

Ethan Rogers:

Hello, everyone. Welcome to the 2022 Better Building Summer Webinar Series, dedicated to bringing you the latest actionable insights from leading industry experts. This annual series is a chance to explore the topics, technologies, and trends that affect your organization, as well as efforts to accelerate energy efficiency adoption.

Before we dive in there are a few housekeeping points I would like to cover. Please note today's webinar is being recorded and will be archived on the Better Buildings Solution Center. We will follow up when today's recordings and slides are made available.

Next, attendees are in listen-only mode, meaning your microphones are muted. If you experience any audio or visual issues throughout the webinar please send a message in the Q&A box located on the bottom of your Zoom panel.

I think we can go to the next slide.

We're going to be talking about driving decarbonization today using the 50001 Ready program materials, specifically the Navigator. And then I would like to introduce to you the presenters today.

Next slide.

First of all is myself, Ethan Rogers. I'm a technology manager with the US Department of Energy's Advanced Manufacturing Office. I manage our Energy Management Program, which is inclusive of the 50001 Ready program that we're talking about today, as well as the Department of Energy's efforts to support energy management systems before the ISO 50001 Technical Committee on Energy Management Systems.

I'll be joined today by Paul Sheaffer. He is with Berkeley Labs and he is fundamental to the 50001 Ready program, leading the cohorts and many of the other activities involved in it.

So we'll get started here. I guess next slide.

We're going to be using Slido today. This is an interactive question and answer and polling and feedback form. Please go to www.slido.com on your mobile device or by opening a new window on your internet browser. Today's event code is #DOE; really complicated there.

If you'd like to ask our panelists questions please submit them anytime throughout this presentation. I will be answering the questions near the end of the session, but you can select other peoples' questions, give them a thumbs up – or use the thumbs-up icon to elevate it so that the most popular question will move to the top of the Q&A and so we'll answer them in those more as we get onto it.

Let's start with a Slido poll here and learn a little bit more about yourselves. Next slide.

We want to learn more about you, so tell us a little about where you work, what type of organization you're with. We're particularly interested if we have any of the technical account managers for the Better Plants Program on today.

Yeah, this comes along here. Looks like we are others, so that tells me that maybe when we're setting up our selection to reach more categories then.

Lots of government folks; no surprise there. Commercial, manufacturing, academic. Cool. I think starting to stabilize here. Can I see how many folks we have? A little – seems to be on the bottom. Cool. I think we can go on to the next poll.

Interested to know what programs you're already participating in. I have made the assumption that many of you are here because you are in the Better Buildings and Better Plants program, and they have recently joined the Better Climate Challenge. Of course we're going to be talking about how the 50001 Ready program can help those who are involved in the Better Climate Challenge. See how many. Lots of Better Buildings folks, lots of Better Climate Challenge folks. This is great. This is good.

Oh, good, some people are already in the 50001 Ready program. Some participation in utility sector SEM programs, a few folk involved with IACs. We even have some SEP folks here. This is excellent. Happy to see those.

Great. Okay. Well, we can go on to the next slide.

So let's kind of dive in. As I mentioned, we're going to be talking today about driving decarbonization with 50001 Ready. The premise is – and I hope I convince you of this – an energy management system that is compatible with the ISO 50001 energy

management standard is a great way to organize your efforts to decarbonize.

We can go to the next slide.

So you've joined by the Better Climate Challenge or you have some other commitment to decarbonize, maybe a corporate sustainability goal or maybe you're just having discussions within your organization about what can you do to decarbonize. And like energy efficiency, you can approach such a perhaps overwhelming task with an idea of doing one project here and one project there and working your way into it, which is perfectly fine. We sometimes refer to this as an ad hoc approach. Or you might try a more systematic approach, which means you're going to build some structure around what you're going to do. You're going to get a lot of people involved; it might not be just one or two people who are passionate about it, but you're going to get the organization involved.

I'm going to suggest this would be the long-term, the more successful way to go. I don't want to discourage you from doing anything, 'cause something is better than nothing, but if you're going to jump in with both feet, let's talk about how you might go about doing that.

So next slide.

So if you're going to be decarbonizing you've got a couple different categories – actually several different categories you're going to be pursuing projects in, but you might group them in a couple other scenarios. One is technical, different devices, if you will. You might change some of the transportation things you're going to do. You might look at hybrids or electric vehicles, or you might move to different types of fork trucks and the like. You're going to be looking at the different manufacturing processes that you have, changing processes. You may be considering some fuel switches, moving to a biofuel or electrifying something. And of course you're going to be looking at energy efficiency; maybe more efficient light bulbs, more efficient motors, more efficient pumps, fans, compressors, things like that.

But you're also going to be looking at how do you things, how do you organize things. You know, the staff competency; you're going to be training people, you're going to be tracking data, you're going to be analyzing data, and these are all management systems. And it just so happens that the intersection of this too is energy efficiency,

'cause a lot of energy efficiency is operations and maintenance stuff. It's not just the more efficient pump; it's operating the pump in an optimal way. And so keep that in mind as you think about how you're going to decarbonize; you're going to have to have a management system and you have to do some technical things.

And as the little man at the bottom says, "Wouldn't it be great if we had a ready-made tool and protocol for doing this?" And we just happen to.

Next slide, please.

So any type of management system – oh, I got ahead of myself. The reason why we're going to suggest to you to consider an energy management system is because it produces more savings which are sustainable over longer periods of time. So think about a compressed air system, you go in, you fix all the leaks and everything, but if you don't maintain it those leaks come back. so but if you have a system in place you'll maintain that system, you'll continually improve how you're operating your compressor system through say more energy, and those savings – those initial savings will be more sustainable over a long period of time, and you also find additional savings.

There's a lot of words on this slide, probably more so than I know to put on, but let's focus on the Whisker chart. And what this Whisker chart shows is a set of about 90 organizations, 90 facilities that participated in our Superior Energy Performance 50001 program. The facilities that participated in this program have been certified to the ISO 50001 standard, and have also participated in and been certified to the SEP 50001 program, which means that they've brought in a third party to verify their claims with energy savings. So if an ISO 50001 certified energy management system means people can trust you have a robust rigorous energy management system, certification through the SEP program means you have a robust third-party verified measurement and verification of energy savings plan in place.

So admittedly the organizations that participate in the SEP program are leaders. They are achieving results that are far and above what most people would achieve. But as you can see here, that they are saving 4-percent in the first year and maintaining that almost a dozen years out, to 3-percent, over 3-percent. So this is the payoff. This is the payoff in dollars and cents and energy savings and GHG emissions not emitted for having a robust energy management system. So keep this in mind as we move forward,

recognizing that putting in place an energy management system is a serious task, but there are serious benefits to it.

Next slide, please.

So there's lots of parts to any type of management system, whether it's for energy or for carbon, decarbonization. You're going to have committees, you're going to create some structure, leadership has got to be involved. You're going to have accountability at all levels, people are going to be given new authorities. You're going to be developing leaders, training them on how to manage a sustainability program, you're going to be training your line staff, including, as I mentioned, people like in finance, and purchasing, 'cause they're a very big part of any sustainability program. So be training them, they're going to be setting policies, procedures, set new data collection processes, reporting, communications, and you'll probably also be investing in some new technologies.

So there's an awful lot of overlap here whether you're doing quality, environmental management, energy management, or decarbonization. So if you have an existing structure this is something you can build into it.

Next slide, please.

The ISO 50001 Energy Management standard tells you what you must have to get certified. It does not tell you how to get there. The document is fairly small, right? It's a bunch of shells. And so we took all of the requirements of the standard and broke it down into 25 discrete tasks and we created the software platform around it. You can see some screenshots here. The dashboard there on the bottom center is probably the key one, 'cause it's going to allow you to track how far you're moving along.

So let's go to the next slide. I mentioned that we broke everything down into 25 discrete tasks, and we kind of looked to the TurboTax software tool as a guide when we create this. We wanted it to be a do-it-yourself type of tool. We have found that most organizations tend to use either some utility sector program or they bring in a consultant or they participate in one of DOE's technical assistance programs, some of which I'll talk to you about here in a minute.

But you could just create an account on the Navigator, then create a project and then work your way through; all the information that you need is there, and it checks off and it keeps track, allows you

to communicate with people, assign tasks, all kinds of nice functionality there.

Once you've completed those 25 tasks you can, at your election, send to us in the first year some baseline information, in subsequent years some high-level performance information, as well as fill out our self-attestation form saying you've completed those 25 tasks. And if you do that we will recognize you as being 50001 ready, i.e. ready to pursue certification to the standard. Whether or not you choose to pursue that certification is up to you, but you're close, right? You're really close to being ready. You just would need to bring in a third-party consultant and go through the audits and things like that.

Next slide.

There are all kinds of resources in the Navigator. You can download these and use them by themselves. We're aware that many people do. We're actually aware that many people have downloaded them and then uploaded them into existing software programs management systems that they have of their own. Even though the Navigator is open source, sometimes it might just be easier to just transfer the materials, but you could conceivably manipulate it if you wanted to.

The online Navigator, as I say, it's free; there's no charge for it. The only information we collect is your location and the information you provide to us. We do not collect any utility data, we don't want it, it is very much your information and your tool to use.

It also has a lot of functionality for multiple sites. So if are a corporation with multiple sites you can establish a central function and they can monitor the progress of all the different satellite sites. They could even send information through the platform to them. They could assign responsibilities. There's an awful lot of capabilities within the platform.

It is supported by Help Desk out at Berkeley, you can send them questions. Many utility programs are using these materials, and this has created standardization for them so that both in terms of the implementers are trained, they can move them around from different service territories, but also if you've got a facility that has plants and multiple service territories and they're all using the Navigator, there's some commonality there. So it's nice in that regard; we're seeing the Navigator used across North America.

There's several plants up in Canada even that use it. And of course this is all backstopped by our ISO 50001 experts.

Over on the right you can see some additional tools and resources. I'm going to get into those, the Navigator worksheets; the dashboard; the energy footprint tool; the EnPL Lite tool, which is a regression analysis tool. These are all accessible through the Navigator platform. And I suspect many of you have seen some of these tools if you've participated in the Better Plants program or even the Better Buildings program.

And of course it mentions in the bottom that we have virtual cohorts that we've organized. I'll mention a little bit more about that.

Next slide, please.

So when you create an account and you create a project you're going to start working your way through these 25 tasks. And with each task you're going to come to a page like this and it's going to have a Getting It Done to add a Task Overview tab, full description, and a playbook. And the Getting It Done is just a simple explanation of what's this about. The task overview tells you why you have to do it; it connects it back to the standard, right? And then the full description, lots of reference materials, links, definitions, more detailed how-to descriptions.

And then the playbook is a series of Word documents that you can download and manipulate to your needs. There's guidance on how to fill it out, but this is how you can fill things out. And if you don't have your own documents on how to keep track of your progress you can use these and create an overall playbook if you will.

Next slide.

Again, it's also mentioned that we have some very specific guidance for wastewater treatment facilities and for government facilities, and as you'll see later, for decarbonization. So if you're a wastewater treatment facility you can self-identify when you're setting up your account that you are indeed a wastewater facility, and then when you come to each of these tabs you'll get additional guidance. In this case we have all the playbook files filled out so you can look to them for examples of how you might fill out your own. When you come to the full description there's additional guidance. In this case we're talking about scope and boundaries that can give you – it gives you information on how you can set the

scope and boundaries for your energy management system for your wastewater treatment facility.

Next slide.

And actually I suppose I got these slides out of order; I should've had this one ahead. So you can see a blank playbook page over here on the right. And again, this is a Word document, so you can fill it out; it's easy enough to fill out. It's also easy enough to change and manipulate as you need to.

And on the left you can see additional information about setting scope and boundaries, where to start. If you have an existing ISO 9000 or 14000 system in place there's some transition tips. Then you can actually merge your energy management system into those existing management systems. If you're involved in the Energy Star program, how to use that information. So again, very robust system, good platform to use with existing management systems.

Next slide.

And then we also have this tab you can go to in the menu for just additional resources, and one of those is slide decks we have put together on the 50001 Ready program and the Navigator. And some of those are just a brief introduction, such as I'm doing today, for end users. You can use this if you just want to brief people within your organization. We're aware that many utility programs have grabbed some of these materials; they've pulled slides out and dropped them into their own formats and saved themselves probably hours of having to create their own introduction slide decks.

But there's also some even more detailed slide decks that our instructors have used when they have done virtual implant trainings on the 50001 Ready program. So these include the slides that you would present to people over a multi-day period, as well as the instructor notes. So a lot of really robust and deep resources here that you can use to help you educate folks within your organization or the people that you're engaged with. If you're a consulting firm you can use these and they can help you communicate with your clients and the like.

Next slide.

Now we're getting into the core of what I really want to talk to you about today, and this is the new decarbonization guidance that

we've created. So you can go to this website here. We have not yet fully integrated these materials into the Navigator; that will happen later this summer, possibly fall. But we've been testing these materials out, and so right now they just exist in this website. You can go to this 25 – you know, the guidance and tasks for each of those 25 tasks. There's also one huge document that has everything in it. And then there's also a form that you can fill out that provides feedback and there's an appendix for other resources that might be useful to you.

So I encourage you to go to this website, download the materials, take a look at them. And ultimately we're going to be incorporating these into the navigator just as we have those specialized guidance for wastewater treatment facilities.

Next slide.

So what's this going to look like? Well, before I get to that I also want to let you know that we have anchored all these materials on existing protocols around decarbonization. The World Resources Institute's GHG protocol, the World Building Council's GHG protocol, as well as the US EPA Center for Corporate Climate Leadership inventory guide and the ISO 14064 quantification and reporting of GHG emissions and removals guidance.

So what this means is that this is not a one-off decarbonization type of initiative. It is anchored in the most popular ones out there. So if you're using these materials you know that you're standing on solid ground. We didn't create something new that you'll then have to somehow incorporate into whatever else you're doing, like the carbon disclosure project or something like that. This is well-anchored, you can rely on it, it should be compatible with anything that you're likely to be engaged in.

We've been testing these materials with a couple of our virtual cohorts. One is West Fraser, a forest products company in the southeast part of the US; they have several different facilities there. And the other is Polaris, a company that makes snowmobile, personal watercraft, and ATVs. And they came to us and said, "Look, we want to use energy management to focus and organize our decarbonization efforts."

Next slide, please.

So coming back to what's this going to look like. Remember that when you open up any one of these tasks – any one of the 25 tasks,

and again, we're coming back here to the scope and boundaries tab, you're going to see this Getting It Done, which is a simple description, a task overview which explains the connection to the standard, the full description, all that resource material, and then the playbook sheet, which you can use to document your progress on that task.

Next slide.

So this is screenshot of the Word document that currently exists on that Berkeley website that I posted the URL for before. But this is going to get incorporated into the Navigator. And so in this case you are saying we're looking at our scope and boundaries, what do we need to consider to help us achieve our decarbonization goals, how do those two things interact?

'Cause some of the things that you do to save energy may actually drive up your carbon footprint, and some of the things that you use to decarbonize might actually engross – consume more energy. So you'll figure out what makes the most sense to you, you know, where your priorities are, but this guidance can help you think through that and document it as you're standing up your management program. They will help you think about do you want to just do scope one emissions. Do you want to include scope two emissions? Probably. Scope three emissions, maybe. You know, or which ones you do.

There's an awful lot of information here to guide you through the thinking of how you're going to incorporate decarbonization into your energy management system.

Next slide, please.

Again, we created all of this for organizations that are participating in a program such as the Better Climate Challenge. This gives you the structure that you may already be using. If you already have an energy management system in place then this is something that you can use to guide and organize your decarbonization efforts. Your collection of data, your analysis of data, the teams that you have, all of that structure is already going to be there; you're just expanding the scope of what they're working on.

It shows you how you can leverage existing management systems. If you don't have energy management system in place but maybe have a 9000 quality management system or a 14000 environmental management system, I can use that. And again, it helps you

understand the tradeoffs between various actions you're going to take as you take this journey. And of course as I mentioned, it's anchored in well-established protocols such as WRI GHG protocol, it's compatible with all these things. And ideally if you are participating in the Better Climate Challenge we hope that you'll consider using the 50001 Ready program and Navigator to help achieve that.

To that end let's look at the next slide.

So I mentioned earlier that we're doing some virtual cohorts. We started these about the time the pandemic started. With the Federal Energy Management program we needed to reach multiple facilities that were not located close to each other and did not have budgets to to send people to a centralized training. So through a series of webinars and one-on-one calls we started engaging these federal facilities, and it proved so successful we're now doing it across several different energy efficiency and renewable energy offices.

These cohorts, these online cohorts are free, but what we do ask is in exchange that the organization make a commitment to complete the 25 tasks to implement an energy management system, and self-attest and become recognized as 50001 Ready. Of course part of that is supplying us with some high-level performance information. Not utility-level, not numbers and dollars, but just how much energy did you save last year, was it 5-percent? Was it 2-percent? Those kinds of things.

Next slide, please.

So right now we have – actually we have a couple more cohorts that have recently joined. Borg Warner, which is an automotive parts supplier; as well as Nematik, also in the automotive industry. We've learned that many organizations have existing management systems, and when they leverage those they can really hit the ground running. And we're also finding that they also think that energy management is a great platform to drive their decarbonization efforts. We're finding that they really like the multisite feature of the Navigator; it allows somebody at headquarters to see how the different plants are progressing. You know the dashboard, right? They can see how they're progressing on those 25 steps.

And they also tell us "More case studies. More case studies."
Seeing what somebody else has done always makes figuring out
what you need to do a lot easier.

Next slide.

So here's what it would look like. You're going to have group
trainings, and many of our cohorts include several companies that
are not competitors, so you get that group learning. But some of
them, such as the ones I mentioned earlier, are multiple sites from
a single organization. We've done both; they both work great. But
so once a month you'll have this group training, group learning,
sharing, all the benefits that happen from not just trying to do it all
on your own, but working as a group and sharing best practices.
And you can see here on the right the different topics, the different
tasks that are covered as we go through the – and again, several
months, right? So I'm meeting each month. And then you get
homework and then the coach will follow up with each team and
do a one-on-one call, if they can answer any questions and help
them, you know, keep them on track, right?

Next slide.

This is what it might look like on a calendar. They start off with
pre-training assessment period and then you have your group
training sessions and the coaching calls, and then the post-training
assessment calls. And in between that you're working on projects,
working on tasks, doing your homework, and site implementation.

Next slide.

So here's an example of a facility at Tennessee Valley that went
through one of our cohorts and was able to save considerable
amount of money and considerable amount of energy and achieve
some nice goals there.

Next slide.

And I mentioned earlier on that we're engaging across the
waterfront, if you will. The Federal Energy Management Program
has been engaging several federal facilities such as Justice and –
I'm trying to think – I think HUD, as well as military facilities. The
Building Technology Office did a couple of cohorts, and the
hospitality sector. We are working with the weatherization office
on cohorts with wastewater treatment facilities and correctional
facilities. And then of course the Advanced Manufacturing Office

is doing a variety of cohorts with different industrial organizations. Some of them are small, many are now very large. We have Fortune 500 companies, we have also companies that you've never heard of.

Next slide, please.

As you can see the total number here and you can see the location across the country, and you can see the breakdown. And of course quite a few of these companies are already participating in Better Buildings or Better Plants program. So if you're in those programs, again, something you might want to consider is joining one of our cohorts. And of course my contact information will be provided to you at the end so you can contact me or Paul if this is of interest to you.

Next slide.

We're also working with over two dozen different utilities, program administrators, and program implementers around the country. And not all of these companies listed here are actually partners, but all of them are using our materials at some level. Many of them are using the Navigator to guide their cohorts through the implementation of energy management systems. Some of them are just using some of the resources that they can download.

If you recognize any of these companies here it might be worth a phone call to them to see if you're eligible to participate in one of their programs. Because utility sector energy efficiency programs come in a lot of flavors. We're working with the energy management programs, but they tend to have rebate programs or custom programs associated with them, so as you identify projects within your energy management system you might go to them and get a rebate or some type of incentive to help you implement that project. So it's certainly worth a phone call.

Next slide.

Let's take a poll here, ask you guys what you think. Is ISO 50001 Energy Management System something that you can use to achieve your decarbonization goals? So have I made my case? I think this is a good idea.

All right, look at that. Yeses jumped out to an early lead. Some maybes here, like to know more. Excellent.

All right, looks like it's stabilized. We can go on to the next slide. Oh, it's still jumping there.

All right, so I'm going to be joined at this point by Paul Shaeffer; I mentioned him earlier. He is with Berkeley Labs and he runs our cohorts and has been involved in all of our ISO 50000 work since its inception in one fashion or another. So when I mentioned earlier our resident 50001 experts, he's one of the people I was thinking of.

All right, so here we have questions. "How can I change hearts and minds in the organization that prioritizes 14001 and doesn't see the need to do both?" That's a good question.

So I guess my thinking is it used to be that people were focused on energy efficiency because money is just a proxy for embedded energy in the manufacturing space. So that was kind of an easy sell, right? But you have people who are focused on the environmental piece because that was being driven out of corporate, and trying to achieve sustainability goals. But if you use a lot of energy a big part of your carbon footprint is coming from that, right? So that's the connection. That's the connection between the environmental people, is that an awful lot of the carbon footprint comes from the energy you use. And so if you're managing energy then you're going to decrease that carbon footprint. And while there is a way within the 14001 to make energy a point of focus, it does not give you the structure to really go after it the way that 50001 standard does. And with a tool like the Navigator I think that you can bolt these things together and be much easier for you.

Paul, any other thoughts on that before I jump to the next one?

Paul Sheaffer:

Yeah. To add onto that, I think 50001 is a more data-driven standard; it has requirements for continuous improvement in energy performance, which will lead to continuous improvements in carbon performance as well. So I think they can work hand-in-hand, they can use the same back-office system, so I think if you've already got a 140001 system in place, implementing a 50001 system should be pretty easy too.

Ethan Rogers:

Absolutely. Next question, "As a current intern college student, what do you hope upcoming generations of employees will do with 50001 in decarbonization?"

So the one thing that I learned probably way too late after I graduated college was the concept of continuous or continual improvement and kind of total quality management. My first introduction was the ISO 9000 Quality Management System. And I later worked for a US Department of Commerce's Manufacturing Extension Partnership Center, where I learned about how the concept to plan, do, check back continuous improvement help organizations from the ground up be more efficient, how it empowers workers to see problems and come up with solutions, implement solutions, and be problem-solvers.

You know, decades ago a lot of businesses are run top-down; they just push down all the decision-making, they left all the decisions to higher-level people, and the workers just had to kind of suck it up. That's not the case anymore. Manufacturing is much more dynamic, people at all levels are participating in coming up with solutions and implementing solutions. And so if you've not learned about things like lean manufacturing or Six Sigma I certainly encourage you to do so, because it will change your life. You will use those skills in your personal life, but you can also use them – to get to the answer to your question – you can also use them to help save the world through energy efficiency and decarbonization.

So I think that if you can make a tie between decarbonization and continual improvement – 'cause all this stuff just drives down cost of manufacturing, right? Anything that is waste is unnecessary cost, and so you're just always driving up cost, always driving up cost, always driving up waste in manufacturing. And so that's – if somebody's not paying you for it, it's waste. So when we're talking about energy efficiency in decarbonization it's just an extension of that message.

So, Paul, I'll let you chime in on this one as well, 'cause I went really philosophical there and you might go practical.

Paul Sheaffer:

No, I think that does make sense. And I think getting your arms around the ISO management system concept does take a while, particularly if you're from the energy efficiency world. But it took me a while to really understand what it was all about, but we really do feel like it is best practice and it's a good system for any type of organization. And as a college student, understanding the way – you know, the plan, do, check back cycle works I think will help you in your career.

Ethan Rogers: "What would you consider to be a basic qualifications requirement to help" – I've got to move a window here – "help an entity through this process as a consultant?"

Let me think about this. I don't think you have to be an engineer to be successful in energy management anymore. There used to be a time when everybody was either an electrical or mechanical engineer. There's so much energy efficiency now that's happening, as we just discussed, through the process of continual improvement. And I think an awful lot of stuff happens in the purchasing and finance space. You know, if you're a purchasing person and you're setting purchasing specifications, you have a lot of power over how much energy the facility is going to use over the next ten years, right?

So I think that there's a lot of different backgrounds that could be helpful, but I guess in general you want to understand the concepts of energy efficiency, you understand the concepts of decarbonization, and I think you need to have good math skills. Because at the end of the day you're going to be collecting data and analyzing it and making decisions based on the data. You don't necessarily have to have calculus-level skills, but good algebra skills I think would be useful in terms of you don't even have to know how to do regression analysis anymore; we've created the tools for you. You just have to know how to fill out the tools so that it can tell you what's driving your energy use.

That's kind of the top of my mind what I'm thinking there. Paul?

Paul Sheaffer: Yeah, I don't have much to add to that.

Ethan Rogers: Okay. "How can we convince companies that are under no pressure to change their ways due to money, political pressure, and others, to participate in 50001? Many utilities and large companies are not keen on change in areas that are coal/oil driven."

Yeah, that's always going to be a tough one. Putting in a management system of any sort is not a small lift and it takes time. I think that – oh, these kind of jumped here, didn't they? I think that if you can make the connection between wasted energy and/or pollution and variable cost of production you'll get your foot in the door. Because it all comes down to the variable costs of production, which are: labor, raw material, and energy. And everything else is overhead. So I think that if you can drive down those operational costs you can show them that pursuing an energy management system will – remember that Whisker chart. I just

show them that Whisker chart. Maybe that would be the way to do it, right? 'Cause energy is a variable cost of production and you want to drive that number down.

Paul Sheaffer: Yeah, and I think maybe looking at some of the case studies that we've developed, I mean we've really shown the business case for doing a 50001-based system, and still feel it really is best practice for providing the framework for any type of energy efficiency program or carbon reduction program.

Ethan Rogers: The next one appears to be "What benefits will 50001 give to wastewater treatment plants, especially large-scale ones that are typically just putting out fires rather than proactive on energy usage?"

Yeah, well, hopefully it will mean that you're not putting out as many fires. My early days in manufacturing most quality problems were dealt in an ad hoc fashion, and any energy issues were dealt with when somebody got an unusually large energy bill and they got angry and went "Rr rr rr" to one person, and that person went "Rr rr rr" to another person, and it worked its way down to some poor maintenance person who's in a poorly supplied maintenance shed.

So I think that what the structure of a management system does is it gets corporate buy-in or leadership buy-in to what you're doing. And this is true whether it's a quality system, an environmental system, a health and safety system, which is 45000, or an energy management system. You must have leadership buy-in and you must have participation across an organization. And I think that my experience has been that results in happier workers, more proactive workers, and fewer fires.

Now it depends on your organization, 'cause some organizations are always pushing the envelope, which means you always have some fires, but wastewater treatment facility, they're pretty much going to be doing the same thing five years from now that they were doing five years ago, so it might bring some stability to your universe. So that's my pitch.

Paul Sheaffer: The other thing I would add to that is if you've got a 50001-based system, I mean it really prevents you from putting energy efficiency on the backburner. There's a corporate culture change and energy just becomes part of the way you do business. So yeah, and hopefully there would be less fires to put out.

Ethan Rogers: "Can local governments participate?"

Paul, have we had any local governments participate in our cohorts?

Paul Sheaffer: Other than some of the wastewater treatment plants, which are part of municipalities, I'm not sure I've had any local governments. The folks up in Pennsylvania are considering it for all of the state buildings, but yeah, there's no reason it wouldn't well for a local government.

Ethan Rogers: I guess the answer is yes. "Do you only recognize US sites?" This seems like a question that somebody might be sending to us as a softball, Paul. Yes, so right now the Department of Energy only recognizes 50001 Ready-recognized sites located in the US. However, we have recently signed a Memorandum With Understanding with Natural Resources Canada, and they will be standing up their own 50001 Ready program, and so as soon as that goes live – and I don't have an ETA for when that will happen, but it will be I'm pretty sure this year – you can, when you're setting up your account in the Navigator, you can self-identify as being in Canada, and if you do that a couple of things will happen, one of which, of course, is when you submit yourself at the station for Ready recognition it will go to Natural Resources Canada and not to us. And so they will recognize you.

The other thing it gets you is some of the guidance in those individual pages right now suggest different US Department of Energy programs or programs within the United States of America. The ones in Canada, they will see links to resources in Canada. And they'll also have the opportunity to get all of it in for French for French-speaking Canadians. So I've been working on this one for a while, really looking forward to helping them stand up. We're hopeful that some other countries will ultimately also do this, but we don't have any in the pipeline yet, so right now just US and shortly those in Canada.

Paul Sheaffer: And we do have lots of 50001 Ready Navigator users from countries across the world. I mean there's probably 100 different countries that are represented as either users or sites, so we do have a lot of people using the 50001 Ready concept outside the United States, that just can't be recognized.

Ethan Rogers: I'm going to let you take the next one, Paul. "How much time do you think it takes to fill out and do the tasks?"

Paul Sheaffer: Yeah. You know, that's a good question. It depends. It depends on the size of the organization. It depends on what kind of energy efficiency program you have in place already. I don't know if you're looking for a full-time equivalent here or having hours among all the members on the team. And a lot of the activity that you're going to be doing under the 50001 Ready implementation is probably some of the stuff you're doing already. So that's a pretty hard question to answer. But we've seen organizations implement it anywhere between three months and a year, in that time range.

Ethan Rogers: Mm-hmm. Yeah. As you'll see, the cohorts we have are set to go from like seven to ten months, and a lot depends on how many people you put in your energy team; the more resources you commit to it I'm sure the longer it will take.

Let's see. Do we have any example task playbooks filled out?

Yes, we have one for a wastewater treatment facility. Do we also have one for federal government and hotels?

Paul Sheaffer: So yeah, right now in the Navigator itself I think we have the federal agency one and the wastewater treatment one, and we're getting ready to upload one for hotel hospitality and I believe also for army facilities. And the plan is to do more of these. And they're kind of a fictitious company, but it is a complete set of filled out playbooks, which you obviously can draw from when you do your own.

Ethan Rogers: "Is 50001 good for all sectors? Plants? Commercial?"

Yes, I would say so. It's a good structure for any type of organization. Certainly the more energy you use the more you'll get out of it. I'd say early adopters to a standard tended to be more energy intensive facilities, but we have seen smaller facilities use it in part or in whole. And part of our thinking behind the Navigator was to take people from where they are, take them as far as they want to go. So as much as I would love to see everybody come certified to the standard, I realize that for some people maybe just getting some initial structure in place is sufficient for now. So the Navigator has those resources for you, and so if you're just a small facility spending \$10,000.00 to \$20,000.00 a year on energy, there's still something there that I think you can get out of it.

"Does the online help have a checklist of things to check for energy efficiency on different refinery units, i.e. crude unit, hydro" – no, we don't get that detailed, although there may be some

resources elsewhere within DOE or maybe even I think the Energy Star for Industry as sector-specific best practices documents that you might check out. Within the Advanced Manufacturing Office over the years we've created an awful lot of best practices documents, so you can go to the Better Buildings Solutions Center and you'll see what is available there. There could be some case studies there that could be useful or some guidance there. But within the Navigator itself we don't have anything that specific, at least certainly not for petrochemical facilities.

Paul Sheaffer:

Yeah. I mean there are some AMO resources on kind of cross-cutting systems, so like fans, compressors, things like that that could be applicable to the processes in the refinery as well.

Ethan Rogers:

I have not personally worked with an oil refinery. I'm trying to think of any projects we might have done. The research and development side of AMO may have. But nothing comes to mind.

I will say I'm aware of the fact that there is a refinery in Saudi Arabia that has achieved ISO 50001 Certification. I believe that is correct. If you think about it, it could help, right? The same with management structure could apply to the production of anything. So there's no reason why an oil refinery or any type of chemical facility could take advantage of the tools and resources.

This last one is "I understand the DOE has researched" – and there's a series of acronyms here "formerly termed 'cold fusion'. I have seen replication of this at MIT and other venues." Boy, I haven't heard "cold fusion" in a while. Lightning in a bottle. I have no knowledge of this. This is not my area of expertise. It would be cool if we do solve cold fusion, but I've read more about our fusion activities as well as different types of vision activities than I have about this. Nothing to offer on this.

"Any suggestions for nonprofits in general and those involved in renewable energy and energy efficiency projects in particular?"

I would just say get started. You know, if you're focusing on energy usage you're going to have better results than if you're just taking a – I don't know, ad hoc approach to things. And so the more structured you can be about it I think the more you'll achieve. And so within a nonprofit or any type of organization you can create yourself a team and this team can create some structure and create projects and goals and things like that.

I see that we're kind of running a little short on time, so I need to jump on to the next slides. But thank you for all these great questions. Very helpful. I hope that you found our answers useful and insightful.

Let's go ahead and jump to the next slide.

So this webinar has been part of the 2022 Better Buildings Summer Webinar Series. As you can see, we have a great lineup of presentations through August. Visit the Better Buildings Solution Center to learn more and register for any of these.

Next slide.

The next webinar, we hope you'll join us for this, is Thursday, July 28th. It is titled "Breathe Easy: Indoor Air Quality in Education Spaces." Join this webinar to learn from subject matter experts and partners about the practices to consider in a variety of education spaces, including labs, classrooms, that can improve indoor quality and promote student health.

Next slide.

We will also be – the Better Buildings Center Plant's program will be producing the annual progress report. Each year DOE releases a annual report with key findings, updates, and metrics from the Better Buildings initiative. Visit the Better Buildings Solution Center to explore 2022 progress report to learn how DOE and partners are working towards a more efficient future.

One more slide.

If you're interested in learning more about the topics discussed today I encourage you to download our additional resources handout from the Zoom and chat box. Two things just popped up. The handout contains links to resources from Better Buildings that Paul and I have spoken about. We hope you'll enjoy these.

And lastly, with that I'd like to thank Paul for joining me today and for all of you for joining us and considering the proposal we've made, that you consider the 50001 Ready program and Navigator for your decarbonization efforts. You can find – let's see, if you have any questions you have our contact information there. I encourage you to – I have lost my space on my reading points here.

I encourage you to follow Better Buildings initiative on LinkedIn and Twitter and follow the latest news. You can find our handles by the respective icons on the left half of the slide. You'll receive an e-mail notice when today's recording, slides, and transcript are available on the Better Buildings Solution Center.

Thank you once again for joining us today. I hope you enjoy the rest of your day.

[End of Audio]

Driving Decarbonization with 50001 Ready

Additional Resources

Learn more about the topics discussed on the webinar by visiting the resources below.

Better Buildings Resources

- 50001 Ready | Getting Started: [Navigator](#)
- 50001 Ready | Getting Started: [Best Practices](#)
- 50001 Ready | [Participant Overview](#)
- Better Climate Challenge [webpage](#)

Explore more resources on the [Better Buildings Solution Center](#)

Other Resources

- 50001 Ready Decarbonization Management [webpage](#)
- 50001 Ready Navigator [Login](#)

Up Next in the 2022 Better Buildings Summer Webinar Series

Breathe Easy: Indoor Air Quality in Education Spaces

Thursday, July 28th from 11 am - 12 pm ET

Improving indoor air quality can help lower the risk of transmission of infectious diseases in learning spaces from K-12 to higher education. Promoting healthy indoor air can also improve student academic performance, daily attendance, and overall wellness. Learn from subject matter experts and partners about practices to consider in a variety of education spaces, including labs and classrooms, that can improve indoor air quality and promote student health.

[Register here](#)

Follow Better Buildings on Twitter and LinkedIn



@BetterBldgsDOE



company/better-buildings