

Joe Indvik:

Hello, everyone. I think we're ready to get started. My name's Joe Indvik. I'm the Head of Clean Energy Finance at RE Tech Advisors, and together with my colleague Holt Mountcastle, who's with us on the line today, I run the Financial Allies Network within the Better Buildings Challenge. I'd like to welcome you all to the April edition of the Better Buildings Webinar Series. In this series we profile the best practices of Better Buildings Challenge and Alliance Partners and other organizations working to improve energy efficiency in buildings. So today I'm very excited to say we're going to be discussing a topic that's near and dear to my heart, and that is energy-efficiency-as-a-service, a relatively new but increasingly-popular structure that's been used to implement energy efficiency projects ranging from multi-million-dollar retrofits across the portfolios of Fortune 500 companies to smaller-scale projects in stores, offices, schools, non-profits and many other building types. We're very lucky to have two of the leading efficiency-as-a-service providers with us today, as well as a very successful customer of efficiency-as-a-service, who has used this model to implement energy upgrades in their facilities. So we're going to get both the provider and the customer perspective today.

So before we get started, a quick logistical note. I want to remind you that we will do Q&A at the end of the hour, so please send in questions through the chat box on your webinar screen throughout the webinar and we'll try to get to as many of those as we can. If your question is for a specific speaker, please note that person in your question. And also, the session will be archived and posted to the web for your reference, so no need to take furious notes. Megan, if you'd go to the next slide? Before we jump in, I want to give a little high-level perspective on efficiency-as-a-service, particularly for those of you who are unfamiliar with this. So if you've never heard of efficiency-as-a-service before, the best way to think about this is as a new way to procure energy technologies for your facilities in which you pay for the energy savings and other services that that equipment provides without actually owning the equipment.

So I go to a lot of energy finance conferences and I would say that efficiency-as-a-service is one of the hottest topics at just about all of them, but also one of the most misunderstood topics. And I think there's a good reason for all of this interest. The as-a-service revolution, as some have called it, is in full swing across the economy. I mean think about all of the products that companies and consumers are using without actually owning them. So Spotify and Pandora, for example, provide music as a service, in which you can listen without purchasing. Software as a service, or SaaS, is

increasingly ubiquitous across nearly all sectors. In fact, if you're using your e-mail or doing anything else on this webinar, which I'm sure you're not, then you at this time are probably using some form of software as a service. We're moving towards transportation as a service as more consumers are choosing not to buy cars and instead using services like Uber and Lyft.

So clearly there's a fundamental transition underway here in certain parts of the economy, and it's not surprising if even inevitable that a similar model would be applied to energy technologies in buildings. Now I'll be the first to tell you that what we're talking about today is a far cry from Uber and Lyft, right? Hailing a car is very different from procuring LEDs and HVAC systems, and in fact Asher from Sparkfund is going to talk about some examples that are a little bit more comparable, specifically Xerox and Amazon Web Services. But the fact remains that organizations are increasingly finding it economically and operationally beneficial not to own the equipment that they use and benefit from in their properties, and I think that's really interesting.

We don't know exactly how many efficiency-as-a-service deals have been done, but we do know it's in the hundreds of millions of dollars, at least, and that it's rapidly growing. And because of that increased interest in this mechanism, the Department of Energy has put together an efficiency-as-a-service toolkit which highlights successful examples of this model being applied around the country and which we are very excited to unveil today. So I will now hand it over to my colleague, Holt, who is the mastermind behind that toolkit, and he's going to dive into the weeds on the specifics of how efficiency-as-a-service works, introduce the new toolkit and tee up the rest of our speakers as well. So Holt, please take it away.

Holt Mountcastle: All right. Thanks Joe, and hello, everyone. I just want to share a few slides at this stage before we get to our panelists. So first, what is efficiency-as-a-service? So efficiency-as-a-service is a pay-for-performance, off-balance sheet financing solution that allows customers to implement energy efficiency projects with no upfront capital expenditure. So it's based on one core premise. Rather than financing your _____ of the equipment – so getting a loan with an interest rate attached, efficiency-as-a-service allows you to pay a third party for the service of energy savings. So some of the key attributes of the model are third-party ownership of equipment – so much like a PPA for renewable energy, the customer doesn't actually own the equipment. Outsourced equipment installation, performance and maintenance. So it's truly a services contract and

in that the provider is typically responsible for many aspects of a project's success. Off-balance sheet treatment. So this does not constitute a _____, but most often the model is designed to be off of a company's balance sheet, which can be beneficial if it has a heavy debt load or debt limits in place. And it's a simple, repeatable structure. So we've often seen this model applied initially to a small number of buildings and then scaled up across portfolio. So our presenters will speak a little more to these attributes during their presentations.

Market information is a little sparse, as it's not centrally tracked. The Better Buildings Financial Allies have done a little over \$325 million in financing for efficiency-as-a-service, but the actual market is likely much larger than this, and the model is getting significant penetration across sectors. _____ Research actually released a report a few years ago in which they expect the energy-as-a-service market to reach \$221 billion by 2026. So while this is a little broader than what we're talking about here, it really underscores the potential for growth of the model. So next slide please.

So while efficiency-as-a-service is the most broad term for what we're talking about here, you'll also hear it called by many other names, like an ESA, which can either be defined as an energy services agreement or an efficiency services agreement. An energy subscription, a services contract, lighting-as-a-service and potentially others. So this is partly semantics, but partially because some of these models are actually a little different in practice, and oftentimes providers have different names for their offerings. So in a little while we'll hear about **Metrus** and Sparkfund's offerings, which are two different versions of the model, but both fall under the same umbrella of efficiency-as-a-service. So next slide.

So to help building owners in the general market better understand how efficiency-as-a-service works and to highlight some of the different flavors in use, we have developed the Efficiency-as-a-Service Toolkit, which you can find on the Better Buildings Solution Center at the link below or just searching for it on the site. So in the toolkit is an overview fact sheet where you can find more information about the model and how it works, and then a collection of case studies from our Better Buildings Financial Allies. So we have case studies from Allumia, Citi, Metrus, Redemptive and Sparkfund that all showcase how these companies have structured efficiency-as-a-service deals with a range of customers from large and small commercial office, healthcare, education and others, with project sizes ranging from tens of

millions of dollars to much smaller deal sizes. So we're really excited to share this with the market and I hope all of you can take a few minutes to go and check it out. So we understand that if you're new to the concept this can be a little confusing, so we hope that this toolkit can demystify how efficiency-as-a-service works so you can potentially take advantage of it in your facilities. So next slide.

All right, so I'm really excited to announce our upcoming panelists here. So first we have Bob Hinkle, president and CEO of Metrus Energy. Bob established Metrus in 2009 and created the efficiency services agreement that the company uses to finance large-scale efficiency retrofit projects. Bob has more than 20 years of experience in the energy industry and has developed and implemented large-scale energy projects – programs for utilities, energy end-users, government agencies and international donors. Then next up is Asher Burg. Asher is the chief revenue officer at Sparkfund, where he's responsible for Sparkfund's go-to-market strategy, sales and customer success. He has over 15 years of energy experience, having led leadership positions at Opower and PG&E. And then finally we have Rick Braam. So Rick joined the leadership team at Bristol Hospital as CFO in August of 2017. In his role as CFO, Rick has oversight of all accounting and finance functions, informational technology, revenue cycle and materials management. Rick has over 34 years of experience in the healthcare industry and is also an eight-year veteran of the United States Air Force. All right, so with that, Bob, take it away.

Bob Hinkle:

Great, well thanks, Holt, and thanks to the Better Buildings Challenge Program for the opportunity to speak here today. Metrus was one of the first Better Buildings Challenge partners back in 2011 when it was first started up and we're proud to see all that the program has accomplished over the years and happy to dig in and talk today about efficiency-as-a-service. Maybe going to the first slide? So just in terms of some quick background on Metrus, we are developer, financier and owner of large-scale energy and water efficiency retrofit projects. We target projects primarily in the private, commercial, industrial and manufacturing space, but also for major institutional customers, hospitals, higher education, and we're delivering efficiency-as-a-service through our efficiency service agreement or ESA, whereby we're funding 100 percent of the upfront cost of a project. We do that in part with our own equity and in part with outside debt. We work with a range of different debt providers to get to that 100 percent financing.

And then once a project is operational, we begin billing customers

for the realized savings, having them pay a cost-per-unit of energy saved or water saved, so a cost-per-kWh of savings or a cost-per-therm of natural gas savings. We are also partnering with leading energy service companies and contractors that we engage on behalf of our customers to design, construct and implement projects, and then once they're operational, to perform maintenance and monitoring services throughout the efficiency service agreement term. In terms of our current portfolio, we now have operational projects in 23 different states, ranging from Hawaii to New Hampshire, and those projects are saving a billion kilowatt hours.

And really just thinking about the growth of efficiency-as-a-service and the type of technologies that are covered, if you look at our portfolio, there's more than 30 different distinct types of energy and water efficiency upgrades that are within our project and over 100 different types of equipment manufacturers and other assets that are involved in our projects. So delivering efficiency-as-a-service is really a broad area capturing both electric, mechanical, energy upgrades as well as water services for customers. Next slide. Holt gave a nice overview of efficiency-as-a-service. I probably don't need to cover too much of it. Obviously the key elements of third-party ownership, 100 percent financing of both energy and water efficiency assets. Maybe a couple of other added elements to include are that under efficiency-as-a-service agreements you typically see ongoing services in the form of maintenance and monitoring that are provided and included in that cost-per-unit of energy saved that a customer is paying. You also – since really the basis of an efficiency-as-a-service contract should be about delivering savings, you should have a provider that's agnostic in terms of the equipment or the technology that's involved. It's not so much about selling a certain type of chiller or a certain type of light; it's more about delivering the kWh savings from those assets.

And you should also be technology agnostic in more about selling savings in a software or equipment-based solution. And since the contract is based on the delivery of savings, payments should be denominated in a cost-per-unit of the service or savings that you're delivering on the energy or water basis. And just by the nature of ongoing monitoring and measurement of the savings, during each year of the service agreement term or each quarter – during really each billing period, you should be seeing those savings payments that a customer is paying to the service provider go up and down. And fundamentally that's what we see as efficiency-as-a-service at Metrus under our ESA. You can move on to the next slide.

Just a little bit more about – Holt mentioned efficiency-as-a-service. It is somewhat new to the energy efficiency industry, but it's really based on two very well-proven contracting vehicles in the energy world. So power purchase agreements, which have been in use for several decades, initially to develop large central power stations all over the world, and then over the last ten years or so to develop smaller scale renewable energy projects, particularly solar PV. There's also elements of traditional performance contracting where you have a turnkey engineering procurement construction solution upfront along with some ongoing maintenance and monitoring. All of those elements are present in an ESA, and you have the 100 percent financing, third-party ownership, pay-per-performance – a lot of those elements are being borrowed from a power purchase agreement. And then the integrated technical services and ongoing measurement borrowed from traditional performance contracting, to really give a more enhanced way to implement energy efficiency, where energy demand side savings start to get valued in the same way that energy supply side options, where customers are looking at procuring energy. They start to think the same way about how they're procuring energy savings.

And since you have a third-party owner of the assets, you have a service provider that is demonstrating control in terms of paying for, implementing and then paying for ongoing services, as well as having variable payments based on the delivery of actual savings. An ESA is something that should be off balance sheet for a customer, meaning that payments that they make to a service provider are not CapEx payments. They're operating expense payments, in very way analogous to how they view and pay their traditional energy utility bill. Moving on to the next slide. This gives a little bit of an overview of the two key contracts that are part of each project. So there's an Efficiency Services Agreement between Metrus and the customer. That ESA has a master set of terms and conditions that apply to the first site that we do a project with the customer at, but they also carry over and are repeatable to multiple sites where we work with the customer but at different locations. So you have a standardized set of terms and conditions under the ESA, and then what changes from project to project is set of exhibits, where you detail the specifics of the work that's going to be done at an individual site, so that we have a specific exhibit for the type of equipment that's going to be installed, a specific exhibit for the measurement and verification calculations that are going to be done during the agreement, as well as the cost-per-unit of energy saved that the customer is paying.

In parallel and simultaneously we sign an agreement with an

ESCO or a contractor that covers the technical side of the project – the upfront construction and design, but the ongoing maintenance and monitoring as well. So those are really the key contracts that you see as part of each project, and again we have very standardized repeatable contracts, which is essential to really rolling this out across a customer's facility. Moving to the next slide.

The benefits from efficiency-as-a-service I think can probably be put in two main buckets. So on the financial side, there's no capital outlay, customers are able to utilize their scarce capital expenditure fund to invest in their core business. Since the ESA is off balance sheet there's preservation of debt capacity, again, for focus on a customer's core business area. As part of each project we're pricing the cost-per-unit of energy saved at a level that's below what a customer would otherwise pay their utility. So customers on all projects are cash flow positive. And since there's measurement and verification of the actual savings during each year and billing period of the ESA, that's a pay-for-performance that de-risks projects for customers. On the operational side, a lot of the benefits I think just highlight that there are impactful benefits for customers from upgrading key energy consuming equipment that touch on resiliency, reliability, efficiency of building operations. Some of that happens just from having new equipment with higher efficiency. Some of that also happens under an ESA because there's ongoing there's ongoing monitoring of the equipment and ongoing maintenance that's above and beyond what a customer would typically do.

And maybe one last point is just that efficiency-as-a-service in our ESA is different than traditional financing in that it's more than a single point in time financing, where under an ESA – and we've done this with several customers, where we'll finance a project for them in one year that maybe includes lights, a new chiller and some control systems, and then two or three years later there'll be some technology advances. Maybe their facility will present itself to have some other savings opportunities. We'll identify those, fund them at that later period and roll them into the original contract and then just start billing the customer for the realized savings from the new measures. So it makes it so that this is again more than a single point in time solution. It's more of an ongoing energy efficiency procurement program for customers. You can move to the next slide.

We cast a pretty wide net in terms of the type of work we're doing. We've had projects where we've financed deals that have only one

or two efficiency upgrades and we've had projects where we've financed almost 20 different types of efficiency upgrades. Often we're bundling together shorter payback period measures, like lighting and controls, with longer payback period items on the mechanical side to get to those deeper energy savings retrofits. Typical projects for us are in the \$1-10 million range. We've done projects that are below a million and we've done several that are above \$10 million, but generally it's in that \$1-10 million range. And the term of the ESA is very tied to the weighted average payback on a project. Our shortest ESA is actually four years. Our longest is currently 15 years, although, maybe speaking to a little bit of that evolution in the market that Joe and Holt were talking about, a lot of our financing partners particularly on the debt side, seeing the performance of our projects over the last decade, are getting more and more comfortable with going out for longer terms. So we're starting to price some deals that are going out 20 years for certain types of customers and certain types of assets. You can go to the next slide.

This slide just gives a quick snapshot, trying to compare the ESA to what we typically see out there in the market as alternatives for the customers we're talking to. We probably don't see a lot of deals where we're bumping into PACE. That's usually a different type of customer, but we do see that out there. Lease, property assess, clean energy and then traditional cash. And on the left side you'll see Key Attributes, which just highlight elements that are inherent to efficiency-as-a-service agreements. So 100 percent financing, you see that for ESAs. Leases and PACE and obviously not for cash. Off balance sheet and pay-per-performance are really aspects that are unique to the ESA. Ongoing maintenance – primarily that's something you see rolled into an ESA. You can see it on the lease, but not always. Ability to add new efficiency upgrades as they emerge over time. That's very unique to an ESA. And then terms, roughly similar, could probably have the ESA here say in five to twenty years.

And then cost of capital is something that – we're obviously not charging a customer a fixed principal or interest payment, but anytime you go to a customer and you start to talk about a project, you start with the cost-per-unit of energy saved discussion, but ultimately they'll want to know what the cost of capital would be on a project. So we're pretty transparent about that, and you can see it's not a major difference compared to other financing options. But then we usually pivot to the discussion of, "Okay, this isn't a loan with a fixed interest rate. It's something different," and we talk about the benefits of why efficiency-as-a-service is something

that can help them scale, whether they're thinking about facility upgrades or maybe a broader sustainability plan – how we can help them do more and do it faster. Next slide.

In the spirit of time I'll be pretty quick here. I think the overarching point is that the development cycle of an efficiency-as-service project is no different than your traditional energy efficiency project. There's the two-stage audits, a preliminary and then a detailed assessment. While the technical work is going on, Metrus is typically working with the customer and their finance and legal team, getting work done in parallel so that you really shouldn't see a longer development cycle from any ESA beyond – as we've seen for repeat projects for customers, we think we can actually accelerate and shorten the process as we move from project to project and phase to phase.

Finishing out here with the next slide and just talking about a couple of quick case studies, talking about speed of implementation, this \$70 million program that we've done with a Fortune 100 Technology customer is something that's largely been done in a two-year span. So a rapid rollout. And as you can see, it's a different type of bundling that we're doing, that we think is pretty unique and innovative here, where – typically you'll bundle together at a single site a long payback measure with a short payback measure. Here we're taking the same project essentially, lighting and BMS systems, and doing it across thousands of miles, where this program has 40 sites, covers 20 different states and you have the same LED lighting project and you do it in a higher-energy-cost area and you couple that with a site in a lower-cost part of the country and then a customer is able to get more done rather than just do the project in the higher-cost energy state and leave the longer payback one in the lower cost-energy region undone. So that's something that we've seen a lot of growth on.

Next slide maybe you can just pass, because it's a nice picture and I'll leave Rick to talk about Bristol. Well I'll close out with BAE Systems, who – the Fortune 100 customer is one of our more recent customers. BEA Systems was actually Metrus's first customer ten years ago and we've developed six projects with them, covering three different states, a wide range of upgrades. And some of our early-stage projects with them are now into their eighth and ninth year of operation and have been performing well, often exceeding expectations. And I think there's something that as we're working and dealing with new capital partners and investors, they look to that track record and the performance. So it's an earlier stake in the ground for efficiency-as-a-service and they're

projects that've been working well. And maybe I'll stop there and can pick up some questions later.

Holt Mountcastle: All right, thanks so much, Bob. A quick reminder for everyone to send in questions that you may have throughout the webinar, in your chat box. We're collecting those for the Q&A period at the end. So next let's hear from Asher Burg at Sparkfund. So Asher, take it away.

Asher Burg: Great, thank so much. So I'm going to spend some time talking about subscription, which is a flavor of as-a-service, slightly different than an ESA, and I'll talk about some differences. But we're seeing really sort of a proliferation of these various flavors and models out in the market under this new sort of concept. So Sparkfund was founded in 2013 with a singular focus, to help CMI and **Mush** customers do more energy projects faster and with fewer resources. Today we have over 500 customers in two countries, across 43 states, and our product is called a technology subscription. Joe talked about subscription in our lives at the beginning, and I would agree that it's really becoming ubiquitous. We're all – let's go to the next slide.

We're all familiar with how Lyft, Uber and Netflix have changed our personal lives. However, subscription has also transformed our professional lives. Take for example Xerox or Amazon Web Services. Every organization used to allocate capital and build a team around running their own services. Now they subscribe to Amazon Web Services. It's such a better option that even the NSA has moved to the cloud. The same logic of the subscription can be applied to energy systems. Just as AWS owns, maintains, upgrades and guarantees 99 percent uptime servers, Sparkfund owns, maintains, replaces and guarantees uptime of energy systems. Next slide.

Today we offer subscription to all of the energy systems that deliver heating, cooling, lighting, resiliency and now mobility. This means lighting, HVAC, refrigeration, backup generation and storage, EV charging and building controls. So a wide range of technologies – and this is obviously different than a shared savings model. EVs don't produce savings. Neither does backup gen, and many HVAC projects are not cash flow positive. But they provide a really important building function. Also unlike a savings guarantee, 100 percent of the savings from the technology that we install and optimize go to the customer. The customer continues to pay the utility bill and the customer continues to operate their systems without constraint. Therefore energy savings is an

important benefit but only one of the benefits. Let's go to the next slide.

So I know that this webinar is around financing and that's an important part of what we do, but it's really only a piece. So in addition to _____ capital for a typical project, a customer needs to navigate vendor selection, technology selection, procurement, installation management, emergency repairs, how they're going to deal with ongoing service and maintenance. What about how they're going to optimize the assets over time? Integrate with IOT, monitor. Sparkfund holds all of that together and offers the customer a turnkey package through subscription. This is really challenging for a customer to navigate because it is a fragmented ecosystem. I'm always amazed when I see an OEM that sells to an agent who sells to a distributor who sells to an ESCO who subcontracts their work and all the margin stacking then ends up going on in it. This is super time-consuming for the customer. There's more downside than upside. And ultimately it's just not the customer's core business. So in order to deliver subscription, Sparkfund organizes the market, we tap into the best installers, the best servicers, we provide a single point of contact for the customer and we deliver the entire project.

So I want to spend a minute now on this slide, on the dark blue box, with the Subscription Provider, because it offers an important insight, I think, in terms of how the market is changing. So Sparkfund offers technology subscriptions directly to customers, who are also seeing a major shift in how energy players and thinking about behind-the-meter infrastructure. We partnered with Shell, for example – major contractors, a number of major IOUs who are white-labeling the Sparkfund technology subscription to provide it to customers in the market. They're really seeing energy technology in the building as an extension of the grid infrastructure that they currently deliver today. Let's go to the next slide.

Okay, so the nuts and bolts of subscription. Zero dollar capital outlay. Does not involve taking on debt. The risk is transferred to Sparkfund and our service providers and monitoring and maintenance is included. The contract guarantees measurable benefits of the technology, guarantees performance of all the equipment and is often termed or designed to be a service contract, which is often termed off balance sheet. The contract is also super flexible. It allows the customer to terminate at any point during the subscription for the cost of the underlying equipment, or transfer it, which is really important in terms of building ownership. And at the end of the term the customer can take ownership of the

technology, extend or upgrade and continue on with subscription. Next slide.

So I mentioned that finance was only a piece of subscription? Technology and software also play a major role. So as part of the customer's experience, they get access to a 24/7 view of their assets. We install monitoring equipment and proactively fix issues, but a customer can see if their equipment is working at all times. Go to the next slide. So I've been talking about subscription as one thing, but the reality is that it has three different flavors. If you look at that Comprehensive column and Existing Equipment, it's rare, unless we're talking about a new build, that all technology needs to be replaced at once. To address that we've designed a subscription that can handle existing technology as well. So let's take a simplistic example of a quick-serve restaurant with say two RTUs that need to be replaced, and two don't. We can put all four under the same subscription. Next slide.

Okay, so what does this actually look like to a real customer? So this is a customer of ours. It's a small, private college, and the red line shows the existing maintenance and repair spend as well as budgeted capital replacements for energy systems over an eight-year period. And the blue line shows the cost of subscription. So there's two things to point out. First of all, the area under the blue line is less than the area under the red line, and the second is that the blue line is predictable. **Net-net** for this customer across this range of technology that you see here, they ended up saving four-and-a-half million dollars in terms of energy maintenance and capital spend. Let's go to the next slide.

So one of the benefits to using a subscription approach as opposed to traditional financing is that it's modular and it's scalable. So Affinity Living is a customer of Sparkfund's. It's one of the top-ten largest assisted living providers in the country. The first project that with them that we did was only \$100,000. Our master contract is three-and-a-half pages and each addendum is between two and four pages. So we were able to start small, prove the model. We've now done 35 facilities across technologies for this customer. Next slide. So one interesting thing that I think we've learned, and was somewhat surprising, is that the adoption of this has really cut across sectors. So retail, hospitality, healthcare. I think this was mentioned at the beginning of the webinar. But it's truly the value proposition of getting better building function at lower cost really resonates across the market. Let's go to the next slide.

Okay, so the question is, how does this work? The process starts

with data collection, then really moves to determining what systems a customer wants to subscribe to. It's across what locations and what technology. We'll then come in and install monitoring and controls on those systems to really understand the health. Immediately at that point, take over responsibility for the performance of those systems, and we'll start optimizing the system performance. We'll take on preventative maintenance and emergency repairs, as necessary, of that existing equipment and the equipment that needs to be replaced, we'll replace those under-performing assets and replace them with energy-saving and improved technologies. Let's go to the next slide.

So I really appreciate everybody's time. If you have questions you can submit them into the chat box and I look forward to questions at the end of this.

Holt Mountcastle: All right, thanks so much, Asher. And then finally let's hear from Rick with Bristol Hospital.

Richard Braam: Hello, everyone. Next slide, please. There's kind of who I am. I work in healthcare, an industry fixated on having lots of letters after your name, so we can move to the next slide. So Bristol Hospital, we're located in Bristol, Connecticut, home of Otis Elevator and ESPN. The hospital was founded almost 100 years ago and we still occupy the original building. And if you look at the photograph, at the left-hand side, the lower white building was built in 2002. So like a typical hospital we have various buildings and various components of our campus built at various points in time. Building 1, which is the eight-story structure sort of towards the right-hand side of the screen was opened in 1968 and the air handlers in that building were original when I arrived here in 2017. Upon arrival here and talking with our facility manager, he brought this to my attention. I do have some operations background. And so this all very quickly became concerning to me.

We weren't so much strapped in debt here, but we had very limited cash and capital available due to a provider tax in the state of Connecticut. The state, the balance its budget, thought that it was a good idea to tax non-profits, hospitals, and so the state was really sort of cleaning out all of our free cash flow. And the other challenge we had in putting together any sort of financing, traditional financing, to try to replace those air handlers was the fact that 100 percent of our real estate was mortgaged. So our outstanding debt was really related just to that, again, the 2002 building. All of the other buildings had been long since bought and paid for. But in securing the financing for the 2002 addition, the

bond holders put a mortgage on all of our property, and so we were very challenged in being able to do any sort of financing of large capital projects. Next slide please.

So as we looked at doing this ESA with Metrus, for us it was a pretty complex transaction because of the number of parties involved. So not just us and Metrus were involved, but as Bob had mentioned, Metrus puts up their own capital, but also does secure financing, and so we had their lender involved, our ESCO, Trane – but again, we had outstanding debt which had been issued by the Connecticut Health and Education Facilities Authority, or CHEFA. That debt is secured through a bond insurer arrangement, and so they're a party to it all. Everybody had to have their lawyer involved. And the critical issue for us again was that mortgage and the ability for Metrus and their lender to have some sort of security around the equipment they were putting in place here. Next slide.

So it was a pretty complex project for us too. You know, Bob had mentioned the scope that some of these can take on. Our scope of work was 17 pages long. And in addition to the air handlers, to sort of get a scope of savings on the project, we looked at replacing virtually all of the plumbing fixtures and light fixtures in the main campus and in our skilled nursing facility, which is about a mile away. A challenging aspect of the project is the fact that we operate 24/7, 365, with patients in beds in direct care areas virtually all the time. And so we had parts of the hospital where there was no downtime for the trainers or subcontractors to actually do the work. So that was one of the critical elements for us, and you know, wonderful for us, Trane and the subcontractors really displayed great flexibility, and as we were managing the project internally, there were many days, just because of patient volumes or whatever, we had to sort of – they thought they were going to be working on one floor and we had to send them somewhere else to work. And so again, they were very amenable to sort of changing plans on the fly to help minimize the impact on our operations. And despite all that, the project was completed on time for us. It was about a nine-month timeline to get all of the work done. Next slide.

So the financial implications. Again, it is off balance sheet, which is a term that sometimes carries some negative connotations, but it really means that we have no asset or liability recorded. We have no asset because Metrus owns the equipment and there's no liability recorded because this does not qualify as a lease arrangement. I looked at it internally and our audit firm, Crowe, reviewed it at the local office of the firm and they sent it to their

national office. And the key elements of this that really keep it from qualifying as a capital lease is the fact that Metrus maintains or retains so much of the risk around it. And as Bob mentioned, those payments go up and down period by period, because they're getting paid based upon the actual realized savings generated by the reduced utilization of the energy. And so because they are maintaining that risk, it really does not qualify as any sort of a leasing arrangement. And so again, due to that shared risk model, we are able to keep it off balance sheet. And I believe that's it, pretty short and sweet on our impact. So, I think one more slide? Or, that's it.

Holt Mountcastle: All right, thank you so much, Rick. So here are a few links to the Efficiency-as-a-Service Toolkit, as I mentioned earlier, and actually two of the projects that our panelists mentioned during their presentations. So next slide. I want to quickly mention the Better Buildings Financing Navigator. So this is an online resource that helps public and private organizations find financing solutions for energy efficiency and renewable energy projects. So this is a great tool that you can use to see a list of financial allies and who offers efficiency-as-a-service financing, along with contact information if you want to reach out to learn more about their services. So next slide. All right, so let's get to some of the questions. We've had a bunch come in; I'm seeing more come through right now. So Bob, why don't we start with you, and I have some for the group as well. So, "Has efficiency-as-a-service as a concept taken on in the industrial sector, and what barriers do you expect to see in the sector?"

Bob Hinkle: Yeah, it definitely has taken off in the industrial sector. Our first projects were with BAE Systems at their industrial and manufacturing sites, so I think it's a key area where you do see a lot of the industrial manufacturing firms – there's scarce capital dollars there. BAE in particular came to us because they had a lot of deferred projects that just weren't meeting their internal **hurdle** rates and kept getting pushed off and pushed off. And with risk of potential equipment failure it was something that they knew they needed a different solution to move. So I think it's really well suited to the industrial sector. We started off primarily with owner-occupied facilities. Our Fortune 100 customer, there's several sites that are not owned by that customer, and that's not unique just to them. There's other customers we have that don't own their sites. So we're dealing with mortgage holders and other groups, as Rick was talking about. So there's been a lot of evolution, and I think the industrial sector is pretty well poised there.

Some of the constraints are, with changing environments, customers that might be potentially leaving their sites before the typical term of an ESA. Often a lot of those customers also have needs for longer payback period projects but sometimes they might not want to enter into a contract longer than ten years. So sometimes there's just some economizing a project to make sure we can do what fits in within their real estate perspective. And how we address that under our contract is also having different terms where a customer can get out of an agreement if for some reason their real estate situation changes. But those are some of the things that we think about on the industrial side.

Joe Indvik:

Great, thanks, Bob. This is Joe Indvik here again. So we got one question – and I'm glad we did, because it's probably the question I've gotten most frequently about efficiency-as-a-service, and that is, "How is this different than traditional energy performance contracting and ESCOs?" And I feel like Sparkfund and Metrus will have slightly different answers for that question, so I'd love for you both to take a crack at that. But how is this different than ESCOs?

Bob Hinkle:

Sure. You want me to go first? This is Bob.

Joe Indvik:

Yeah, go ahead.

Bob Hinkle:

Sure, okay. Yeah, so I would say there's a couple key differences. One, under a traditional performance contract, the customer owns the assets. So under a historical I guess you could say ESCO model, the ESCO would implement the project. They might provide a performance guarantee, but the assets are on the balance sheet of the customer and the customer is always taking out either funding maybe in the form of a lease or using cash to fund the project. So the performance of the project is divorced and disconnected to actually the payment mechanism and how the customer is making payments. You know, typically they're making a hell-or-high-water lease payment and that's the same regardless of the performance of the contract. The other key item is that under traditional ESCO performance contract, there is a performance guarantee – that again is not part of the payment mechanism but helps backstop the project. And typically that performance guarantee is set at roughly 90 percent of the expected savings on a project. And that's very conservative and leaving a lot of savings on the table that otherwise could be used to go scope out and fund a bigger project generating more energy savings.

So under our ESA, Metrus underwrites the project to the hundred-

percent level of the expected performance, so we're taking really – if you want to compare it to that traditional performance contracting model, we're taking that first ten percent risk and really underwriting it to the expected performance, which is I think largely changing the way customers are starting to think about performance and how to pay and measure for savings.

Asher Burg:

Yeah, so this is Asher. Just a couple thoughts to add there. You know, in talking with customers in the market, there's a bunch of pain points that customers have experienced with performance contracts. One of the main ones is the flexibility or lack of flexibility with those contracts. They tend to be incredibly complex, burdensome. I've seen versions that are a hundred, hundred-plus pages and really restrict what a customer can do with their space. I think typically also with that comes a fair amount of cost and underlying cost of capital that ends up being really expensive. I think that the final thing I'll add is that with the as-a-service model that we're talking about here, there's ability to go beyond the typical benefits of performance contracting and into other benefits of building function. I talked about mobility and EVs and EV charging and I talked about resiliency, a broader set of attributes and benefits that can be contracted around.

Holt Mountcastle:

Awesome, thanks Asher. So Asher, while we're on you, we have a couple of questions about Sparkfund's model. So, "What is your customer's average monthly subscription cost?"

Asher Burg:

Yeah, that's a great question and I could probably give a number, but I think that the answer really comes down to the amount of technology that we're looking at installing and what technology we're looking at installing. In the subscription model – take that simple example of two RTUs that need to be replaced on the roof and two that do not. We're going to come up with a specific subscription cost that takes into account the fact that those two RTUs do not need to be replaced but that we're going to be putting a guarantee of that performance on those RTUs. So it's going to be a lower subscription cost if less technology needs to be replaced and it's going to be a lower subscription cost depending on the overall size and scope of the technology.

But we do projects that start at \$50,000 size and we go all the way up to \$10 million projects and can handle – you know, this model and this modularity that Bob and I are talking about can handle that kind of fragmentation of various projects. That really is important in the commercial sector, where you have that kind of building fragmentation across multiple buildings, multiple sites, multiple

technology systems – not necessarily all one central campus or plant.

Holt Mountcastle: Okay, great. And then one more. So, “Do you develop your own building monitoring and control system, or do you use an existing one?”

Asher Burg: Yeah, so I think one important piece is that we really are technology agnostic. We are looking at delivering the building function and benefits like savings at as an efficient cost as possible. So we use the scale and scope of the projects that we do to get sort of best pricing, but really work with either vendors that the customer prefers or the best price in the market.

Holt Mountcastle: Got it. Okay, and so then, Rick, moving on to you, “Did any of your debt covenants identify your building as collateral, and if so, were there issues of Metrus owning the plumbing and lighting fixtures?”

Richard Braam: It did. And again, anything that gets attached to the real estate becomes part of the real property, and the debt covenants put a mortgage on all of our real estate. The concern with – the bond insurer was really the party who made waves on it. It wasn’t the plumbing and light fixtures. It was all around the air handlers. You know, for Metrus _____ to have proper security, they wanted a lien on the air handlers and the bond insurer was objecting to that because – their argument was if the air handlers were removed it would be tantamount to shutting us down. My first argument to them was if we didn’t replace the 50-year-old air handlers they would fail and we’d be in the same position. But again, we got through it all. Bob Hinkle and I, just really one-on-one, kind of went through it, explored alternatives. I would take our ideas to the bond insurer and he’d mull over them from their capital and then with their lender until we finally got to a solution around a security position that everyone could live with for Metrus and their lender.

Joe Indvik: Great. Good stuff, guys. This is Joe again. So another question that I get pretty commonly and that someone asked here as well is – it says, “For project design and operational performance, climate change and annual weather variations” – and I would add to that changes in occupancy and other behavioral factors – “can dramatically change the energy use amounts and patterns. So I know that Sparkfund and Metrus handle the treatment of energy savings differently, so I’m curious, how do you adjust for changes

due to things like climate change, usage patterns or weather variations?”

Bob Hinkle:

This is Bob. I can go first. So part of that gets worked out in the development phase, in terms of coming up with the measurement and verification protocols which are unique to each project. And the protocols vary dependent on the types of assets, but for each upgrade there's some measurement of the underlying performance of the equipment in terms of how the new equipment is going to be performing to the baseline, and then for other parameters, certainly ones that get into some of the areas you're talking about, things like – I mean, I guess in our deals maybe it's occupancy or it might be more operating hours of a facility. A lot of those items get worked out with the customer upfront and then get fixed, just because it's – you know, Metrus nor the contractor nor the lender can really take on the business risk in terms of what a customer's facility is doing in terms of its operating hours, whether that goes up or down.

So it's a lot of isolation of measures, measurement variables, that we can monitor. We take the risk on the performance and the operation and the output of the equipment, but not so much on the customer's underlying business operations, whether their occupancy is going up or down. And then there's baselining of average patterns for weather. So it's a little bit of a mix of agreeing on variables upfront, coming up and determining what everyone agrees is reasonable and then honing in on the key items to measure so as not to overcomplicate projects and start to try to track data and items that might end up costing more money than some of the energy savings themselves.

Asher Burg:

I'd say that's a great question, and I think similar to Bob – you know, we don't want to be in the business of telling a customer how to run their business or when to operate their hours, so we're taking on the performance risk of the systems and of the business. To take on the risk associated with operating hours, etcetera, ends up – would end up being very expensive and would not benefit anybody. So it's really about taking on that performance risk of the systems. I think a difference between our two models is that we do not lock in operating hours, etcetera, anything like that. We're really guaranteeing the underlying function of the systems. That's the updated energy usage, power draw, as well as the output functions. And that model allows us to do that outside of just energy efficiency and cash flow-positive projects, on to projects that are not cash flow-positive or mobility resiliency, because those are still necessary building functions and those systems also need

to be upgraded or replaced one way or another. This is just a better way to do it.

Joe Indvik:

Great, and one final, high-level question for anybody who'd like to chime in. I know that one of the perennial challenges when it comes to getting energy efficiency done in America's building stock is getting building owners to pay attention to it, right? We know that the project opportunities are there, we know that the capital is there, but the challenge is in getting connected to the right financing providers or third-party providers of efficiency-as-a-service to actually get these things done. So I'm curious, I know that in both of your cases you both said to me separately that offering efficiency-as-a-service has kind of unlocked conversations with building owners in a way that other financing mechanisms have not. And I'm curious why you think that is? I mean, what's the one thing about efficiency-as-a-service that is enabling projects to get done that have not historically received financing or been demanded by building owners? So maybe Asher, if you want to take a first crack? And then Bob?

Asher Burg:

Sure. So I think on thing that we're pretty clear on at Sparkfund is that capital is really only one piece of the puzzle. Financing is only one piece of the puzzle. There are a lot of things that need to happen and this is complex and messy stuff. It's not the core business of most of the customers that we're talking to, to procure, manage, optimize, maintain their energy systems, and they'd rather be spending that time, that capital and frankly, you know, the risk associated with those decisions on something that is core to their business, whether it's educating students or whether it's making pizzas or whatever it is that they do. So this approach really is a more holistic approach that addresses more than just the capital piece and financing and really delivers a solution that addresses that time, capital and risk equation.

Bob Hinkle:

Yeah, and I guess on our end – I mean, this is something we spend everyday thinking about and it's not easy. It's been tough and a lot of hard work and we do see it getting better. We have seen a big change particularly in our business over the last two to three years in terms of customer acceptance. And part of it is I think people are starting to understand the as-a-service model a little bit better. I think the good work that's been done in the renewable energy side with solar PPAs and having people not pay for solar panels but pay for solar electricity, I think that's resonating and getting better with customers. But still a lot of hard work. I think in the last couple years the changes we've seen are certainly customers that are trying to do more, whether it's aging infrastructure – if you look at

the average age of buildings in the U.S., over 80 percent of the buildings are 20 years old. So I think things are catching up on customers in terms of their deferred maintenance and work that needs to get done. I think that's part of the equation that's moving things along.

And then also we are pleased to see, and it's been a long time coming, customers that are starting to move because of climate change or climate reduction targets, where they have pretty bold targets and the years are coming pretty quick to when they want to get this work done. And then you get back to the traditional problem and what we always chase with customers is that they always talk about, "Well maybe I'll use my own capital for some of this in a couple years," and they inevitably don't. I think now people, because of climate change, facility improvement needs and deferred maintenance, are having to act and are seeing this as a nice solution, as Asher was saying, that's integrating financial but also technical upgrades together in a way that, if they look at it, they're not paying anything during the development phase, they're not paying anything during construction. They just start paying once these projects are operational. That's starting to take hold.

Holt Mountcastle: All right, thanks so much, guys. I think that's all the time we have for questions right now. I know we did not get to everyone's questions, so we have a slide at the end with contact information if you'd like to follow up with anyone. So let's go to the next slide. All right, so we hope that you will plan to attend the next Better Buildings webinar, which will happen on Tuesday, June 4th. That webinar is entitled Solutions for Small to Medium-Sized Data Centers, their management. So this webinar will focus on how small data centers can help air management best practices and see a reduction in infrastructure energy costs. Next slide. All right, the 2019 Summit. So registration is now open for the Better Buildings Summit, which will take place July 10th and 11th here in Arlington, Virginia, which is just inside the D.C. Metro area. Pre-conference activities will take place on July 9th. To find out more information and browse the session agenda, feel free to visit the Better Buildings Solution Center, which is linked to in this slide. And we hope to see you there. And next slide.

And with that I would like to thank our panelists very much for taking the time to be with us today. Again, feel free to contact anyone listed here with questions directly if we did not get to your question during the Q&A period. If you would like to learn more about the Better Buildings Challenge or Alliance, please check out our website or feel free to contact myself or my colleague Kendall

Sanderson directly at the e-mails shown below. I would encourage all of you to follow the Better Buildings Initiative on Twitter for all of the latest news and achievements. And you will receive an e-mail notice when then archive of this session is available online, which should be in a couple of days. So thank you everyone again for joining and enjoy the rest of your day. Bye.

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