

Joe Indvik:

Okay the graph has reached an asymptote to breakout some old math terminology, so I think we can get started.

This is Joe Indvik here.

If you could go to the next slide, Kyle.

I'm really excited to say that in this session we're going to be diving into energy efficiency- as-a-service, which is an approach to doing energy retrofits that has garnered a lot of increased attention over the last couple of years. It's one of the things we most commonly get asked about in the Better Buildings community, so I'm really excited to have a dedicated session about nothing but efficiency- as-a-service today.

So if you're new to this concept not to worry we're going to do some introductory background at the beginning to get you up to speed. But if you're a veteran you're also in, in luck, because we're going to do a sort of a deep-dive into how efficiency-as-a-service is being applied and practiced with two of the leading providers of this solution on the call with us today.

So to do that we're going to do a little bit of a different approach here. We're going to have after the initial presentations and sort of fireside chat with the two providers, Aaron and Julia, to go through kind of how their approaches work in more detail and they'll get into the nitty-gritty of the efficiency-as-a-service model and how it's being deployed. So I'm excited for that.

But just to set the stage quickly you know as we all know the world is sort of rapidly shifting to an as-a-service approach to service delivery in lots of areas of the economy. You've got music as-a-service with Spotify and Pandora, you've got transportation as-a-service with Lyft and Uber, you've got software as-a-service that's becoming increasingly ubiquitous and efficiency- as-a-service is in a lot of ways a response to the same desire to dramatically simplify the user experience and the customer experience when it comes to doing energy retrofits.

So we're going to dig into that how that all works and I think most importantly for you give you some information that you as the audience can use to decide if efficiency-as-a-service is a solution you may or may not want to explore for your organization.

So before we dive in a couple of logistical things. So we are going to be recording this session and it will be posted to the Better

Buildings Solution Center for your reference. We'll let you know the via e-mail when the recording becomes available. You're going to be in "listen only" mode as an attendee, so you'll be muted.

If you have any audio issues or any issues of any kind feel free to use the Zoom Chat function and our tech support people will see that you get taken care of.

So if you go to the next slide.

Again, I'm Joe Indvik, I'm going to be moderating today. I'm the head of Clean Energy Finance at RE Tech Advisors, which is a consulting firm here in the DCC area and along with Kyle Saltsman, who's running the slides today, I co-lead the financing sector for the Better Buildings Challenge on behalf of the Department of Energy. So great to be with you all today.

Then if you go to the next slide.

Our agenda is pretty simple. I'm going to do a brief overview of efficiency-as-a-service to give everyone some background. We're going to hear short presentations from each of our providers. Then we're going to do sort of the fireside chat guided interview with both of them. Then we'll have plenty of time for audience Q&A at the end as well.

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This should not be unfamiliar to you if you've been on other summit sessions, but we're going to be using Slido for Q&A, polling, and session feedback. So you can go to slido.com right now and we're about to do a poll so I suggest you do this now on your mobile device or you can open a new window on your internet browser and use the event code #DOE. Once you enter that code you can then select the session for today from the dropdown Menu at the top right. The session again is called, "Anatomy of EaaS."

If you want to ask the panelists any questions during the presentation you can submit them at any time and we'll get to as many of them as we can at the end.

So go ahead and open up Slido now. We're going to be launching a poll which you can see here asking which sector you come from. If you please respond to that quickly we'll get a sense for where everybody is coming to us from.

Okay, good mix of various government folks, contractors and service providers, some commercial real estate, pretty good showing from nonprofits, that's interesting, higher education, so yeah a good, a good smattering of different sectors represented today. That's great. So we'll be – I think everything we'll be covering is going to be applicable to pretty much all the sectors we see listed here. Although we have seen different kind of adoption rates among different sectors, which we'll talk about when we get there.

So if we can go back to the slide deck.

I'm really excited for our two speakers for our two speakers today. They're kind of long-time colleagues of, of myself and Kyle and have frankly contributed massively to the growth and efficiency of the service that we are seeing in the market right now and really helped shape a lot of that growth, so it's great to have them both here.

We've got Julia Berg from Redaptive and Aaron Block from Allumia and I'm going to introduce them more fully before their, their segments of the presentation. But I should also note that Redaptive and Allumia are financial allies in the Better Buildings Challenge, which means that they've committed to helping partners get energy projects done by deploying innovative financing solutions. So they are available for Chat if you'd like to talk to them and their contact information is going to be available at the end of the presentation.

So a little bit of background.

If we go to the next slide.

Background to kind of set the stage here. I always like to remind us of where we're, where we're at within the broader universe of financing options. If you attended the Five Key Trends in Energy Finance session yesterday, this will look familiar to you.

This is how we at the Department of Energy kind of think about the landscape of financing options for energy efficiency and renewable energy. You have sort of traditional financing on the left-hand side, things like leases and loans and then you have specialized financing which are financial products designed specifically for energy efficiency and renewable energy. So it's things like on-bill financing, property assessed clean energy, and

this broad category of energy services, which includes a variety of different instruments, one of which is efficiency- as-a-service, which we're going to be talking about today. So that's kind of where we, where we sit within the broader universe.

You go to the next slide and, and if you'd like to learn more about efficiency of the service or any of those other financing options after this webinar today I'd highly suggest you checkout the Better Buildings Financing Navigator, which is a free publicly available online tool that we created to help you find financing solutions that will work for your organization. This is a really good way to explore the different options. We have case studies and fact sheets and resources. I think most importantly it's a way to connect directly with the financial allies which are a group of about 50 financing companies that have signed on as partners in Better Buildings and sort of stand ready to help you look at projects to potentially finance those projects as well.

So highly suggest you check it out. You can go to the link below once the slides are shared or you can just Google Better Buildings Financing Navigator and it will take you right to it.

Onto the next slide.

I want to take a moment to define to what efficiency- as-a-service means more broadly before Aaron and Julia kind of talk about what it means in the context of their individual offerings. But efficiency-as-a-service is a way of doing energy retrofits that is off-balance sheet and a third party ownership model. I will caveat this by saying this is not constitute accounting guidance, we're simply reporting on what you know most agree is true about these things. But generally speaking it's a third-party ownership model for energy retrofits, which means that efficiency-as-a-service provider actually owns and operates the energy equipment on your behalf and typically with no money down. So that provider is usually financing the equipment themselves upfront, which means you as the customer typically don't have to make any payments upfront.

In terms of the actual contract itself it's a services contract that has typically a pay-for-performance element, which means you're paying for the service of energy savings or the service of keeping the lights on or whatever that service might be. It's a services contract structure which is why most folks consider this to be an off-balance sheet solution. So it's a little bit different than traditional financing in that regard.

Also, because the provider owns and operates the equipment they typically are handling installation and maintenance either themselves or through a contracted contractor or engineering firm.

So give you a sense for kind of what that looks like in practice this is one version of an efficiency- as-a-service arrangement and energy services agreement. So you have an ESA provider. That provider has a direct contractual relationship with the customer through an ESA in this case, but they also have a contract with a contractor or an energy services company that's actually doing the installation and maintenance. So unlike a lot of traditional financing it's the ESA provider or the, or the efficiency service provider that's bearing a lot of the performance risk should the equipment not perform as, as expected.

We have a great fact sheet on this that's also on the Better Building Financing Navigator. If you want to dive in more we've got lots of good case studies linked from that fact sheet as well.

So if you go to the next slide.

You'll hear a lot of different terms thrown around to describe efficiency-as-a-service, there's lots, there's not a whole lot of standardization in how people talk about this, but some of the words you might hear used to describe a similar model are things like ESAs, SESAs, or SASAs, MESAs. You might hear technology subscription agreements, you might just hear it called a services contract. You could hear Lumens-as-a-service, you could hear lighting-as-a-service, since lighting is a very popular technology type for this model. Those aren't all identical, of course there's lots of variations between providers and between models, but most of the folks that use that terminology are talking about basically the same concepts. That everything I just described in the prior slide would, would apply to each of those models.

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One question that may be occurring to many of you, because we get this question a lot is sort of how is this different than a, than a traditional energy savings performance contract? And the answer is there are some similarities, but there are a lot of differences. In fact we get this question so much that we decided to just develop a fact sheet about it to try to demystify some of this. So there is a fact sheet now available on the, on the Better Buildings Solution

Center, called "The EaaS vs ESPC Fact Sheet," which you can also just Google if that's easier.

But just so summarize some of the differences. So energy performance contract or ESPCs typically the customer owns the actual equipment that's being installed, usually they're financing it through a loan or a lease and so it's typically considered to be on-balance sheet customer owned. Whereas with efficiency-as-a-service as we discussed the service provider that owns the equipment and is typically considered off-balance sheet for that reason.

In terms of the project size and contract length energy performance contracting the ESPCs have historically been more tailored to larger-scale projects with longer-term contracts, so 10 to 20 years, \$1 million-plus contracts.

Efficiency-as-a-service can provide those types of services as well and does in a lot of cases, but it can also do smaller or more like single-measure projects, like a \$50,000.00 LED upgrade for example, which is less common to see the ESPCs doing.

You occasionally will see efficiency-as-a-service deals as small as \$25,000.00 or less, although it's still pretty uncommon to go that low. So a little bit more flexibility in contract terms and size.

In terms of the, the most common sectors where you see these options used they're actually almost exactly polar-opposites of each other. So energy performance contracting has historically been more common in federal government and MUSH, so municipalities, universities, schools, and hospitals, because they offer kind of large-scale opportunities over long periods of time, but it is growing increasingly in the commercial space as you might have heard on the Five Trends presentation yesterday.

Efficiency-as-a-service is almost exactly the opposite. So it's most common in private sectors, things like commercial, a little bit of higher education and healthcare, but it is increasingly growing in the MUSH market and government markets as well.

So great to see folks from a nice smattering of all of those sectors on the call today.

And in terms of standardization energy performance contracts have been around for a long time and there's a lot of guidance that's been

released at the federal level and elsewhere to help kind of standardize the way that these contracts are setup.

Efficiency-as-a-service not exactly the new kid on the block. I mean it's been around for like more than a decade at this point, but it certainly has less standardization and a much broader diversity of providers offering all kinds of different takes, as evidenced by the eight different names for it that we saw on that slide a couple of slides ago.

So if you go to the, the next slide here.

I want to talk a little bit about the market trends in efficiency-as-a-service. Generally the consensus is that it is growing and quite rapidly and has pretty significant potential for future growth as well. The Navigant is one of the research shops that studies this pretty closely and releases a market study every now and again. This is from a study they released in 2017 looking at the potential for global energy-as-a-service market. So it's not just efficiency, this includes things like power purchase agreements for example. But efficiency-as-a-service is a good chunk of this most likely and they're anticipating it could be as much as a \$200 billion a year global market by 2026.

So there has been a lot of historical growth, a lot of potential future growth. Most folks seem to agree. That is sort of corroborated anecdotally by what the Better Buildings Financial Allies has seen. So all of the allies in our network, again there's about 50 folks, maybe more than half of which do some sort of efficiency-as-a-service arrangements, they have collectively reported about 2.5x increase in the amount of deals that they've done since they've joined the program, so there's significant growth happening, that's a 2.5x increase in the annual deals I should say. So likely to see continued growth in this area as we are in other areas that has the service.

If you go to the next slide.

This is my last slide before we get to the presentations. The growth of efficiency-as-a-service has led to what could only be really called a Cambrian explosion of contract options when it comes to how you actually set these contracts up. In fact there's, there's many different ways to setup an efficiency-as-a-service contracts. Every provider does it a little bit differently.

And to try to kind of demystify some of that, over the last year in consultation with Lawrence Berkeley National Labs and several of our financial allies the Department of Energy has done some interviews with providers and tried to kind of standardize what are the different options for structuring efficiency-as-a-service contract? You can think of it like a menu of options where you're picking one item from each course essentially on this, on this diagram. So I don't want to belabor this too much, but generally speaking you can see how much diversity there is here. There's diversity in how the loan or the financing is secured on the equipment, be it lien on equipment or lien on the property.

There's different definitions of services. So it can be a shared savings model, where the customer and the provider split the savings. It can be a dollars-per-kilowatt, where the customer is paying a certain number of cents for kilowatt-hour saved essentially. It can be defined as a delivery of a certain energy service, it's not savings, it could be like keeping the lights on for a certain number of operating hours a year or providing a certain number of lumens to a space, that kind of thing. There's all kinds of flexibility in, in how the savings are, are measured and verified, if at all and what the end-of-term options are.

So I am happy to say that this sort of menu of options, along with kind of an accompanying fact sheet is going to be released later this year and will be available to everybody on the Solution Center if you want to use this as a way to be to become sort of a smarter, more-informed consumer of, of this type of, of financing.

So that's all I had for introductory remarks. Feel free to let me know if you have questions in Slido and we can definitely answer some general questions, as well as questions specifically for Aaron and Julia.

No if you'll go to the next slide.

I want to introduce Julia. So Julia is a partnership executive at Redaptive. They're based in San Francisco and they were a Gold Achiever in Better Buildings, the Better Buildings Challenge, so congratulations for that. They offer their services nationwide. So she has a short presentation that's kind of an overview of Redaptive and their specific approach to efficiency-as-a-service. Julia, hand it to you.

Julia Berg:

Great, thanks Joe and I just want to thank the Better Buildings team. I've been at Redaptive for about 3 years, but been in the

industry clean tech sector for about 12 and you guys have just done a phenomenal job growing the platform and engaging a lot of companies in it and, and service providers. So both Joe and Kyle we really appreciate your efforts.

Everyone it's great to meet you. I'm Julia Berg and I'm the partnership executive at Redaptive and yes we are an efficiency-as-a-service provider. Our platform is designed to address the outsized waste and extra spend that exists and is rampant throughout distributed real estate portfolios. So we do so by providing a turnkey platform mostly to the C&I, commercial industrial sector for deploying demand reduction and behind-the-meter solutions at scale across customer sites to reach specified enterprise level outcomes, whether they be sustainability or office reduction and some other outcomes that customers are really looking to achieve through our platform.

So if you'll go to the next slide.

I'm going to provide a high-level overview of who Redaptive is and what we are as a company, efficiency-as-a-service and why customers are buying it; the value of achieving scale and why we think that's a differentiator in the marketplace; go through the transparency and performance monitoring solution that we offer; and then discuss a case study which explains why adoption at scale is really important for achieving specific sustainability and portfolio optimization metrics.

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So you probably recognize some of these companies. We focus on the Fortune 500 and mostly the C&I sector, so retail, industrial, manufacturing. We do do some work in healthcare and some in higher ed. But we're, we're focusing on those enterprise-level customers where we can drive results across the portfolio.

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And our journey started in 2013 when we actually were providing efficiency-as-a-service to AT&T and we really designed our program for a lighting rollout with the energy managers at AT&T. And to support our further market penetration by bringing more customers onboard we've been raising capital throughout our 8-years journey and have now deployed over \$400 million toward efficiency programs throughout our customer portfolio. We've also added a lot of different solutions onto our platforms. So we don't

just do lighting anymore, we do HVAC, we're developing solutions for behind-the-meter technologies as well. So we're really excited about the growth that we've seen

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So you asked: Why does a customer need a third-party provider to address some of the challenges with deploying efficiency across their portfolio? We see this is about a five-pronged challenge for our customers that are looking to really get more optimization and efficiency throughout their sites.

First, there's a lack of technical expertise throughout the company. So often you know companies might not have a specific energy management or facilities management team that would know how to design and develop a program that can effectively and efficiently reach the sites across their portfolio. Oftentimes enterprise C&I customers are buying and selling sites, breaking and entering leases all the time and so there's a lot of development and design work that goes into these types of programs.

There's also historically been a lack of awareness at the C-suite level. So we've seen a lot of momentum lately in science-based targets and net-zero energy goals, but until the past you know 12 months or so we haven't seen the same type of momentum for net-zero carbon reduction and electrification. So there has been a bit of a lack of awareness for not only why customers need to move towards decarbonization, but also what the value and economic value proposition is behind efficiency.

Obviously, a lack of funding is a key challenge when executing these projects and then there's also payback or ROI / hurdle rates that customers have to achieve. And Redaptive's platform works to can cross-collateralize or bundle both sites level economics with technologies to manage toward a specific payback and so that's a pretty unique aspect of our platform.

Then there's also often a lot of uncertainty in performance in savings. We've developed a circuit-level meter that goes directly into the panel to measure the savings that is being accrued on an asset level.

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So how do we do it? Well we have again a turnkey approach just as Aaron will speak to about how Allumia approaches. We have a

similar approach to going in and delivering this as a service platform. But we basically provide the upfront capital, the program design, and delivery resources and like I mentioned the M&V, the performance monitoring and measurement behind each of the technologies that we deploy. So that turnkey platform really helps customers achieve scale.

We believe that unless you have that full solution set to reach across customer facilities, engage key stakeholders and design a value proposition for these programs scale is a lot harder to achieve.

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So this next slide coming up here it explains why eliminating the capital and resource constraints that customers see to rapidly capture the value of inefficiencies is often a challenge when deploying at scale. So this graphic is an illustrative example of a customer's portfolio and the variable energy use across it.

Now in the Capex Program they're targeting 28 sites. Now what Redaptive can do with that existing Capex Program is take a few example sites and kind of create an extrapolated out approach for let's say 314 sites across their portfolio. We figure out how much that would cost to deploy at scale and then we use benchmarking data and our internal modeling capabilities to identify how much savings might be captured through a scaled program at an accelerating rate. Oftentimes we can get a whole portfolio of sites done between 12 and 18 months. That's just a rapidly faster accelerated rate than customers are used to doing on their own. Then we're able to harvest more savings faster at an at-scale and customers see a lot of value in that.

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So the transparency and performance monitoring component of our platform is also a key differentiator. When we talk to customers there's often sort of a black box with efficiency. You know it's a very challenging M&V proposition, but Redaptive has worked to commercialize the process not only by developing this kind of circuit-level meter that's low cost and fits directly into the electrical panel and can isolate the performance of each asset, but also developing to get the ability to integrate with other buildings systems through an API structure.

We also add that contract flexibility to our solution so that customers feel comfortable around the terms that we enter into the program with and the performance out if you will within the contract, because it is an added service and we want to make sure the customers are extremely comfortable with how the assets are performing within their building.

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So this is a case study of a Fortune 25 banking client of ours. We deployed an HVAC optimization program across their Northeast portfolio of retail sites. As you see here we hit 234 retail banking sites in the portfolio and addressed nearly 600 HVAC assets with a replace retrofit and control program. We were able to do this all under the umbrella of our efficiency-as-a-service contract.

One of the key value propositions is that they are able to eradicate R-22, the refrigerant that was banned at the beginning of last year from the portfolio. And that helped them get comfortable with the platform and the value that we're bringing, because it netted out a lot of the potential maintenance risks that they were seeing because of the refrigerant being banned from the portfolio, it's also a huge contribution to their carbon emissions. So we were able to calculate how much savings reacting from eradicating the refrigerant.

Then we also embed this flexibility into our contracts. They're a bank, right, so why would they use someone else's capital to invest in their own sites? That seems silly. But what they really like about our platform is that when they do want to inject capital into the contract, into the program, they're able to buy down or buyout sites and they don't incur an interest expense deduction.

So it's really a program that can apply to customers that even think that they have the capital, they may have budget set aside, but it's more prudent to go with a third-party provide that can achieve the results that they're looking for and that can do it in a programmatic scale approach.

I believe that's all I got for today. So it's wonderful to be able to present to all of you and really looking forward to Aaron's presentation how Allumia addresses a different target market and I'll hand it over to Joe.

Joe Indvik:

Awesome, thanks Julia. I see like some truly outstanding questions coming in, actually these are really astute questions so we're going

to save as much time as we can to get to those. We're going to hear a lot more from Julia here once we get to the discussion portion.

To introduce Aaron. So he's a founding member and CEO of Allumia. They actually have a lot of things in common with Redaptive. They're based on the West Coast. They joined the Financial Allies Program in 2018 and they're also a Gold Achiever in the program. Congratulations to Allumia. I'll let Aaron take it for here and introduce Allumia further.

Aaron Block:

Awesome, thanks Joe, I really appreciate it. And yeah just an absolute joy to hear Julia's download on, on Redaptive, just because I think that they're doing so much right and they're doing so much cool work. I see a lot of the things that we're excited about going on there as well.

My slides don't talk a whole lot about Allumia and what it is that we're doing, so much as the things that I feel strongly about in the world of efficiency-as-a-service, so quickly high-level about Allumia, Allumia as efficiency-as-a-service provider. We've been around since 2015. We have a nationwide presence. We think about things and we operate in a very similar structure to Redaptive.

Our focus is more on what I would call the "mid-scale C&I" customer base. So Joe was talking at the top about the range of, of projects that, that efficiency-as-a-service is a fit for and Allumia's playground in the areas are deals that are about \$35,000.00 in size up to about \$10 million in size. Occasionally we'll go up above that for somebody who's sort of particularly interested in our brand of efficiency-as-a-service. But I actually think that we dovetail pretty well with providing a similar style of service to a slightly different customer base to Redaptive. So we're as Redaptive as is really focused on you know that Fortune 500 distributed campus deployment where they're putting you know \$50-, \$100-million to work at once, we're, we're really focused on making it possible to bring that same solution down to anywhere from your local grocery store to you know mid-side REITs, sometimes playing in that MUSH market, but again sort of focused on a slightly smaller customer.

Yeah I'll just talk a little bit about what it is that we think it really means to efficiency-as-a-service. As Joe was showing there's, there's a ton of different names for, for similar things and there's sort of that menu of options. And one of the reasons...

Yeah was can get there, what is, what is efficiency-as-a-service to Allumia and what is efficiency-as-a-service to everybody really? One of the things I think that the, the term "efficiency-as-a-service" had gained as much traction as it has recently without really coalescing around one concept is that, that accounting treatment that Joe was alluding too, that sort of off-balance sheet treatment. That is very appealing at least to a lot of people vending this kind of thing. It's not always super important to the people buying it.

And if you call it as-a-service it is more easy to make the case that you are an off-balance sheet treatment. But that is very often where the similarities stop. So things that, that are calling themselves "as-a-service" range from sort of rental agreements, subscription agreements, managed services agreements. What Allumia does, what Redaptive does to me falls a little bit more into what I consider to be a true service agreement.

And so if you can advance the slide.

We're, we're here talking about finance. This is part of the Better Buildings finance community and conversation, but efficiency-as-a-service to me is a lot more than just finance. Efficiency-as-a-service is about delivering simplicity, delivering energy efficiency easily to the end user. Finance is one piece of that. It is, it is, it is a symptom of the overall problem, which is that, that energy efficiency projects aren't getting done. It is the cough on COVID. It is not the underlying issue.

The underlying issue to me is complexity. As Joe was alluding to again at the top the, the arch of economic history is, is towards specialization, it's towards expertise. The reason that we can have this Zoom conversation as a group of 200-some people is because we aren't all out individually farming and threshing our own wheat and we aren't cobbling our own shoes. We can focus on doing the things that we do really well and we can build on what other people do really well.

And sort of the older model of doing building energy efficiency is that somebody, a utility or contractor, somebody will come to you and say, "Look you're in this building." You know Pacific Gas & Electric, Portland Gas & Electric, national grid, somebody will give you \$30,000.00 to try to become an energy efficiency expert for your own building. They'll provide you rebate if you're willing to take the time to try and figure out the HVAC upgrade, the LED lighting upgrade, the refrigeration upgrade. So why don't you take

time off from your job basically and try to figure that out? And that's just a ludicrous way to do business, right?

The, the right way for that to be is for the people who are energy experts to come in and say, "Look we're the energy experts. We'll design this for you, we'll manage it, we'll install it and we'll put our money where our mouth is, right? We will get paid based on the value that we're providing you so that you can focus on doing whatever it is that you do best." Maybe that's selling cabbages, maybe that's flipping hamburgers, maybe that's you know building and leasing space to GSA entities, whatever it is it's probably not figuring out the best high-efficiency HVAC unit to put on, on your bank as you know Redaptive was able to do for that, that Fortune 25 customer.

So you know really what efficiency-as-a-service is, is about is about enabling customers to focus on doing what it is that they do better than everyone else in the world, which is generally speaking not identifying energy efficiency upgrades.

So efficiency-as-a-service is about simplicity.

If you'll advance the slide.

You know it starts with a really simple customer experience. This is sort of how Allumia brands it's customer's experience is you as, as an end user you relax, we'll do the upgrade, you save. We handle everything from coming in identifying the energy conservation measures, designing the upgrade, managing the contractor doing the installation, handling a lifetime of O&M on that equipment.

You as the customer you pay nothing upfront. You just let us come in and do that upgrade. Then you pay only when your, your building is saving energy. Only when we can prove to you that there is a positive impact to your bottom line. And that to me is, is another really important piece of sort of what I call the, the "true service model" and it's what Redaptive does, it's what Allumia does. It is providing transparency into what those savings are. It's not saying, "Hey, it's just physics, trust us that an LED light is going to save you energy." It's, "We're going to install a revenue grade meter at the device or at the circuit level so we can show you in real time the value that you're actually receiving as a customer."

So if we can advance the slide just to double-click a little bit deeper into this.

It's really simple customer experience. Again, this is what efficiency-as-a-service provider should be bringing to you as a customer, right? It's, it's a no-cost upgrade. They're going to fund everything right off the bat and, and you're going to participate in the savings immediately, right? Generally speaking if you're Redaptive, if you're Allumia, if anybody there's a lead time between when you start construction and when your first bill is issued. Your customer's actually accruing savings that you're never billing them for. Again, because you're the expert as the service provider. It's your job to make sure that they're seeing positive value.

So you as a customer, if you're not the efficiency-as-a-service provider, you're really just sitting back and saying, "All right you've claimed to be the expert, show me the money" and you start saving immediately. The, the performance should be metered. Redaptive does it, we do it, there's a few other folks who are, are out there, but it's, it's not enough to say, "We're the energy expert you trust us about the savings. Believe me I've built a very advanced thermodynamic model or a huge excel set of spreadsheets or it's just physics, trust the math."

None of those are an acceptable answer for a true service agreement I think. The right answer is, "We'll measure exactly what we're doing for you. We'll show it to you. You don't have to trust us, look at the numbers."

Then the last piece that is I think very important to efficiency-as-a-service and I think most providers factor this in is the efficiency-as-a-service provider is responsible for the ongoing maintenance of that equipment for the duration of the contract, right? It's not just, "We're going to provide a loan so you can go out and pay for equipment that you're then responsible for," no you're providing a service, you're providing value to that customer.

And so holding onto that O&M cost, making it simple for the customer to ensure that they're just receiving savings, they're just receiving value. They shouldn't have to schedule you know somebody to come out and fix a broken HVAC motor. The service provider is that one neck to choke, which I know Julia thinks is not the most politically correct way to put it, but the customer should just have one, one person that they reach out to call to solve their problem you know just like any other service provider. The idea is a simple customer experience that isn't fractured, it's not divided a bunch, across a bunch of providers.

So we can advance the slide.

To dive a little bit deeper into the, the metering. I sort of got on this hobbyhorse on the last slide, so I won't go too much here. But again, it's about making it very, very easy for that customer to see and understand those savings.

You know Julia was talking about circuit-level metering. Allumia similarly believes that the value of that metering is very high and we've developed a revenue-grade meter of our own really focused on making it very easy, very simple to, to measure those impacts either at the circuit level or even at the individual device level and to do that in a way that provides the customer clarity and confidence in, in the value that they're receiving.

We talk about this. A lot of the work that Allumia does is through utilities actually, we provide them a white-label system so that they can offer efficiency-as-a-service. And when we're talking to those utilities we frame this as, "Your customers buy kilowatt hours from you and the way that they measure the kilowatt hours that they're buying from you is through this meter that you've installed at the edge of the, at the edge of the building envelope and this is just the next natural evolution of that, right. You've installed a meter you can measure exactly what the equipment is doing, what the value its providing is. It makes it easy for the customer to say, 'Look I don't have to be an expert in this space, I can focus on, on doing my job.' "

So I won't, I won't beat that horse anymore, but I think that metering is a very important piece of true efficiency-as-a-service.

If we'll advance to the next slide.

It gives way to a very simple payment structure and, and this is how Redaptive does it, this is how Allumia does it. It's a payment based on the savings that are generated. The dollars saved viewed at the meter is what determines what the customer pays every month.

So rather than saying, "Look we're going to do this upgrade for you. You're going to pay us a fixed amount every month. If you don't see the savings, come back to us and we'll give you a refund," that's sort of the traditional ESPC way of doing it, the ESCO way of doing it.

Efficiency-as-a-service and efficiency-as-a-service as Redaptive and Allumia provide it flips that on its head. It puts the burden of proof on the provider. It says, "Look we'll prove to you what your savings are and then you're going to pay me \$0.50, \$0.60 of every dollar that I can prove that I saved you. But if I can't prove that I saved you anything your bill is zero, right? I'm the energy expert. I'm going to put the burden of proof on myself. You will pay me after you've saved." Again, it's just designed towards making it very, very simple for the end customer.

So advance the slide again.

You know who does this work for?

Joe Indvik: One minute warning Aaron.

Aaron Block: One, one... I thought I was going to be done in 5 minutes, I apologize, I got really excited about this and started, started going hard.

Joe Indvik: All good.

Aaron Block: Efficiency-as-a-service works sort of for, for all sizes of customers. So Allumia's got customers ranging from the federal government, you know we've got some US Navy facilities, all the way down to your local YMCA, right. Again, the, the thing that all of these people have in common is that their business is not energy efficiency, they're business is running neighborhood programs in the case of the YMCA and you know staffing the world's largest military fleet in the case of the US Navy and, and their business, their job is, is not energy efficiency and so the as-a-service model enable them to, to move very easily.

Advance the slide again and I'll talk very quickly.

Why we're here, why we're all here is that there's just this massive missed opportunity in energy efficiency. Last year renewable development, battery storage, wind and solar combined to about \$50 billion of investment. Note that in that same period the commercial and industrial businesses that Julia and I serve wasted \$130 billion to inefficient, outdated systems.

So the free money that is out there to be claimed is huge, it's insane. The reason that people aren't claiming it is because again it's not their main focus of their business and that's where efficiency-as-a-service comes in is taking that off the table.

So last slide, we'll just advance real quick.

What I would advise you to look for in efficiency-as-a-service agreement you want a provider who's going to manage all the details for you. They're going to manage the contractors, they're going to manage the bidding processes, they're going to handle all the payments to those contractors. They're going to take on the performance risk. This is what I was talking about with the metering.

You should have long-term maintenance included in your, your program. They should be paying for the L&M. You should only pay them after you've received value. It should be very easy for you understand the value. I think that metered savings are better than modeled savings, but at the very least there should be very clear expectations set at the beginning about what you as a customer are going to receive.

Then I think you should evaluate the accounting treatment. Again, this is in no way accounting advice. Your CPA is going to have to make the final decision, but efficiency-as-a-service is setup all of us sort of generally agree, the intention is for it to be an off-balance sheet transactions and that's valuable because it doesn't encumber your, your balance sheet, it doesn't impact your credit score, it's just very simple and easy.

But at the end of the day the one thing that I would encourage you to focus on about all else is with efficiency-as-a-service you're buying outcomes, not inputs, you're buying savings and not light bulbs, not HVAC motors. You want results and efficiency-as-a-service lets you get results while focusing on doing what you do best.

That's all I got.

Joe Indvik:

Awesome, thanks Aaron, that was great. So we're going to do about a 15-minute kind of fireside chat here. I've got some questions prepared to dive deeper into their models and really understand how efficiency-as-a-service works with Redaptive and Allumia in practice. Then we'll have sort of around 3:00 Eastern, we'll have about 15 minutes for audience Q&A as well.

A lot of good questions still coming in. Keep asking questions in Slido and keep up-loading the ones that you like and we should be able to get to 5 or 6 of those when we do that at 3:00.

So a couple of questions for you guys just to understand more about how, how this works and most of our audience is building owners and operators who are probably interested in this primarily as perspective customers. How do you, how do you go about finding customers for efficiency-as-a-service? Like who comes to you? Is it the C-suites at the organizations you work with, is it through contractors, like how do you, how do you get these relationships in the first place?

Whoever would like to take that first feel free.

Julia Berg:

I'll jump on that. So Redaptive has a channel sales model and as a partnership executive I work directly with our partners to train them up on how to present efficiency-as-a-service as an option for scaling their projects. The partners kind of come in a variety of different forms, facilities management, companies like CBRE who led our series B round. We work with sustainability solutions providers, we work with developers who may have been doing 10, 15, 20 sites a year for certain customers and they really want to blow it out of the water and do a scaled program. Those are the types of channel partners we work with.

Aaron Block:

Cool, yeah and our, our model is I would say it's a little bit of a barbell model. We, we don't do a lot of the sort of partnership work that, that Julia and Redaptive do. We do a lot of sort of direct-to-customer work, either they reach out to us, more often than not they reach out to us because they're, they're looking for a solution of this type. That can be anything from you know REITs to you know fast-food franchisees, to school districts, or just you know commercial office building owners or we're out there dialing-for-dollars out there talking to, to customers, particularly in markets where we know that sustainability is a big driver. We're based in Seattle obviously, which is a pretty sustainably oriented city.

The other way that we engage with customers is through our utility platform. So we do work with a handful of utilities to provide them the ability to sort of white label efficiency-as-a-service and take that out to their customers. That might be a little bit more parallel to sort of you know Julia's CBRE relationship, where CBRE already had this massive network of, probably the largest in the world network of, of commercial buildings that they manage and they can provide this sort of complete solution.

Within the customer organization we tend to work with two, two distinct entities or two, two distinct you know types of customers,

types of person within the customer entity which is generally somebody on the finance arm, CFO, whoever is, is ultimately responsible for the P&L of the business and then almost always somebody from the facility's group.

Again, you know the facility's team is responsible for making sure that everybody in that building is able to see what they're doing and they're comfortable, there's cool air, the groceries are refrigerated. They're spread thin, they're doing a million things at once and so this is just a way for them to sort of lever their time for a small fire if you will. "All right have I identified that this needs to get done? Here's an easy way to get all of it done and you know there's no cash out-of-pocket for my CFO, so I'm confident I can get it done."

Julia Berg: Yes, shameless plug, Redaptive is no stranger for dialing-for-dollars either. So if there are any interested parties in the audience feel free to reach out. We do do some referral, partner with networks as well. And just as Aaron had suggested about Allumia, our internal customers are typically facility's directors, energy managers, sustainability leads throughout the organization.

Joe Indvik: Got it, okay, I was just going to ask you that.

So maybe for Julia first on this one. What's the sort of hardest question you typically get from a customer as part of the sales process?

Julia Berg: We typically get the question around do we guarantee savings? And our answer is that we guarantee performance of the asset in that as Aaron suggested we provide the maintenance on the assets that we own when we deploy them. But customers are burned from this savings guarantees that you get in performance contracting and we go the transparency route. We say, "We will measure the savings that we produce through our system and bill against those savings."

Joe Indvik: And Aaron how about you in terms of hardest and challenging question?

Aaron Block: I would say that's, that's probably up there, which is the, "Are you are you guaranteeing the savings and how are you guaranteeing." And what we say, "We aren't going to guarantee the savings, but we guarantee that we will only bill you a portion of whatever those savings are. We guarantee that you'll be revenue positive."

And the other – yeah I think the other hardest thing that we're up against I have never really encountered the question they're like, "Ach this, this sounds important but it's, it's not urgent. You know Trevor got his arm stuck in the conveyor belt and I've got OSHA coming to the office tomorrow and that's the most important thing for me." Again, that comes back to this simplicity thing, but it's just sort of getting the attention, getting the buy-in. Our customers are spread real thin.

Julia Berg: [crosstalk] Aaron.

Joe Indvik: All right, poor Trevor.

So kind of corollary to that question, what's a question you wish customers would ask more or that you think they should be asking more aggressively as part of the, the sales process? Maybe we could start with Aaron on that one and then go to Julia.

Aaron Block: Oh man, usually what I – at the end of any sort sales conversation I, I say that the question that they should have asked is, "What question should I have asked?" But I think what I would like to, to have customers ask is, is, "Tell me about how you prove the savings. Tell me about this metering process, what's going on there."

I think very often what they ask is, "What's the cost of capital?" "Is it off-balance sheets?" And all those things are, are important, but like really the differentiator is like, "How are you making this easy and risk free for me?" And I think that that's what I would like to see customers focusing on.

Obviously the, the question I really want them to ask is, "How soon can you start?" But other than that question.

Joe Indvik: And Julia?

Julia Berg: The question I, I wish people asked and really focused on are, "How do I present this to my leadership team in a way that hits all the parameters around the economic value proposition that they need to see to really advocate for the program internally?" That's the hardest part is getting the attention of the leadership or the C-suite and explaining to them why it makes sense to deploy faster and why you should focus on your whole portfolio, as opposed to having a site-by-site process that is encumbered by budget cycles, approval processes, Trevor getting stuck in a conveyor belt, all

these things. Like you just want to eliminate all the red tape and have it managed externally by their parties.

Joe Indvik:

So speaking of that and I've got a couple of questions about this too, right, like what it says about efficiency-as-a-service on the tin sounds a little bit about too good to be true. Like it's no money down, Allumia/Redaptive bears all of the performance risk, you don't have to own the equipment, we're moving all of the complexity off your plate to us, and oh by the way you only pay when you save. Do you ever get a reaction like, "That sounds too good to be true," or "Like how..." People who are sort of incredulous that that could ever actually be profitable and there must be some catch. Like how do you... Does that ever come up and how do you respond to that?

Julia Berg:

Yeah, we, we get that a lot. I have like a love-hate relationship with that phrase, because in one hand it says okay the person gets it. They understand the key value proposition and it's kind of like an ah-hah moment. But then you realize, "Okay, we've got a long way to go," because it's not too good to be true. It's a lot of work to work with Redaptive and Allumia to move the concept up the chain through the approval process. Now we can get it done in a 120 days, but we've got to have an internal champion and partner and that's, that's the moment when I know that there's a little bit more education on the sales cycle and the process internally.

Aaron Block:

Yeah I think we, we get that question all the time or that comment all the time, "It sounds too good to be true." And even before Allumia I was doing sort of solar-as-a-service as a, as a spin on, on solar PPAs you know back in the heady early days of solar finance and we're getting the same, the same question then.

And it's not too good to be true. I'm not running this as a charity. The impact is important to me, but I'm making money off of these deals. I'm not going to hide that from you. It's just that like the transaction... The reason it's not too good to be true is because what we've done is consolidated all of the transactions costs into one stakeholder, which is Allumia and, and the fact is that the reason that that money is there, the reason that it's viable is because we've done that consolidation for you. If you try to do it across a gazillion stakeholders the cost just explode both monetarily and opportunity wise.

So it's, it's there's no like hidden fees, there's no tricks, there's no magic. It's just like sitting down and doing the work is, is all that's really going on there.

Julia Berg: Right, that's so true.

Joe Indvik: Gotcha, yep and the fact that the economics on energy efficiency are just so good there's like there's a lot of margin to work with, right? Like people are sometimes incredulous if you get a 2-year payback on LEDs.

Aaron Block: Well so I, I would provide some, I would offer some pushback there, which is that we go talk to a, a large number of customers or we're brought in to talk to a large number of customers where they've been told that their project has an 18-month payback or a 6-month payback or 2-year payback.

And we come in and we offer them a 5-year service contract and they say, "Hey, I thought this thing had you know a tremendous, tremendous value. You know a really short payback." And the reality is like it would if the assumptions that the person who gave you that bid were true, but you know in the world of lighting a 32 watt TA doesn't consume 32 watts, it consumes 28 and it's literally impossible for your building to be operating 9,000 hours a year, because there aren't 9,000 hours in a year. The numbers just aren't there.

So that's again sort of like one of the values of having somebody come in with an efficiency-as-a-service agreement. There's just a lot of sort of unknown unknowns if this isn't your world, right? Knowing how much a lightbulb actually consumes based on its name plate. Knowing what you can expect you know a grocery store that's listed operating 16-hours a day, how many hours of that thing actually operating?

When you've done a hundred of them as we have like it's pretty easy to, to know that. If you don't, if you've just sort of got one it's easy to sort of get swept up into somebody else's stated assumptions and the values aren't aligned there. With a metered efficiency-as-a-service agreement those values are aligned, right? We can't tell you that we're going to save you on lighting 9,000 hours a year, because our meter is never going to show that. Yeah, and so again that, that value alignment, that simplicity is just like so, so important.

Joe Indvik: Great. Well sort of transitioning out of kind of customer relationships and how that works to the technologies. So getting a little bit more into the technical details here. Julia, maybe starting with you. I know Redaptive started with lighting and then has kind

of transitioned into other technologies as you've gotten more comfortable with that risk presumably. What do you see the future – well first of all like what, what does it take for Redaptive to get comfortable with a particular technology type to be sort of brought into the fold of your model and what do you see as the future? You know what are technologies that it can't currently serve but that you hope it will in the next 5 or 10 years?

Julia Berg:

Yeah, so Redaptive started with lighting and we grew our platform to include HVAC. We've done large-scale commissioning deployment across the central offices of AT&T for that program. It took an internal champion that had developed it themselves and actually written the code to optimize their BMS system and knew where the kind of bodies were buried in terms of needing for repairs. So because of that experience we've been brought on our own BMS and commissioning expert and so that we can scale that out to other partners.

So to answer your question about what it takes. Often it takes the customer bringing us in to a solution that they've partially have fully baked themselves and we call it either we act as the enabler. Then we've also developed our R-22 offering. We're offering that often is sold through this needs to eradicate R-22 or just get new rooftop units onto buildings because it's not a priority as Aaron's mentioned before and customer you know if they're failing at a rapid rate, they're out of portfolio, that really runs up the reactive maintenance expense.

So to make the economic work on HVAC we've brought in maintenance savings as a work stream and we've developed, sorry, a savings stream and we've developed a process around underwriting and getting comfortable with those savings through work orders system data and working with the facility's management team of customers.

We've also developed a plug load solution, which can be applied to commercial office space. Then we're developing behind-the-meter and distributing energy resource solutions. We know customers are looking to fully decarbonizes and that includes supply, so we're evaluating several solar and battery storage opportunities right now.

Technologies that I think would be interesting to bring onto the platform in the future would be heat pumps. I think that that, those are going to play a big role in electrification. I would love to do some – I, I saw a question about grid interaction, I'd love to do

some demand management and take credit for demand reduction. Right now we use a blended rate, but if we could do some sort of time-of-use arbitrage and take credit for that in the future through controls I think that would be next level in terms of our products right now.

Joe Indvik: That's great. Yeah, Aaron same any quick thoughts on technologies for you guys?

Aaron Block: Yeah, like Redaptive we started in lighting. I think probably we started in lighting both of us for the same reason it's, it's you know a great economic payback, but it's also the easiest one to meter. Since then we've expanded into HVAC and refrigeration. This year we will hopefully be deploying in the electrification space about fuel switching to heat pumps is the big one, but also vehicle electrification, so EVs and EV charging, other things on the roadmap, building automation, building management systems, and motor controls. So you know largely that's a grid interactivity, demand response, demand management is, is big on the roadmap. But I think you know near term for us is lighting, HVAC, refrigeration, and electrification, EV charge and fuel switching.

Joe Indvik: Okay, well I could grill you guys all day with my questions because it's a lot of fun to –

Aaron Block: I've got something that I want to throw in there.

Joe Indvik: Oh yeah sure.

Aaron Block: Just because it would be good to hear Julia's response on this as well, which is for us you know the world that we're limited to or that we've limited ourselves to are obviously the technology has to actually exist and work and have the paybacks that we expect it too, but the other one is that we're, we're really focused I guess on what I would call "active energy measures." So you've got to actually be able to meter the device at the circuit, so we have not, we don't have any plans to do insulation or windows, building envelope, stuff that's sort of by definition you have to model rather than meter.

Julia Berg: Mm-hmm.

Aaron Block: And I don't know sort of where Redaptive comes down on that.

Julia Berg: We have looked at whole building and full building metering as a way to capture that building envelope kind of demand or energy

savings reduction. Right now we still focus on isolating the asset, but I, I would see that could potentially be on our roadmap in the future. Right now though we, we have very much an asset specific model.

Joe Indvik: Yeah, it's a great point Aaron. So I want to... That was an awesome discussion. I'm going to transition over to audience Q&A now. So we have another, about 15 minutes here. So again a lot of good questions on Slido. Keep entering and up-voting questions on there. Again, #DOE is the, is the code for event and it's Anatomy of Efficiency-as-a-service as the session title.

So a couple of – actually you guys talked to both a little bit about decarbonization and I see a good question here about from Eric says: Curious of efficiency-as-a-service can be used to get at some of the much more difficult, complex, and costly initiatives, things like full-building decarbonization or, or electrification of a college campus. Yeah, how, how does that work? I mean is there a way you can sort of bundle the, for the payback projects with a better payback projects and are you guys yet at a point where you could, your model could be used to sort of fully decarbonizes a, a building?

Julia Berg: Yeah so we have a case study on this I can explain. It's with the Institute of Advanced Studies and they were looking for a net-zero carbon microgrid solution. So they ripped their old boilers and we put in a geothermal system that would contribute to a net-zero carbon campus. Then eventually we also retrofitted their lights and eventually will add solar and storage to the facility. The intent was to become net-zero carbon and we did that through an as-a-service model because of the savings that were accrued.

It was a bit of a longer term obviously, big mechanical systems and a lot of, a lot of microgrid tech work going in, but we can offer that through a team that we now call "Campus" and it will focus on those kind of large sites projects and often we couple that with pace financing, which is kind of a side offering that we have developed in connection with our efficiency-as-a-service platform.

Aaron Block: Yeah I, I would say you know I think certainly we want to contribute as much as we can to, to total decarbonization and, and we do that and are looking to do that through active systems, generation, demand side management.

I'd say the question here is sort of touches sort of exactly on, on some of those passive measures you know that have the 20-year

payback that triple-glazed windows do. It's not a, it's not a place where we play and you know even from Julia's answer you know it ends to involve a slightly different set of transactions structures. It seems like it fits within the, the Redaptive envelope, but it's not necessarily as-a-service, in that case it's pace.

I think another good sort of up-and-coming solution that might be worth looking at there is, is the MEETS work. It's just that it relies a little bit more on modeling, forecasting, traditional finance, but it's a little lesser of the active metering that we view at least as sort of the efficiency-as-a-service.

And yeah I mean you know folks like Engie who bought Ohio State's complete physical plant and just said you know, "We'll sell you physical plant as a service over the next 50 years. Here's a billion dollars." [Chuckles]

Joe Indvik: Yeah.

Aaron Block: Yeah.

Joe Indvik: That's a super interesting transaction to look at if anybody's interested, Engie and Ohio State right Aaron?

Aaron Block: Yeah.

Joe Indvik: Yeah. Lost my train of thought there. Oh it will come back. Anyway a couple of other good questions here. So one is how savings are determined. So you all say you only pay when you save. Can you talk more about how you actually – like get a little bit nerdy with us for a second here in terms of how you actually measure that and, and how you set your baseline in particular?

Aaron Block: Yeah. Can I go first on this one Julia?

Julia Berg: Yeah, go for it.

Aaron Block: So, so we try to eliminate baselines as much as possible. So we – and that's, that's with a meter. One of the things with the meter is they're for... Because we know that over the course of a 5-year or 7-year or 15-year customer relationship their behaviors are going to change. Their usage of the facility is going to change. So we come in and we basically so the baselining that we do is, "What's the name plate capacity of the, the device that we're upgrading?" Because it's really easy to think about this lighting.

So you assume I'm in a room that's got 10 lights in it. Originally, when we came in to do the upgrade they all had 100-watt lightbulbs in those fixtures. We upgraded those to some sort of LED and we installed our meter at the circuit level.

Joe Indvik: Those lights look a little bigger than 100 watts there, Aaron.

Aaron Block: Well you know they're LED.

Joe Indvik: Off to your top-left yeah.

Aaron Block: Oh yeah that, that 1500 watt over there. But so you know we do that upgrade, we install the meter. Then we come in and we can say, "All right today, Wednesday, April 23rd, whatever today is, the lights in that room were on for 10 hours. We know that originally there were 10 100-watt lights in that room and so over 10 hours we know you would have consumed 10 kilowatt hours. We actually observed that you consumed 1 kilowatt hour, which is consistent with them being 10-watt lights, which is what we installed. So we know that we saved you 9 kilowatt hours. Tomorrow on Thursday maybe the lights are only on for 5 hours, so you only – you would have consumed 5 kilowatt hours, you actually consumed half-a-kilowatt hour. Your savings is 4-1/2 and we bill you on that."

So we track the actual behavior of the customer. For some customers it's sort of – it, it varies and we're leaning more into actually something that we picked up from Redaptive a little while ago is you know if you want to lean into expertise our customers are the experts in their building behavior and their building operations and so we say, "All right you in order to make this as cost effective for you as possible you tell us what your minimum operation is. So you, if you tell me that you're going to occupy this building a 100 hours a year or a 100 hours a week I'm going to ask that you guarantee that you occupy it at least 70. And if you're occupying it less than 70 I, I'm just going to bill you as if you were at 70 and that lets me drive down the cost of capital."

So as long as you're within the realm of what you assume is reasonable you're going to come out ahead. If for some reason you shutdown this facility for 3 months a year you're going to pay a little bit more out-of-pocket, but you're the expert on whether or not that's gonna happen.

Joe Indvik: Great and Julia?

Julia Berg: So we agree that there is sort of a fine line between M&V and the granularity. So we also take the advantage point that there is some customer assumed risk in terms of M&V. We, we iron that out with customer ahead of time. If they drastically change their occupancy or they drastically change the leases or you know ownership of their building then that is a customer-assumed risk that we have in our contract.

But for lighting we do take a baseline. We take burn hours into account. We measure the consumption of those circuits that the lighting systems are attached to and we provide that in a transparent dashboard, that's pretty cut and dry.

Then for other technologies we work with the customer to identify whether we're going to use IB option B or C and we look through what granularity they're interested in in terms of getting those circuits metered. So if they're interested in a representative sample across sites that look and kind of smell like each other then we'll do that. If they want to pay for the Cadillac approach of metering every circuit across their portfolio then we do that and show the M&V process in our, our platform.

But we like to talk through the necessity of that granularity at the asset level for every single building and identify where customers feel that the, the importance of M&V lies and then we work commercially then to deploy it.

Joe Indvik: Okay, great.

Aaron Block: So Julia touched on something really interesting which may not be a question, but I think it's worth talking about, which is, what happens if a customer sells the building?

Julia Berg: Right.

Aaron Block: I mean –

Joe Indvik: Yeah, I was just going to ask about that actually, so go, yeah go for it. I assume you saw the same question, but the pro forma question was a really interesting one. This person was asking yeah: How could efficiency-as-a-service be incorporated into a value-add short-term commercial real estate investment? Any way it could get incorporated into the pro forma, but not burden the asset in a way that might complicate the subsequent sale?

Aaron Block: Yeah, so that's, that's a really good question. We actually work with a couple of REITs who, who have used our service specifically for that. Basically going in using a no-capital cost efficiency-as-a-service upgrade to without spending money out-of-pocket and improve the NOI of a building and you know with cap rights being what they are that's gets you a pretty big return when you turn around and, and resale that building.

And again you know in, in the order, in order to be as simple as possible for our customers and we've written our contracts as very easy to transfer to another customer provided that they're a credit-worthy customer, which often you know means that they have the capability to buy your facility from you for, for a market rate amount. That you aren't just you know handing it off to your brother-in-law at zero dollars so he can do something weird.

So it's very easy to transfer and then they just take over the service agreement. It's also a fairly simple termination you know if you just want to – somebody else wants to take the building free-and-clear. And at the time of building sale you know the total service payment, early termination fee that you would make is a rounding error relative to like selling your, your building or your fleet of buildings, so it's, it's never much of a hurdle. So yeah we again sort of oriented towards simplicity it's just really simple paperwork.

Joe Indvik: Cool, yeah that's a great example. Julia, you mentioned part of your presentation you work with a lot of portfolios that are constantly buying-and-selling assets and it's very, it's very liquid, so yeah same question for you: How do you sort of approach that or particularly interested at the portfolio approach though when you're working with you know a 400 property portfolio?

Julia Berg: Yeah, so in our model every site has its own contract with associated economics tied to it. So we do do investment-grade audits especially for HVAC at every site and those feed up into what we call the "NTP," which is our Notice to Proceed or/and our LOA, which is the final contract assigned to that site.

And if a customer decided to sell the building then they have the opportunity to pay down the remaining saved purchase contract with no further interest expense. Redaptive is just looking to be made whole on the funding that we drawdown from our debt facility to be able to pay for that site. So because we're able to pay off that debt in real time when a contract is paid off we do not incur an additional interest rate to the customer at that time either.

Joe Indvik:

Got it, okay. Well there's a lot of other good questions but I do have to wrap it up here, because we only have about 1 minute left and we need to wrap this up. So thank you guys for an awesome discussion.

These folks you'll see their e-mail here shortly at the end, so feel free to reach out to them for more questions on this.

So just to quickly wrap this up there. If we go back to the slide.

I want to highlight a couple of additional resources that are available, links to the navigator and to the efficiency-as-a-service versus ESPC fact sheet that we talked about.

Also want to show a short video about the Better Building Solutions Center, which has over 3,000 solutions to help you find proven and cost-effective strategies to reach energy, water, and waste reduction goals. So let's check out the video.

[Music]

There you go, hardhats, solar panels, and wind turbines, what more do you need?

So I want to go to the next slide here.

I also want to highlight the Better Buildings: Summer Webinar Series, which is starting in June. As you can see several different webinars here about financing and one about financing in higher education, one about energy performance contracts in the fast lane. So that's another good way to learn about the, the definitely not efficiency-as-a-service, but similar model that we talked about.

So partners are going to be discussing some of the most pressing issues that they're facing in, in energy and sustainability innovation.

So you can register for this on the Better Buildings Solutions Center, click on Events and Webinars to get you there.

And if you go to the final slide I just want to thank Julia and Aaron one more time. This was a really good conversation and you guys are doing good, awesome work. It's been a pleasure to, to know you over the years and to continue to watch what you all are doing.

We are going to launch a short feedback survey in Slido. So that's really helpful for us to understand whether this was useful. I'd particular be curious to hear if this more of an interview format was a useful way to explore some of these issues. And your answers are going to be totally invisible to other attendees, so we'd love to hear that feedback.

You can see the contact information for everybody here, feel free to reach out to any of us. If you want to learn anymore about the resources we talked about today check out the Better Buildings Solutions Center or just shoot me an e-mail at my contact information there.

So Aaron and Julia thank you very much and everybody enjoy the rest of the summit.

Julia Berg: Thanks so much Joe. Thanks Aaron.

Aaron Block: Thanks everyone.

[End of Audio]