

*Adam Guzzo:*

Well, good morning, everyone. Welcome to the webinar. I've got 11am Eastern, so I'm going to go ahead and get us started. Thanks for joining us this morning. This is part one of our three-part webinar series on energy data management. And we can go ahead and move to the next slide.

In this webinar series, we'll introduce you to the Department of Energy's Data Management Guide, a web-based resource that provides public sector organizations with a seven-step approach to establish a robust and sustainable energy data management program. The webinar series is organized around the guides' three pillars, and Part one is focused on generating buy-in for your energy management program.

Go to the next slide, please. My name is Adam Guzzo. I'll be your moderator today. I've been with the Department of Energy since 2010 advising states and local governments on strategies to maximize energy and cost savings through energy efficiency and renewable energy technologies, programs and policies.

More specifically, I lead projects on energy data management and state and local energy planning, and was one of the primary authors of the Energy Data Management Guide. And I'll introduce you to our speakers from the city of Boston and Portland Public Schools here shortly. Next slide.

So before we dive into the agenda for today's webinar, let me explain how we're going to handle polling and Q&A. So if you've attended a Better Buildings Webinar or our annual summit, you'll be familiar with Slido. Slido is an interactive platform where you can enter your questions and provide us with some feedback via polls.

So I'm going to ask you to go ahead and go to [slido.com](https://www.slido.com) either using your mobile device or you can open a new window in your internet browser. And then today's event code is #DEO. You can see it there on the slide. You can also click on it to take a picture of the icon there on the slide.

So if you want to ask any of our panelists questions, we ask you to submit those questions in Slido. You can do it throughout the presentation, we'll be answering those questions near the end of the webinar.

And then Slido also has this cool feature where you can select the thumbs up icon for questions that you like and maybe others have asked. And that'll help push those questions up to the top of the queue. So go ahead and get in the Slido and we're going to come back to you here in a minute with a poll. But let me talk about our agenda for today on the next slide.

So we're going to introduce you to the Energy Data Management Guide. That's going to be the first item we'll cover on the agenda. I'll do a brief demo of that. Yep. And here's that agenda slide. Thank you. I'll talk about the features and the functionality.

Then you'll hear from Chris Kramer, from the city of Boston, about he and others in Boston generated buy-in for their data-driven energy management efforts, and some proven practices and lessons learned from that experience. Next, Aaron Presberg for the Portland Public Schools, will talk about how data-driven energy management supports the school district's energy and climate goals, and share his proven practices for generating buy-in.

And then we'll take your questions and close by sharing some additional resources on the topic that you can check out later. So next slide. And this is going to take us into Slido and our first few polls. So we're going to learn a little bit more about you. So we're going to ask for your feedback and appreciate your input.

Go ahead launch that first poll. Great. So what we're asking here is tell us a little bit about what where you come from? Are you state government, local government, school district? Those are our three primary audiences for the energy Data Management Guide.

And obviously, our two speakers today represent a local government and the school district. So good to see that we have quite a number of folks from those sectors. And as folks get familiar with Slido and start to provide some responses, I'll give you a minute to do that. Looks like we've got some folks who don't fill in nicely into any of these categories that we've outlined.

Yep, thanks for scrolling down. Great. Hopefully, folks are getting familiar with Slido, how it works, responding. Looks like local government is leading the way here by quite a bit. So Chris, got all your colleagues on the line. Great to see that. All right, let's go ahead and close that poll.

Thank you again for the input. Now we're going to ask a little bit more specifically about your role in your organization. Give us a sense of who we got on the line? What sectors are now – what role you play? Energy Manager, great. Manage programs involved in the data and analysis part of the work within your organization, fantastic.

This presentation as well suited for you, if you're a data analyst or an energy manager. Energy engineer, I see as well. Yeah, some folks maybe don't fit perfectly into that bucket. We got some facility managers on the line as well, no, looks like mostly just project managers, program managers, and energy manager. Great.

Okay, thanks for the feedback. Okay, before we close that poll, we're going to leave it open for just a second. So the next poll, we're going to ask you what you're hoping to learn from today's webinar. We do this a little bit differently; you're actually going to be able to provide feedback free form that will now help us try to address that as much as we can.

And hopefully, we already are planning to address much of what you're hoping to learn. So thanks for the input here. Let's go ahead and launch the third poll. Great. So should be able to type in here, tell us what you're hoping to learn? And like I said, hopefully, we'll hit that right on the head as we talk for the next 15 minutes or so.

Okay, best practices for communicating data to the public. Okay, that's very helpful. I will encourage whoever wrote that to come back for part three in our webinar series. We'll definitely talk about that in most detail in that section. But I imagine both Chris and Aaron can share a little bit there.

Yep, best practices for Energy Data Management. Great. You're in the right place. We're going to walk through that, for sure. Data hub, data management. Yep. We'll talk about those things. And we'll definitely dig into those in great detail in part two, where we talk about creating a central energy database.

But both Boston and Portland Public Schools have a central energy database that they utilize, so they can tell you a little bit about those. Yep. What are some of the pain points? Yeah, we're going to ask a question later about barriers. How to identify the implementation steps. Yeah, prioritization of buildings, talking points for leadership. Great, really helpful feedback. Appreciate that.

I hope and believe that the data guide will cover much of that, which I'll introduce you to here in just a second. So thanks for the input. You can continue to provide input on to that question, we'd love to continue to hear what you're interested in. I'm going to go ahead and ask us to take us back to the slides and introduce you to the Energy Data Management Guide.

So about a year ago, DOE released the Energy Data Management Guide and I mentioned briefly. It's a web based how-to guide that provides public sector organizations, so states, local governments, school districts, that's our target audience, about a seven-step approach for establishing an energy data management program.

As many of you know, states, local governments and K-12 school districts are large energy users that own and operate a significant number of facilities in many cases and/or other energy using assets. So taking a data-driven approach to managing those assets can help your organization identify opportunities. Someone asked about that? How do you prioritize.

So identifying opportunities for energy and cost savings, make informed decisions about which facilities to prioritize for improvements, and then enhance control of your energy budgets, among many other benefits, but those are some of the big three. And you'll hear more about that from both of our speakers today.

The proven practices outlined in the Energy Data Management Guide, along with the case studies, resources and tools highlighted in each of the seven steps are designed to help public sector organizations utilize utility and asset data to manage the buildings and facilities they own and operate more effectively.

So you can see those seven steps listed on the right hand side of the slide. And they're organized into these three pillars generate buy-in build a solid foundation and hardware energy data management. The first two steps on generating buy-in for your program by defining the value proposition and then aligning that value proposition with an organization's goal. That's what we're going to focus on in today's webinar.

In part two, we'll cover steps three through five. And then in part three, on December 2, we'll cover steps six, and seven. So I hope you'll join us for all three parts of this webinar series. Next slide, please. So as I mentioned, we're focused on steps one and two,

designed to help your organization generate buy-in for data-driven energy management.

I'm just going to quickly highlight step one, so it demonstrates how to develop a concise business case for your energy data management program by articulating the program's energy and cost saving benefits and how it supports more effective goal setting and budgeting. So that's a brief overview of what step one covers in the guide.

And then in step two, we describe how to align the value proposition of your energy data management program with your organization's mission and established goals. So I'm going to jump us into a live demo at this stage. So I'm going to share my screen and walk you through a bit of what that looks like.

So hopefully, everyone is seeing my screen now, you should be. Let's make sure that I'm clear. Can you just give me a verbal cue that my screen is showing up?

*Participant:*

We can see your screen up, thank you.

*Adam Guzzo:*

Thanks. Fantastic. Thank you. So I'm going to start you off, you saw the URL listed on the slide, it takes you here to the homepage for the Energy Data Management Guide. That's what you're seeing. And from here, you can jump right into the guide by clicking on "Get Started". Or you can use this step-by-step framework that was previewed on the slide, and is now visible here for you to jump into a specific step.

It's designed to walk you through the process of establishing an energy data management program, starting with step one and moving through step seven. However, we intentionally designed it, and in fact that it's web based, to make it easy for users to jump between steps and topics based on their area of interest.

So I'll show you that functionality in just a minute. I'm going to show you a couple other features here. In case you want to learn more about the guide, you can jump into the about page here to find more information about its purpose, intended audience. And you can learn more about the methodology we used to develop it.

So here's that methodology. Tells you a little bit about the primary research we did, the criteria we used in terms of replication, effectiveness, sustainability, impacts, and metrics. And you can see

that we engaged over 80 individuals representing 10 states, 25 local governments and five school districts that we interviewed in developing the content for the guide.

And if you're curious to learn who those folks were, there's a whole list of them and their respective organizations at the time we talked to them as part of the materials here. So that's one way to learn a little bit more, I'm going to show you also we have a glossary, as well. So commonly used terms are programs that are referenced throughout the guide searchable by letter here.

So if you're curious to learn more or not familiar with a time, that's a great way to use that feature of the guide. Take us back to the homepage now. And we'll jump in to the actual content. So instead of jumping directly into step one, I'm actually going to take us into the generate buy-in learning page and show you what that looks like.

So when you land here, you get an overview of steps one and two. And I highlighted those for you earlier. And if you click on this drop down box under each of the steps, you actually get a list of the case studies and resources. And step one doesn't have any tools. But if it did, those would be listed here as well.

So all of the things that are available in that step, if you want to just jump directly to those things without actually looking through the content of the guide. So for example, if you're a school district, and you want to check out a case study showing how a school district generated buy-in, you can click on this case study from Portland Public Schools.

You'll see how they made the business case for investing in a utility data management solution, get a little bit more information about the barrier and the solution, the outcome, and then their implementation strategy. So that's an example of a case study.

You'll see, there's case studies from local governments as well as states as part of what's embedded in the step one content. And then I'll scroll down here and show you step two, similar design case studies and resources. And in this case, what we look at are one of the resources. So let's say you're an organization, you've set a goal to reduce building energy use.

And you're looking for examples of how similar organizations have realized energy and cost savings and actual buildings as a

way to make the case to your leadership for investing in energy efficiency. So go to these Better Building showcase projects, it's going to take you out to our Better Building Solutions Center. And you'll see a whole list of projects that will pop up here in a second.

And you can then sort those projects by sector. Apologies for the slow-moving internet here this second. So yeah, so here you've got a whole list of 326 projects you can search by sector. So you want to look at just local government projects, for example, you'll get a list. Have those projects.

And you can go into a specific project like this one from Arlington County and learn what their savings were on an annual basis, both energy and cost, and the measures that they introduced, or that they took on as part of that retrofit project. So that's an example of an embedded resource in the guide and how you might get to it.

Now I'm going to jump in to a specific step. So let's look at step one, and some of the content there. And I'll just show you some of the functionality, you're introduced here to what the step is, a high-level summary of its major elements. And then you can see we focus on energy and cost savings, enhanced goal setting and improved control of energy budgets.

That's the broad categorization for the buy-in value proposition. Got left hand navigation here to allow you to move quickly into a topic that's of particular interest to you. So let's say you're interested in enhanced energy goal setting, we've got more information about that about setting achievable goals and tracking progress.

And you'll see now this is where these case studies are embedded into the sections where they're most relevant. So here's a case study on New York. We've also got links to other tools and resources. And I'll just slowly scroll down here and give you a sense of the content.

And we've also got these short examples embedded throughout each of the steps. So you'll see ones from states and local governments on recovering costs from billing errors, and tariff adjustments, again, as a way to make the case and point to examples of how data-driven energy management, safe for money and energy in this case, by pointing to other examples.

And then the last feature I'll point out here is these footnotes. They're actually live active footnotes. So if you want to learn more about a particular case, study or example, or resource, you can click on these footnotes and then go to the embedded hyperlink to learn more.

So that's generally what the content looks like. You can see there's a process timeline here at the top to indicate where you are. So if I want to click over into step two, similar design, left hand navigation, summary of content, and then as you'll scroll through you'll see embedded case studies on topics of relevance embedded resources. And this is a shorter step, so there's less content.

So hopefully, that gives you a good sense of what the Energy Data Management Guide looks like, its functionality in terms of the ability to kind of scroll through or see where you are in the process timeline, and how you can jump between different topic areas within each of the steps.

So **Claire**, you can go ahead and take control back. And we'll go straight into Slido for our next poll and ask about some of the barriers that you face to generating buy-in for energy data management in your jurisdiction. So in some cases, it's maybe a lack of information showing the value proposition, that's really what steps one and two are intended to help address.

It's not a recognized organizational priority, again, the need to develop that buy-in, maybe you need a – there's a lack of process or team to help manage the data. So you can select more than one option here. I'd love to hear your feedback on what is the biggest or one or two biggest barriers maybe you're facing in your particular jurisdiction as you tried to manage your energy data.

Great. Well, not great. Obviously, sorry that you're facing any barriers. But we know that that's not the reality. So it's helpful to understand what those are. And Chris and Aaron are looking at these as well, and can try to speak to how they have addressed these particular barriers within the case of City of Boston as well as Portland Public Schools.

So it looks like we've got lack of process team or unified organizational plan to manage data. It's one of the top challenges for this particular group. Lack of information showing value proposition, so you're in the right place here. You're going to hear about that from both Aaron and Chris here in a minute.



Great, thanks for the feedback. If folks haven't had a chance to weigh in, please continue to do so. And we'll jump back into the slides. And I'll introduce Chris Kramer, from the city of Boston. And as I mentioned, he'll be followed by Aaron Presberg from Portland Public Schools.

So you can go ahead and go back to the slides, Claire, and I'll introduce Chris. So Chris, as you can see, has just joined us on the screen. He served as the Energy Manager for the city of Boston's Environment Department since August 2019. And he collaborates with facility's managers, engineers and budget analysts throughout the city by providing trends and analysis and energy and water consumption related to all municipally owned utility accounts. Chris supports Boston's Community Choice electricity program, as well as the multi-phase for New Boston trust energy performance contract program.

And he's also responsible for the city's regular reporting obligations to state federal and nonprofit institutions. Prior to joining the city of Boston, he evaluated the effectiveness of state level energy efficiency programs in the Northeast and Midwest, and served as a building science consultant on residential green building projects throughout the Mid-Atlantic region. So Chris, we're happy to have you, thanks for joining us, the floor is yours, take it away.

*Chris Kramer:*

Well, it's great to be here. Thanks for inviting me, Adam. There is clearly more information on energy data management, and how to get buy-in on the website that Adam just walked us through than I could ever share in approximately seven minutes I have today.

But I hope to give you just a flavor of how we approached this issue, what the benefits are for the city of Boston, and what some of the challenges and lessons learned events. So if you want to go to the next slide, to give you a picture of our energy use here and in Boston broken down by sector. About 10% of our energy is used in street traffic and other exterior lighting fixtures.

You might not be surprised to know that most of our energy is used in buildings, we have roughly 300 municipal buildings, and then a number of quasi city, a quasi-municipal buildings and the rest are attributed to vehicles, which includes our Boston Public Schools, fleet, fire department, police department, and all other departments that you'd expect in municipal operations.

So you can go to the next slide. And we have a poll actually. So on Slido, I'm asking everyone to share what is the scale of the largest utility billing error you have ever detected, if you've ever detected one in your jurisdiction? I'll give folks a few minutes to respond there. And so 10,000 would be on that order of magnitude, could be 10,000, 40,000. But billing errors are common.

And I'll say even with energy data management system, we still see them, but we can detect them. And so it looks like we've got mostly in the \$10,000 range, but some much larger in the \$100,000 range and some in just the \$100 range. It's good to know that everyone is detected some sort of billing error.

And I think we can probably go back to my slides, if everyone is responded, we have 10 responses. Maybe, I don't know, I think we had about 30 participants, 35. So give it another minute or two. But it looks like I guess we can go back to the slides. So just to give you an idea, we detected part of the impetus for us for curing energy data management services.

And just looking into it in the first place was that the city of Boston received a seven figure. That's right. On a scale of a million-dollar billing error that was not in our favor, way back in 2011. And one of the additional challenges that this presented in addition to having to pay an extra million dollars for utilities, is that it was detected once the fiscal year had closed.

And for those of you in any level of government, you know that going back into a previous fiscal year to make adjustments to your budget is extremely challenging. So it was a major headache for our city auditor. A couple other factors at play, prior to our acquisition of an enterprise energy management system, the city of Boston committed to the Kyoto Protocol.

Former Mayor, Tom Menino, committed to that. We were paying paper bills at the time piecemeal, and those bills were going to owner departments. So say the Boston Public Schools would receive all of their paper utility bills at their energy office. All of the paper bills for utilities for the police department would go to a separate office and they would all review them and then send them hopefully to our auditing department.

But everything in the process wasn't always smooth. And the bottom line is that our energy consumption was a black box. We

couldn't really monitor our energy consumption or costs. I think it was very difficult to budget and predict what our upcoming fiscal year's operating budget for utilities might be because of that. So you can go to the next slide.

In terms of getting buy-in, as Adam mentioned, building the business case, is key. And that requires talking to your finance cabinet. And in our case, that's our auditing department, our treasury department and our budget management office.

And just convincing them of what the strategy we actually took is we received a number of reports from a consultant on the benefits and different strategies for procuring enterprise energy management system. You also need department level buy-in. As I mentioned, there are finance teams in every owner department, community centers that were processing these payments.

And keeping a close eye on energy payments. And there is some degree to which they were asked to relinquish control of that process. And change is hard. And we can get into some of the challenges later, but the department level stakeholder engagement was critical.

And then making a decision about software as a service versus ownership. We decided to go with the software as a service model, just because software platforms change. And we also have public procurement policies that require us, with very minor exceptions, only sign contracts for three years or less.

And with software as a service, we're never in danger of purchasing a license for a platform that's going to be out of date and unsupported in three years. Next slide. And so after, what is our energy management look like now that we've implemented the enterprise energy management system?

We have monthly bill auditing from our vendor that checks it to make sure that some of those billing errors don't come up, or they're caught immediately. We have informed operational budgeting for utilities and forward looking and much more predictive and accurate picture of what we might be using for energy in the coming year.

We get different customized energy consumption insights. And ultimately, the Boston has really leaned into the energy savings performance contract model to meet our carbon emissions and

energy efficiency goals. So it really enables the creation of a program like that.

Next slide. I'll just finish by showing that we are also now able to show and share our utility data online for the public to use. And I can get into the benefits of that a little later. But I think my time is just about up. So thanks so much for listening.

*Adam Guzzo:*

Thanks, Chris. Really appreciate it. Very insightful. And I think a few follow up questions for me to dig in a little bit more. We heard from the group on some of their challenges and barriers, lack of value proposition, lack of a process or team.

So I'm curious to hear, as you reflect back and have talked with some of your colleagues, what's the biggest challenge you and your organization before you joined, faced and really generating and then sustaining that buy-in for data-driven energy management?

If you want to follow on that, in terms of how did you address some of those challenges? I think that'd be helpful for our audience to hear.

*Chris Kramer:*

Yeah, I heard that loud and clear from the responses to the poll, the lack of process and not necessarily having a champion. I think that was a challenge for us as well. But we did have a small energy team in our environment department that had this vision that was beyond just energy management by itself.

But I guess thinking of it, finding someone, whether it's yourself or someone you work with, who can envision what an energy data management platform can do for your broader environmental sustainability goals. If you are a city that has carbon emission or energy efficiency goals, I don't think you can achieve them without having a granular view of your energy data.

So the buy-in is difficult. I mentioned that each ownership department is monitoring their monthly bills to a certain degree. Now we actually get a bulk digital data file that doesn't go to the owner departments, they can always view it. But it's not the same process. And having a change in processes can be a challenge.

But ultimately, the energy data is available for the same people who would have seen it. It's just coming in digital form or in a PDF version of your utility bill. It can still be tracked and still be used to full extent that an owner department might need it.

*Adam Guzzo:* And Chris, more specifically, when you guys made the case for establishing data-driven energy management, which the system obviously is part and parcel with, did you guys go and make the case through operational savings and improvements or streamlining things, making it easier for departments?

Did you talk about it in terms of energy and cost savings? Speak to that a little bit in terms of how did you go after that business case there in Boston?

*Chris Kramer:* Yeah, I would say all the above. I really think it was that seven-figure billing error that really got us thinking about how we keep a closer eye on our utility bills in general. I'd be interested to know, it's not really something we can necessarily have a dialogue on, but if there were any resulting actions from some of the billing errors that were detected by our audience members.

But this one certainly spurred dramatic action. But I think all the above, operational savings, just streamlining process, the folks who work in our various department, finance teams have plenty of other things to do other than double checking utility bills. That was in some ways a selling point, even though it was a change and a challenge. So, I would say all the above.

*Adam Guzzo:* Got it. Yeah. Last question. And also, this one sort of a high level, one or two lessons learned, or if you want to think about it as what advice would you offer to those who are trying to establish data during energy management in their organization?

*Chris Kramer:* Yeah, I was just looking at the payback period, because a lot of these things come down to dollars and cents. And our budget department loves this enterprise energy management system. It paid back. I'm just looking at the total number of credits we've received, not including in that seven-figure billing that was not in our favor.

We've detected close to \$2 million in bill credits over these six years. And so the system is more than paid for itself. A couple things I would recommend, one is if you're going to procure software service as we did, ask for demonstrations of the software as part of the response process for your request for qualification or proposal, set up some power users.

So there are some people across your city or municipality or state government who are really interested in energy management, get their buy-in early, and make sure that they're part of – that there isn't just one person with their hand behind the wheel. But you've got a bunch of people who are interested in engaged.

And finally, just pitch it as a means to develop broader energy projects. Even if you go, don't go the full-scale energy savings performance contract route. You're not going to be able to calculate the potential savings for a – or it's much more challenging for a single energy conservation measure upgrade in one of your buildings without clean collected data.

*Adam Guzzo:*

Yeah, absolutely. Thanks, Chris. That's really insightful stuff. And I'll point people to the guide as a way to learn more about Boston's work as a short case study on that enterprise energy management system, and it's paid back so you can learn more about that there. So thanks, Chris.

I'm going to invite Aaron Presberg from Portland Public Schools to join us. And I'll introduce him, and then he'll make a brief presentation. So he's the Senior Program Manager of Energy and Sustainability at Portland Public Schools, where he works on energy efficiency and water conservation programs.

Now, he also plans, scopes and manages energy projects, oversees the district wide utility budget, and monitors utility usage for facilities. Prior to PPS, so Portland Public Schools, he served for AmeriCorps in the civic spark program, working on sustainability projects for an affordable housing agency in Ventura, California.

And helping reduce their environmental impact for energy and water conservation, waste reduction, education and training. So Aaron, if you can join us on the screen now. There you are. I see you. The floor is yours.

*Aaron Presberg:*

Thanks, Adam. Good morning, everyone. As Adam said, I'm a Senior Program Manager of Energy and Sustainability at Portland Public Schools. I want to start off by just highlighting some numbers here. So when you hear about school districts, people talk about students, how many schools we have, square footage, that kind of thing.

But I wanted to point out the last point here at the bottom of 510 utility accounts, which is obviously important for the conversation

today. So just think about getting that many individual bills. So luckily, for me, I inherited our energy data management systems, so kudos to my predecessor there for generating that by him.

But I know enough about the story, and I know a lot of history about the struggles and how we got there and what we used to do. So I'm going to leave this slide up as just a backdrop as I talk about this. So one thing I also want to say is our COO calls me data rich, because nobody else in our department has the data that we have.

And sometimes it can be overwhelming, but most of the times it's extremely beneficial towards the work that we do. So keep that 510 number in mind as I go through this. So defining the value proposition, how do we generate buy-in for this platform? It started with my predecessor having to manually input bills.

We were getting these bills at any given time over the month, from 510 different accounts. And these were coming straight to accounts payable, and they were just paying them not paying attention to anything. So it kind of started off with like, how do we manage the actual processing of the payment of the bills?

And then how do we get all this data in one place so that we can streamline utility bill, data reporting and Bill processing. In our school district, is a little bit different than cities. Chris talked about having different bureaus and having them pay for their accounts. Luckily, for school districts, all of our utility accounts are centralized.

So that was the first easy thing to point out for generating buy-in. We have all these coming to the central office anyway, they're not being processed at individual schools or sites, so that was kind of step one, as we went on the journey to getting buy-in from leadership. So like I said, getting all accounts into one database was kind of the main goal.

When we were talking to leadership, we were talking about how much time and money this could save. It's interesting because having a data management platform doesn't inherently save energy, but it does lead to those opportunities to help you save energy. Most of my work were like, oh, here's our payback on this project.

Now, for energy management, on the data side, you don't necessarily have that payback. So it was a little bit harder to explain that. But for those who wanted to talk about money saving,

you're like, okay, what about staff time? So we looked at manual bill entry and what that would look like if we didn't hire a third party to help us with this.

And how would we manage that? Would have been an Excel sheet that we had to keep up to date all the time. We were talking about the time and accounts payable. So this was outside the facility's department, too. So all the time that our clerks in accounting were actually processing those bills and sorting the mail and having to set up online accounts for all these separate bills.

So it was just a lot of time put in across different departments. And avoiding late fees was another thing. So sometimes those would get lost, we would miss a couple, we'd have late fees getting accrued. So having it all streamlined in one place and managed by a third party, we're able to say, hey, we can avoid all these late fees.

So now, when we have these come in through our vendor, they consolidate our bills into spreadsheets twice a week. So instead of getting random bill sent to us or having to log in and pay bills one at a time, we have a consolidated spreadsheet of all the bills that came in since the last consolidation. So we get one every Tuesday, every Thursday.

It's a nice spreadsheet with all the account numbers, all the amounts and what accounts they are, what utility vendor they are. And we can just go in and say, okay, yeah, those look good, and approve them from there. So once we approve them, our vendor goes and processes those on our behalf.

So it's really, in addition to streamlining, getting all of our data and reporting in place, we streamline the actual bill processing piece, which I think is a very important thing to point out as well. So we essentially have that process automated, which frees up staff time and allows me to spend my time working on actual energy efficiency projects and programs so I'm not entering that bill data.

Okay, next slide, please. So the next step is aligning with the organizational goals. So these are energy and sustainability goals that we established through our design standards, the revamp that we did last year. I'm not going to read through all these. But we have one for energy conservation, water conservation, waste reduction, and we have also a goal to build out our solar capacity; our on-site solar.



So for the sake of today's conversation, I'll read off the energy goal. So the district will reduce our building portfolio-wide energy use intensity to 30 kBTU per square foot per year by 2040. And that's using our 2018/19 baseline 55. So how do we get these numbers? We wouldn't have been able to do this without our utility database.

We pulled all these numbers, the reporting does the calculation for us on the EUI, so you don't have to do any conversions to kBTU. You don't have to do any math. It's super easy, we can pull it by site, we can pull it by district-wide numbers, however you want to look at it. And you can export those into Excel and manipulate those reports however you want.

So we're able to look at that data in 2018/19, okay, what's our baseline. 55 kBTU per square foot per year. So that enabled us to see where we were at, get that baseline and then we are able to then look at, okay, what's a good goal. So basically, my point here is, if you have goals as an organization, it's really, really difficult, if not impossible to do without having a data management platform, so that you can pull those reports and look at the numbers. So I would say, both for getting a baseline number and for setting goals, and of course, tracking progress on those goals, it's very important to have this system.

And then I will say one more thing, as far as our goals, we are part of DOE's Better Buildings Challenge. And speaking about data entry, now we have to put in our data into ENERGY STAR Portfolio Manager. And this is part of our contract with our vendors that they do that upload for us. So they pull all the data from our platform and do an automatic upload into Portfolio Manager on our behalf, which of course saves us a lot of time. And that's all I have for you today. So thank you.

*Adam Guzzo:*

Thanks, Aaron. Appreciate that presentation and appreciate your insights. Just a couple of follow up questions. And before I do that, a reminder to the audience, please go into Slido and enter your questions. We're going to turn to audience's Q&A here in just a minute.

But a couple of follow up questions for you, Aaron. Similar ones to those I posed to Chris. As you think about generating buy-in, sustaining buy-in, what were some of the challenges that you faced, maybe early on, and what are some of those that you guys continue to face? And how have you addressed some of those?

*Aaron Presberg:* Yeah, I would say like, overall skepticism, because this isn't just related to energy management facilities, it kind of crossed over into our budget office and accounting. It was kind of like, oh, well. Our accounts payable department was like, we don't really want a third party handling our bills for us, that's kind of weird.

They were a little bit skeptical about that. So we had to talk about how do we go about that, and basically, we ended up on, it would be on me to approve the bill consolidations. So they would come to me first, I would go through them, see if they look okay, make sure that everything looks accurate, just a quick run through.

And then I send an email to accounts payable saying, hey, I want to approve this bill consolidation, please move forward with processing these payments. So that's how we figured that out. We've gone through different iterations of it, but that's how we've been doing it for the last five or six years.

And I would just say simply explaining the value of it. Like I said before, it doesn't inherently save energy by paying for this service, leads to energy saving opportunities. I work on this stuff every day, I'm sure most people on this call do as well. So it's easy for us to understand how valuable something like this is, and I can honestly say I can't do my job effectively without it at this point.

But not everyone has that same outlook. So knowing your audience and knowing how to explain that value to leadership or whoever might not be doing this every day.

*Adam Guzzo:* That's a really important point. And when we talk about that in the Energy Data Management Guide, I'll make a shameless plug, just identifying who those key stakeholders are in the process, getting their buy-in early on, learning to speak their language, whether it's operational improvements, making their lives easier, streamlining their day jobs.

We're all in trying to do the best we can. I haven't met a person yet who's not excited about reducing barriers to being more effective. And so where we can speak to how this supports that is really impactful. You've mentioned accounts payable, we heard from Chris about other offices that can benefit from this type of established program or system.

Our last question and we'll turn to audience Q&A. Lesson learnt, Aaron? Maybe, point of advice. You've been doing this now for a while, others may be just getting started. So anything that you would target there in terms of, hey, this is a really key thing, I wish I'd known at the beginning, that you want to share or this is something that you would be sure to do if you're starting out?

*Aaron Presberg:*

Yeah, I think the biggest lesson learned is it depends on who your supervisor is and who your budget holder is that is approving these programs and expenses. So I think, for me in facilities, like I already said, it's, oh, what's the payback for this? What's the value here? And it's not that simple. It's not that cut and dry with a database and a platform like this, where it's not inherently saving energy.

So I think our biggest lesson learned is you can't track what you don't measure. So just making that connection to figure out, okay, if you do want to set goals, if you do want to save energy, how are you going to know that you're doing that? How are you going to know that you're progressing towards those goals, or that you're actually making strides if you don't actually track it?

So I think just spending the time to put together that value proposition of why this is helpful. And if you want to make that impact, as far as energy savings or water savings or waste is related to this too, you really need to have the system to track it.

And some people are more motivated by cost saving, some are more motivated by environmental or climate goals, carbon reduction. So is just kind of knowing your audience and figuring out how to frame it so that you can really show how valuable this is.

*Adam Guzzo:*

Fantastic. Thanks, Aaron. Great advice. Chris, you want to join us back on video, we'll do the audience Q&A now. So fellas, I'm going to be looking at Slido here on my screen, and I'll run through the questions that are most popular, I think, most salient to our discussion. Chris, I'll just note, there's one in here asking for a link to the enterprise data management system.

So if you're able to log in and provide that, that'd be great. Aaron, I imagine other folks would be interested to see yours as well, some came in before you spoke. But if you guys would be willing to do that, that'd be great. I'll start with one here, which I think is a really important question. It's more of a common, but I think it's something I'd love to hear you guys address.

So it says cost savings tend to accrue to the general fund, not the participating agency, hence some of the pushback that some receive. And I'll just note that we actually have a case study in step six of the guide on Philadelphia.

They had an energy efficiency incentive program for city departments, where they set up what they called a Green Bank, so to speak, but not in a Green Bank sense that you might think of when you think of Connecticut and others. Where some of those savings would flow back to this centralized place.

And then make sure that would go back directly to the agencies or individual departments that saved energy. So that's an example of one you may want to look at. And Aaron and Chris, maybe, Chris, we'll start with you and the Aaron, how do you address that challenge in your particular jurisdiction?

*Chris Kramer:*

Yeah. So cost savings, maybe is more of a question of – there's a question of catching bill errors. And I think you'd be hard pressed to find anyone in your organization who doesn't want to catch bill errors. But the other side is what is the data management system enable? And I think maybe that's what you're getting at.

Now you're tracking energy consumption data on a very granular level, you're able to use it to make investments in energy efficiency upgrades and those savings what you're saying is go to a general fund. That is true. I would have to look at our past seven years of approved budgets.

Even if the operational budget for utilities has gone down, I highly doubt that the overall budget for a given department has gone down proportionally as a result. We are able to peep through the performance contract model, if you're asking about that, we're able to pay off the bonds for the upfront capital investments based on future energy savings.

And the departments get brand new equipment that doesn't break down as much. So I think the tradeoff is well worth it. I hope that answers your question.

*Adam Guzzo:*

Aaron, any thoughts on that? I've heard this before like, okay, well, we save energy, we have a smaller utility budget now as a result of that, and so we don't really see the savings in our department. So it's sort of like great, that we did all this work to save energy.

Our department just gets now a smaller utility budget, because we've done a great job with efficiency or operational savings and someone else gets those benefits. Is that something that you have run into in your school district?

*Aaron Presberg:*

Yeah, it's a good question, something that we talk about quite often. For us, our general fund is what pays for our teacher salaries, all of our school supplies, think about textbooks. Our core mission as a school district, of course, is to educate students.

So it's not something that I pushed hard on, because I think that it almost works in our benefit to say, hey, if we can save energy, that's more teachers, that's more textbooks, that's more school supply, that's investing into our core mission as a school district. So I've been hands off on that.

We do we do keep our incentive dollars in our department. So when we get incentives on energy efficiency projects, we will bring those back into our budget. But as far as general fund utility dollars go for a school district, I think it makes a lot of sense to have that go back into education.

*Adam Guzzo:*

Great. Let's hear another one here. So would either of you recommend doing only quarterly updates for data as a way to win over management who doesn't see the value? Or have you experienced incidents with errors that show up, but your big cost savings you needed to catch quickly?

I think it's important questions. There's an operational cost to how often you're tracking, how often you're reporting. As you guys have been doing this from a value proposition standpoint, how often do you report up the chain or along the chain to key stakeholders to make them aware.

And I'll just offer my own anecdote, which is obviously, the quicker you catch an error, the quicker you identify an issue, the sooner you have an opportunity to rectify it and reap the benefits and savings from it. So I think the more often the better. But it's not always as simple as that. So I'd love to hear what you guys think, Chris and Aaron. Go ahead. On you, start this time Aaron and then we'll go to Chris.

*Aaron Presberg:*

Yeah. Leadership is most likely going to talk to me about budget. So we have monthly budget meetings in our operations department. And we're basically comparing spent to date for the

fiscal year, and then we're forecasting the remaining amount. So for me, we're talking about utility budget.

So it's really just looking at district-wide numbers. What are we budgeting versus what are we spending? Are we on track as we look towards the end of the fiscal year? So that's monthly, very high level. I'm looking at things more granularly, day to day, week to week, month to month, but I'm not reporting that up to anyone.

So I think quarterly is probably a good interval. It just depends on the organization; it depends on leadership and what they want to see. I would say quarterly is probably a good interval, I would say. Monthly, if you're looking at data, too, like looking at kilowatt hours in addition to the budget, then I would say, quarterly is probably a good place to start for us.

Our main metric is EUI. So that's more of an annual metric. But as far as budget goes, monthly to quarterly, I'd say, on a higher level is probably where we're at.

*Adam Guzzo:*

Okay. Chris, what do you think? What has it been like for your organization?

*Chris Kramer:*

Yeah. We received quarterly bill summaries. We receive monthly statements and summaries and data on our platform. I can't really imagine going to quarterly. We have reporting obligations throughout the year, a lot come in kind of March, April timeframe, including Better Buildings Challenge.

We have a Green Communities reporting obligation in the fall or early winter, and we have a summer reporting obligation. So I think that'd be a challenge. I think it's possible to quarterly. It depends on what your needs are. But I think it's helpful to have. Maybe that's a cost saving measure.

But remember, you're getting utility bills every month or every day or every week. So it's all like the utility bills aren't there to be managed and grouped, it's just maybe a matter of how often you're looking at them or that that kind of database is being updated.

*Adam Guzzo:*

And how about up the chain or not reporting out for programs you're involved in but making leadership or others that you want that buy-in, how often are you making them aware of the impacts of what you're doing?

*Chris Kramer:* Right. So we have one kind of budget season that lasts from about November through February, I would say, of every year. But it's pretty easy to put together our budget numbers based on the data that we have. But honestly, I get questions all the time from different owner departments about their energy bills and trends and just account opening and closure.

Our energy management system does a lot and our associated consulting services do as well. One of my core job functions is being a central person to answer utility invoicing questions. Yeah. And I'll just say that maybe that maybe comes across as creating.

So previously, all of the individual departments might have been able to answer those questions by themselves, and that was before my time, but I don't really think that they have the same working relationship with our local utilities that we do now as a result of the system.

*Adam Guzzo:* Yeah, more centralized approach can help streamline things, that's for sure. Especially when reporting up and out. Last question here that we'll have time for. And both of you maybe in a little more lightning round. It's directed to you, Aaron, but I think it's relevant across the board. Says how does Portland Public Schools, how does Boston, how does any organization use the billing data to then pursue energy savings opportunities?

What's the link between the energy data and say — equipment? So how do you guys take what you're learning from your data management efforts and platform, and then connect that back to, alright, here's where we need to make targeted investments or operational improvements. And Chris, why don't you start this one and Aaron, you can close us. Let's do this in about a minute.

*Chris Kramer:* Yeah. For the performance contract, for example, we set a baseline of consumption for all of our utility accounts. And it really enabled — just having that data in one place, allows our performance contractor to kind of set a baseline and then project energy savings. They get to look at the monthly billing data.

In some cases, we have interval data that's available. One thing that we actually probably need to make progress on is including interval data, which is not really part of your monthly bill, on our enterprise platform. Because that can give you an insight into potential savings for demand, implementing and how ECM, energy

conservation measures, could impact more than just your energy but demand.

*Adam Guzzo:* Aaron, how do you take the data and turn it into real savings? I think that's sort of the crux of the question. Doesn't necessarily save it, just know that you have the data. So what's that next step?

*Aaron Presberg:* Right. So like I said, we have that baseline EUI number, and we have that by site as well. So we have that baseline year, but we also have clean data all the way back to 2010. So we can go and look at the trend of how each site has been using energy over the years, and we can say, okay, why is this one going up? Why is this one so much higher than others?

We can compare that site to site and then once we have that data, we say, okay, here are three worst sites, let's go into those sites and do targeted energy audits, we can figure out what's going on there. And most of the time in the northwest we're lucky because a lot of our schools are not cooling.

So we know if gas usage is high versus electricity, we know that's likely an HVAC issue or heating issues. So we can go in and target the audit for HVAC versus lighting or whatever it might be. And we also use an ESCO. So we'll go in and do a bunch of energy audits on our highest users, and then figure out what's going on, and generate a bunch of ECM and figure out how to tackle it from there.

*Adam Guzzo:* Yeah, it's great module to target and prioritize. Absolutely. All right, well, we got to wrap there with these guys. I'm going to do a couple of closing slides, and you'll see their contact information at the end so we can address more questions. But hope you enjoy today's webinar. I hope you'll come back for parts two and three.

As I mentioned before, on November 4, we'll talk about building a solid foundation for your energy data management program, walking through steps three through five of the Energy Data Management Guide. And then we'll wrap up our series on December 2, talking about how to hardware energy data management. And that's looking at steps in section seven of the guide.

So you can register for both of those on the events and webinars page on the Better Buildings Solution Center, where you can click on these embedded links once they're made available. On the next



slide are some other tools and resources. I'm not going to have time to go into great detail to those, but I'll just flag the building performance tools website.

That's a new DOE website that showcases a comprehensive suite of tools for accessing managing and analyzing and sharing your building energy data. So I'd encourage you to check that out. There's a number of tools in there and highlights. Many of them are also, we talked about in the Energy Data Management Guide. And again, you'll get these slides when you click on these links.

Let's go to the next slide. Better Buildings Webinar Series. So if you like this webinar, there's more like it. I encourage you to check out both our past and upcoming webinars. We've got webinars out through April, covering topics such as assessing and reducing body carbon to job training and career awareness strategies for workers in the built environment.

So you can see the link there. I encourage you to check out and register for more of our webinars in this series. We also have on-demand webinars on the next slide. So if you want to look at past webinars we've done from summits or other webinars series, you can find those housed there.

And then finally, just like to thank again, our panelists. Thank you, Aaron. Thank you, Chris. Really appreciate your insights your time today. Feel free to contact us. You can see the contact information for both of them, as well as myself here on this slide.

Sorry, we couldn't get to all your questions, happy to address them offline where we can, and also encourage you to follow the Better Buildings Initiative on LinkedIn and Twitter and you can see our respective handles and icons there on the slide.

And then you'll get an email notice when today's recording and slides and transcript are available on the Better Building Solution Center. So look out for that. With that I'll say thank you everyone. Have a great Thursday. Appreciate you joining us.

*[End of Audio]*