait to the, to the project that allowed them to deploy faster than was possible just through an internal capital investment strategy.

The other trait for this is that that same contractual mechanism is first being used to cover lighting and some controls, with additional phases being made that much easier, because there's an existing contractual framework in, in place to be able to expand to multiple different technologies.

So if you're trying to figure out how you can do your first project or scale from your first project to multiple projects and multiple technologies there's likely going to be some examples for you on the Solution Center, not just in higher ed, but from other sectors as well.

So with that I'd like to turn the presentation back over to Hannah and to you all for questions and answers.

*Hannah Debelius:* Excellent, thank you so much Kyle. I really appreciate that. I think that was a good way to tie together a lot of what our other speakers have also been talking about.

At this point I would love to invite our speakers to turn back on their videos and unmute themselves. And for our audience it is not too late to submit a question. You can go to slido.com, the event code DOE and add questions here or if you see a question that you like again you can hit that little Thumbs-Up as somebody just did and the question will move up to the top and so we can prioritize that as we answer it.

I can answer this first question real quickly, which is that: Can we get the presentations sent to us.

*Elaine Sadowski:* You're muted Hannah.

*Hannah Debelius:* Ah, I don't think that I am Elaine. Can other people hear me?

*Kyle Saltsman:* Yeah, we can, I, we can hear you.

*Hannah Debelius:* Okay. Maybe it might be the volume on your, on your computer then. If you have an issue Elaine you can also again Chat us in the

organizations, organizers and panelist Chat and we can maybe get you setup.

So the first question is: Can we get the presentations sent to us? So today's presentation was recorded and we do have the slides and we will be sending that out to all of the registered attendees. Usually it takes us about a week to get that online on the Better Buildings Solution Center, but all of this will be provided to you so you can look back at the slides and access links and all that good stuff.

So with that I will move onto our questions.

*Megan Schneider:* I was just going to say for those of you that are used to getting our webinars on demand through your NACUBO account this one will not be there, but it will be posted on the website.

*Hannah Debelius:* Excellent, thanks Megan. So our other obvious question on content is: What, if any, oop, okay I'm still going to go with the second one: What, if any, state rules in Arizona and Pennsylvania limit your ability to reinvest savings to achieve clean energy goals? I'm in a state institution in North Carolina and we only get a small portion of utility savings back to reinvest.

So it sounds like that question is directed mostly toward Morgan or Elaine, so since Elaine might be having some audio issues, Morgan if there's anything you can speak to that we'd love to hear more about reinvesting the savings in Arizona.

*Morgan Olsen:* Sure. Well so I'm, I'm going to make a couple of assumptions in answering the question. You know it probably relates to you know financial management practices that a particular state may have. In Arizona there's, there's both good news and bad news. The good news is if we're able to generate you know savings against our utilities cost we can retain them and, and use them in the way that I described or other ways. The bad news might be that you know we don't have a specific utility's line item and so you know if our costs go up in that area that's, that's on us. There's, there's not the state or anyone else to sort of bail us out on that.

And so what, what I think that that does is it provides us with a tremendous incentive you know to look at the types of things and others that we've been talking about to make sure that we're you know managing those costs effectively and, and also that we're doing the other things related to sustainability and energy

conservation that are important. So you know we have all the incentive we need if we can figure out how to do it.

*Hannah Debelius:* Yeah that makes sense, thanks Morgan.

It looks like Elaine has lost audio, so Elaine hopefully we can help you out with that in the Chat. But in the meantime we will go onto the next question here. I believe maybe Kyle you can help us out with this. But the question is: Is a purchasing power agreement, which usually is called Power Purchase Agreement, the same thing as energy-as-a-service agreement, which is something called efficiency-as-a-serve? So yeah Kyle.

*Kyle Saltsman:* Yes, so short and – there's a yes and no. I sort of think of them or Power Purchase Agreements are the square to the rectangle that is energy-as-a-service agreement. But there are definite differences between, between the two and we have factsheets that delve into the mechanics of both accessible through the Financing Navigator.

In short, Power Purchase Agreements are defined as delivering, generally delivering power to the recipient, to the customer, at a certain dollar-per-kilowatt-hour rate. Where energy-as-a-service agreements will define the delivery of the service through a wide variety of, of, of methods they may define as specific outcomes that going to be achieved like well-lit spaces or well-heated spaces or they may define the contract as a percentage of savings for whatever a shared savings or whatever is generated to the, to the contract.

The other main difference is that in Power Purchase Agreements that uses shorthand for a particular type of financing style where there's an outsourced legal entity that will usually be the owner of the equipment that is taking advantage of any investment trade credits or RECs, renewable energy credits that are generated from the project. So they are generally referred to a particular method of third-party finance where energy-as-a-service can, ah, is again a little more, a little more flexible and references a larger variety of approaches for third-party financing structures.

*Hannah Debelius:* Excellent. Thanks so much for clearing that up Kyle.

So the next question we have here I believe we'll direct to Morgan and we're still working on Elaine's audio issues, but Morgan: How would you suggest to best connect with utility to understand or take advantage of a rebate? How do you know what's out there?

*Morgan Olsen:* Great question, Hannah, and I think in, in our case you know we, we have an objective of managing the relationship that we have with our major providers, including you know our regulated utilities and we find that at least here and I suspect it's true of other places that you know each of them probably has some form of you know customer relationship management program. So you know if they're not reaching out to you I would suggest reaching out to them and you know particularly when, when you know utilities are a significant part of your budget.

You know there's I think so much opportunity and so much exposure you know relative to cost management that it's probably something that as people who are responsible for the efficient use of resources within their institutions you know we, we spend some energy, no pun intended, to do. And so we, we, we make that an objective. You know we have formal goals in terms of you know reducing the our you know cost per student, cost per gross square foot, also changing the attributes you know of, of that use of resources to you know reduce use of energy and the cost of it.

*Hannah Debelius:* Excellent. Thank you so much Morgan. Elaine, I see that you, you're video popped off and back on, would you like to test your audio?

*Elaine Sadowski:* Hello, can you hear me?

*Hannah Debelius:* Yeah, that looks like we can see you and we can still hear you.

*Elaine Sadowski:* Okay.

*Hannah Debelius:* So wonderful. Elaine so I actually I think we – I know that we've already answered this question, but Elaine our first question was just about in the state of Pennsylvania if there were any, if there was anything that prohibiting you from being able to reinvest savings back into projects? If you want to just quickly address that, that will probably be our last question for Q&A here.

*Elaine Sadowski:* Yeah there was nothing that prohibits reinvestment. One thing that we did run into was that our law department determined that labor agreements, like minimum age or prevailing wage agreements do apply to the contractors constructing the array through the power purchase agreement. So that was, that's one thing you might want to check into if your public institution and there are labor agreements covering you.

*Hannah Debelius:* Excellent. Thank you so much Elaine.

We do have just a couple of other conclusion slides to go through, but before that Megan anything else that you'd like add on behalf of NACUBO or a resource that came to mind as our presenters were speaking today?

*Megan Schneider:* Thanks Hannah. Yeah so we have some additional NACUBO resources that you'll find at the end of this slide deck, so please feel free to make use of those. And please of course feel free to reach out to me. I handle this area of policy at NACUBO so please absolutely if you are a higher ed institution, whether you're a NACUBO member or not feel free to reach out to us with any questions.

*Hannah Debelius:* Excellent. Well this is our next slide so I, I'm glad you went in for it and again then again these slides will be available for you all in about a week. You can click through these.

We also this is just one session in a full Summer Series Sessions of Better Buildings, so you can also join us for all of these. I know NACUBO also has a lot of other webinars and education materials out there. The next webinar will be on June 29th and it's called *What's Hot With Heat Pumps.* I've been hearing a lot about heat pumps lately so I hope you all tune into hear what's hot.

And finally, you can watch all of our recordings, including this one on, eventually, on our On-Demand Webinars through the Better Buildings Solution Center. So you can explore by topic or geographic regions. This also came up a lot today or even by barrier and solution, you can navigate those resources.

Finally, I would just like to give another big thank you to all of our panelists today for, for sharing your experiences and your solutions on campus and again NACUBO for partnering with us on this webinar. We know that now more than ever it's been a really tough time in financing, but now more than ever sustainability initiatives and energy efficiency are, are critical to campus in the broader world. So thank you all for the work that you do. I hope that the questions we didn't get to you can reach out to our panelists and have a wonderful rest of your afternoon.

*Morgan Olsen:* Thank you.

*Kyle Saltsman:* Thanks Hannah.

*[End of Audio]*