

Pete Langlois: There we are Hello everyone.

Pete Langlois: Can my my team confirm the way our.

Pete Langlois: up and recording and good go.

Stacey Young: confirmed, we are recording.

Pete Langlois: Thank you Stacey this is P long law program manager for the Department of energy's vince manufacturing office working on our education and workforce development.

Pete Langlois: Activities welcoming you to the first of our energy awareness month webinars hosted by our our wonderful better plans team here do you mean.

Pete Langlois: Can we put up the next slide is the next slide telling about the recording let's please put put that up over again, thank you.

Pete Langlois: Just a reminder for any of you on this, but of course this call is being recorded and it will be listed if you don't want to have.

Pete Langlois: Your voice very mature and then please don't share with us, you will play opportunities to interact with us, via the chat function and we'll be.

Pete Langlois: Giving a little more details about that momentarily for those who are watching live it is Thursday October 7 2021 you know that, but there are those who will be watching this later on, thank you as well.

Pete Langlois: And for anybody who may be watching this in the next few days, or in the near future, we have several other webinars coming up in October, of which I believe we will.

Pete Langlois: tell you about right there, so, as I mentioned, it is October 2021 energy awareness month, thank you for joining us, it is also, of course, typically in October, the time when we celebrate manufacturing day.

Pete Langlois: And certainly something that is important to us that they do is a vendor events manufacturing office is the understanding that for a robust innovative energy sector.

Pete Langlois: It is truly dependent on the skills of its workforce, of which there are 10 million in the United States currently.

Pete Langlois: And we're expecting the need for several more million to enter that workforce in the next decade so With that in mind we're lucky to have Members of our better plans team.

Pete Langlois: Energy experts to talk to us about a number of different topics over the course the month as well as some of their partners that will hear about.

Pete Langlois: As we go through this the the upcoming webinars as you see the schedule there we got going on pretty much every Tuesday and Thursday this month, thank you for joining us for the first one.

Pete Langlois: For those of you who are seeing this in real time or sometime in the near future, please go back to our registration page and sign up for any of the future ones that I had linked to that should be on the next slide I believe.

Pete Langlois: i'm or will actually will put it in the chat and we'll have it held back sorry Thank you it's already down there on the bottom of the prior slide of miss that so.

Pete Langlois: Yes, please go to yes events COM slash energy awareness, along with registering for the rest of these webinars there are additional resources in handouts applying to all these topics, so if you can't make one of them.

Pete Langlois: don't fear there's additional information there as well, as I mentioned on the next slide at the better buildings solution Center.

Pete Langlois: With that, I just want to remind everybody for questions, we will take them occasionally during the presentations if there's something where it can be clarifying what speakers talked about.

Pete Langlois: Right at that particular moment time otherwise we'll do some Q amp a here at the end of our hour together so with that i'm going to turn it over to our team of Christina Armstrong and eli levine talking today about today's topic, and with it over the line.

Eli Levine: Thanks so much, and thank you to all of us who are joining us today we're very excited for this whole month.

Eli Levine: You know the the better plans program has rolled out a number of different resource documents and rather than.

Eli Levine: Just putting them up on the website and hoping that you can navigate through all the solution Center we thought we'd.

Eli Levine: use the occasion of energy awareness month to bring them directly to you via these webinars and.

Eli Levine: make it a little bit more interactive so as pete reference any questions you have fire away, I will answer them in real time or when will save them to the end up, based on.

Eli Levine: You know, whatever the powers that be running this webinar side.

Eli Levine: is the best way to handle them, so if you're here chances are you might know about the better plans program but I thought I would take a minute just to explain.

Eli Levine: What we are, but the better plants program is a voluntary program there's no cost to participate, we challenged manufacturers and other and.

Eli Levine: Other partners in the industrial space water wastewater treatment agencies and others to set an ambitious energy reduction goal and then work with us.

Eli Levine: Through the resources we offered to achieve that goal partners also have the opportunity to set water.

Eli Levine: Water reduction goals if they're interested either for their corporate goals are for specific water stress regions or to turn themselves turn their attention to waste reduction in the circular economy and set goals and leverage our technical assistance through that so.

Eli Levine: Why focus on industrial energy efficiency, honestly, if you are here, you probably understand that, but you know manufacturers use about a third of.

Eli Levine: All of the energy that's used in the United States operate their plants and the benefit of being at the weeds we have a whole lot of smart people at our national labs and around the building who.

Eli Levine: who spent a lot of time researching where where the opportunities are and why this is important and there's a lot of evidence of the most folks have.

Eli Levine: Some pretty big opportunities to reduce their energy with relatively short payback periods and.

Eli Levine: If you do this, you know, not only is it important for the nation and the world, you know, to strengthen our resiliency.

Eli Levine: You know, manufacturing competitiveness and the stronger workforce that pete was referencing but there really are a lot of important reasons for your for your plants and your for your main you know, for your companies as well you know, for example.

Eli Levine: As we detail in the report.

Eli Levine: The very activities that provide energy efficiency really also provide better control over plan assets and input, so you know One example is you know energy efficient practices, ensure that thermal resources.

Eli Levine: are applied at the right temperature at the right duration and got correct proportion to the raw materials and this control reduces the facility scrap rate, as well as.

Eli Levine: The as well as the energy consumed per unit of production.

Eli Levine: The control provides reliability greater reliability means less downtime.

Eli Levine: Less downtime means orders are filled faster, which allows the facility to complete more orders over the course of the year that's making more revenue so energy efficiency is not just about reducing your utility bills it's about reduce boosting your revenue through greater productivity.

Eli Levine: we've also seen that you know my building energy efficiency into your decision making it.

Eli Levine: You know, cut costs for to raise your productivity, improve your shareholder value improve your managerial performance, you know meet your environmental standards.

Eli Levine: You can help create energy efficient.

Eli Levine: products and market opportunities improve your competitive position, attract top top talent, that is looking to work for a company that's aligned with their values.

Eli Levine: And then ensure a better community relations and a better overall reputation with consumers so whole lot of reasons to focus on that, but by joining us on this.

Eli Levine: Thursday afternoon, you probably already care about some of these so one more sad about the better are one or two more slides about the better plans program before we dig into it.

Eli Levine: At this point we are up to over 250 partners representing about 14% of the manufacturing footprint our partners have saved you know a little you're getting the.

Eli Levine: you're getting a sneak peek of next week's Annual Report for you have saved up you know over \$9 billion in a cumulative cost savings and 1.9 quads total middle of energy safe.

Eli Levine: So if you're not part of better plans you'll allow these slides to be the case for convincing you to join there's no cost to participate, and we are interested in working with you.

Eli Levine: How does it work it's voluntary and free to participate, we asked you to set these long term goals, and then we work with you why companies join better plants, ideally it's the technical assistance every company is paired with a technical.

Eli Levine: Account manager, this is an expert based through upwards national lab to help you, and they will help you leverage the tools and resources that will go over the course of this.

Eli Levine: hour long presentation that's designed to help you with this.

Eli Levine: In addition, we want to help you, with your workforce development to meet the challenges of today and tomorrow.

Eli Levine: If you're partnering with the Department of Energy we want you to feel like you have access to everything D, we have to offer.

Eli Levine: That includes your are extraordinary national labs on the R amp D going on there, as well as our ITV or industrial technology validation pilot that's designed to.

Eli Levine: You know validate and verify the performance of new and innovative technologies to de risk them and help.

Eli Levine: You know, promote acceleration of these technologies so if your company is saying our plan keeps.

Eli Levine: You know, being pitched by vendors on these different technologies, I tell you i'm intrigued, but I just don't know if it's right for us, and I want to see how they perform in real world circumstances.

Eli Levine: The ITV program could be right for you, and then, lastly, is the industry recognition piece, and this really is twofold that it's.

Eli Levine: Not only recognizing leaders in the field, and you know, helping to better amplify your story and hold you up for the work that you are doing.

Eli Levine: But also the peer to peer learning and holding up replicable pathways and solutions so, then you may not have the right approach, but you can see what other industrial partners.

Eli Levine: Who are in similar situations are doing, and you know replicate their strategies that's one of the things that I, like most about the program how much you know one partner is willing to.

Eli Levine: Learn from and help another partner towards all of these challenges, so.

Eli Levine: With that i'm going to one of the nice things about this presentation is you, you don't have to hear from me, the whole time but you get to hear from one of our true experts on Christina Armstrong.

Eli Levine: Christina works at oak Ridge national lab and services technical account manager to a whole portfolio of companies and the Quick Start guide for.

Eli Levine: Saving energy for small and medium manufacturers was very much a collaboration between Christina and I am the team down it operates to produce so i'm excited to stop talking and turn this over to Christina, at least for a few slides here before she turns it back.

Kristina Armstrong: Thanks eli um so what Why did we want to feel special focus on small to medium manufacturing was eli said manufacture chain is a third of the US in energy use and small manufacturing sites less than 500 employees are.

Kristina Armstrong: 240 4125 out of 240 8039 firms total so most by far most sites are small, and many are very small 75% of that is less than 20 employees.

Kristina Armstrong: So these firms take a lot more energy for their energy and have a tighter cash flow, so they don't have access to the same buying power that the larger firms that our partners have.

Kristina Armstrong: And so, when you save energy it's also not just energy you go all the way you get improved control increased reliability through better equipment.

Kristina Armstrong: which reduces downtime increases production and this increases revenue so saving energy is all around very important and we want to make sure that you all have access to similar opportunities.

Kristina Armstrong: So next slide.

Eli Levine: So.

Kristina Armstrong: Before you can really get started on this you kind of need to ask yourself a handful of questions and try to start understanding the.

Kristina Armstrong: First team who's going to lead this in your company Somebody needs to be accountable for energy.

Kristina Armstrong: Preferably as an official part of their job, maybe not the only thing they do, but if it is official part of their job description that can really help both them and dedicating time to it.

Kristina Armstrong: In the longevity of your energy program, then you also need to understand why you're saving an energy, why is your company wanting to do this and get management on board.

Kristina Armstrong: From there you need to think about your goals as better plans partner you're probably pledged to save 25% of your energy intensity over 10 years.

Kristina Armstrong: And then you also need to establish a baseline figure out how long's is going to take place if you're going to have shorter term goals, within that.

Kristina Armstrong: And then start looking at what needs your attention, right now, you can probably identify the biggest energy users in your facility, without even really trying, you know it's that big motor over there that boiler.

Kristina Armstrong: But then starting to quantify that and understand that will really help you on your your journey and then, finally, how will you reach your goals and that's really what most of this webinars about today so i'm not going to really talk about that now so next.

Eli Levine: Great so thanks Christina as she was saying you're helping to identify who's responsible for saving energy is really your first most important step towards tackling some of your energy saving champ.

Eli Levine: Challenges um and honestly, the answer is, everyone is responsible for saving energy, I want a second christina's part of that you know, identifying and champion is.

Eli Levine: The critical important step that will detail a little bit more on the next slide but then building an energy team, you know engaging management and engaging all employees.

Eli Levine: and getting everyone to find energy waste and do their part to save is really important, and.

Eli Levine: With that last point about engaging all employees, there really are a lot of different activities that you can do to.

Eli Levine: You know, bring energy efficiency to everyone's attention and that can be encouraging and enabling employees to shut down their equipment when not in use, whether it's personal equipment personal computers or production equipment.

Eli Levine: You know there's an open forum for employees to suggest energy efficiency projects or solutions that can be.

Eli Levine: an email box and open discussion your team huddles where employees meet at the beginning of every shift to review assignments and discuss safety and energy efficiency topics.

Eli Levine: contests amongst employees, and this is something where i've really been blown away by the creativity and ingenuity of a lot of our better plans partners to come up with different.

Eli Levine: competitions and contests to get you to engage their employees, and this can be between different shifts department sites or buildings.

Eli Levine: You know, to save energy and identify projects, you know, two of these examples is you know our our grants energy marathon where for 26 days or 26.2 days they.

Eli Levine: They had a big competition to save to save energy and identify projects and Arcelor medals Power of One competition.

Eli Levine: In general, and this will you'll see this on other slides all of these different examples that we have from partners are ones that we have turned into case studies that you could read more about.

Eli Levine: On the better building solution Center In addition there are surveys and questionnaires and post posters and newsletters and Internet sites.

Eli Levine: As well as different ways to do this, you know, one example of the posters newsletters and Internet sites in selling these corporations approach when they developed a set of what they call the energy sparks training tools to promote employee engagement in their plants.

Eli Levine: So how to build an energy team and energy champion leads the energy program but it's really only one person an energy team shares the burden and certainly.

Eli Levine: helps you survive if that one individual is going to be leaving and we see that successful teams are are very they meet regularly.

Eli Levine: They have defined responsibilities and bring new lives problems you you don't want to have the circumstance and.

Eli Levine: hopefully not too many of you are sitting there saying oh that's that's my situation where you're the single person tasked with continually pushing the rock up the Hill and.

Eli Levine: you're the you're the green guy at the plan to is the only one who who cares about this, you know, to really be successful at this it's going to require everyone being engaged and working together.

Eli Levine: So, how did they do it there's a lot of different ways to do this audience we try to come up with a couple of concrete examples that we can point to so you can learn.

Eli Levine: To have these that you can see our solution Center our second bed and and comments.

Eli Levine: You know, for four components of society for CINCO vein, as you can see you in addition to the point, they they made up a plant level energy champion, who was responsible for everything going on with the key deliverables responsibilities and performance indicators.

Eli Levine: As long as they've got a corporate energy portal where folks could share different practices and responsibilities and, in addition to the plant level of energy champion St cobain.

Eli Levine: agreed to maintain an energy champion for each business unit, the responsibilities of the business unit energy champions were to facilitate the energy initiatives within their business units and coordinate energy related communications and reporting.

Eli Levine: The energy champion also serve the key business unit serves as a key business unit contact to the corporate energy manager, who has responsibility for the company's energy management Program.

Eli Levine: You know where warranted, the business you that energy manager is a full time position, sometimes most cases, it can be a part time role.

Eli Levine: And then certainly come and test the facility level energy champion at each time each each site.

Eli Levine: Often, with support staff and they have you know regional training sessions as well and there's a lot more information on this that I have in my notes here but i'm out of respect for time and wanting to make sure we have time for questions i'm just going to move to the next slide.

Eli Levine: And with this, you know effective corporate strategies are most effective as the slide says you're going to need management engagement.

Eli Levine: you're going to need to be able to communicate, both internally and externally, about what your strategy is and what your goals are.

Eli Levine: You know tracking your performance and holding you're bringing that level of accountability, but also having that goal in sight, you know, having something that you're working towards.

Eli Levine: Having a strategy to help you get there, so with that I will turn oh sorry for for management engagement, you know, this is something that's that's really important, and this is something that is critical to.

Eli Levine: You know, help make the new energy efficiency improvements, you have a strong business case, but you have to make that business case you have to help make to make the case too busy to management about the.

Eli Levine: Not only the financial reasons to do this, but all the we call the multiple benefits and how this is going to improve the health and safety and comfort of the employees.

Eli Levine: In why this is important, you know that the show that new employees share the values of the company and you know.

Eli Levine: How did you explaining how you did it so that it's replicable in the future, so we have a number of different resources and case studies and examples that.

Eli Levine: You can click on the link to you know to see different presentations and case studies to to understand about communicating with management and planning person now.

Eli Levine: In addition, we have an energy and energy project implementation toolkit up on our website and within their one of the forums, is one of the resources in there it's how to best present to management and get management on board.

Eli Levine: So with that I will turn it back to Christina for setting a corporate goal.

Kristina Armstrong: And so, one of the first things you need to do before you even really start tracking energy.

Kristina Armstrong: You need to know where you're going so you need to set a goal that helps put in internal accountability, with which then also helps with management buy in.

Kristina Armstrong: It seen by employees, it gives them the empowers them to do what they need to do it can attract new talent, it can help I investors go oh that company as well managed, they care about energy, I like that, and if you're a better brilliance partner you've already got one probably.

Kristina Armstrong: If not you need to make sure that you are your goal is not vapid so vague amorphous pie in the sky irrelevant or delayed so just out there no time devoted to it just.

Kristina Armstrong: Not useful you instead need a smart goal so specific, measurable attainable relevant and time bound and we're going to talk about this more next week, but just very clear what you're going to do, be able to track it not too big.

Kristina Armstrong: And just aligns with what you're doing.

Next slide.

Kristina Armstrong: So, once you have your goal, you need to know how much you use now I mean you can't say i'm going to save 25% if you don't know where you are right now.

Kristina Armstrong: So you need to start understanding your current energy use, you need to look for your energy sources, electricity, natural gas propane renewables.

Kristina Armstrong: You need to figure out how you use that energy what what equipment is using it.

Kristina Armstrong: How often is being used what effects that.

Kristina Armstrong: For more help on this there's the energy based lighting summary guidance document and a quick start guide or specific Quick Start guide that you can see, in the little box with the microscope microscope or.

Kristina Armstrong: and also your tam is a great resource to help you with this, and hopefully they already do so next slide.

Eli Levine: If you're interested in the energy intensity baseline tracking guidance on tune back in on Tuesday and we'll be going over that.

Kristina Armstrong: So a little bit more on that still, though, what do you need to track energy so gather monthly energy bills.

Kristina Armstrong: If you can see if you utility will provide you with a low profile at 15 or 30 minute interval data.

Kristina Armstrong: You also need to start, as I said, thinking about those predictive variables that will will affect how much energy use it's usually things like production, hopefully, you make more you use more energy and weather, so if it's hot, you need to cool down your facility some.

Kristina Armstrong: You create a spreadsheet or maybe you already have internal dashboards if you don't we have several piece several software tools, the energy footprint tool in the plant energy profiler are available online they're excel based documents, a little macro heavy but they're very useful.

Kristina Armstrong: And we are also working on a.

Kristina Armstrong: Dedicated energy dashboard utility dashboard software called verify and again as eli said more more on utility bills and energy tracking will be in the upcoming webinars.

Kristina Armstrong: So stay tuned.

Kristina Armstrong: All right, beyond just your bills so that's kind of this top down approach, you know how much energy you use it really helps to go from the bottom up and figure out.

Kristina Armstrong: How much each of your really big equipment use because that way you know what you need to focus on for your your potential projects you don't want to focus on.

Kristina Armstrong: Your tiny pumps your tiny fans, you need to look at those those big equipment so there's another tool that again the plant energy profile tool has a portion in it that lets you.

Kristina Armstrong: That can help you do this, but you generally need to get it some kind of recording of what your equipment is how much it runs what it's rated power is and how much it's loaded in that time period.

Kristina Armstrong: And then, as you start to gather this information, over time, you will gather enough that you can try to actually balance your your energy build with what you know, is being used.

Kristina Armstrong: And just the more and more, you can add to that the closer you can get to balance that will help you find.

Kristina Armstrong: Other parasitic losses or whatnot it'll help you understand the fraction of energy that is used for each of these these pieces.

Kristina Armstrong: That will also let you monitor the Su energy performance, which will help, as you do, projects, you want to track that energy use, it will also identify the people who who work on those equipment and those might be good people, for your energy team.

Kristina Armstrong: So next slide.

Kristina Armstrong: So, as you start discovering all this se use and benchmarking them, and you know how much energy they use.

Kristina Armstrong: Well that's only part of the puzzle how much energy should they be using so you can compare internally like similar motors you got to 500 horsepower motors, you can compare those two.

Kristina Armstrong: Or if you're a multi facility company, you can ask somebody else within your company hey do you guys have any similar size, about how much energy is it using.

Kristina Armstrong: And, if nothing else, you can compare to industrial level information so information from surveys trade groups, best practices.

Kristina Armstrong: And again, we have a bunch of tools to help you with benchmarking, such as again the plan energy profiler the manufacturing energy consumption survey.

Kristina Armstrong: has some manufacturing energy and carbon footprint reports and again the better building solution Center the technology focus areas webpage is a great great resource for helping with this and all those links are available.

Kristina Armstrong: Next.

Kristina Armstrong: So you've now got your se us, you know how much they use you've compared them to benchmarks.

Kristina Armstrong: Now what we'll now's the time start looking for both the low to no cost opportunities through treasure hunts ice university looking at the solution Center.

Kristina Armstrong: and identify those more bang, for your buck projects that cost more but it'll do more, you do that through energy assessments, whether they be in plants or through the ice and using the tools that will help provide we're going to talk about all of these in the next slides.

So next.

Eli Levine: Another great way to engage your employees and identify some low to no cost opportunities are what we call energy treasure hunts, and these are.

Eli Levine: Typically, two to three day mini assessments, where you build an energy team, and you have them working, can you work together with you know the will.

Eli Levine: evaluate the plan to the facility to you to understand your where some where the quick wins are where are things that people may not have noticed, and this is something that.

Eli Levine: We are happy to train you guys on we're happy and we host implant trainings to through the better plans program to host to teach people how to do these, we also have a treasure on toolkit.

Eli Levine: That you can pretty much use and it's designed to be your one stop shop towards hosting an energy treasure hunt.

Eli Levine: The our friends and colleagues at the Environmental Protection Agency in their energy star program for industry also have a real treasure trove of.

Eli Levine: treasure trove of resources for your for your energy treasure hunts and I encourage you to check out.

Eli Levine: Their resources as well, I believe that they're still running a campaign where they're tracking all the different energy treasure hunts out there two and.

Eli Levine: Part of this that's Nice is that we, on the slide we have the top Dima sucker for all the top 10 lists that sort of simplify it for me, but this is your top 10 most common.

Eli Levine: Law low cost savings opportunities to look forward during a treasure hunt, and you can you can see them there but it's a really nice way to.

Eli Levine: sort of strengthen your energy teams and communicate the value that this is something that everyone has a stake in, and we need we need everyone to.

Eli Levine: Look, for these things, because it is the type of thing I noticed, even in my everyday life at home that once you start thinking about saving energy and where the opportunities are really becomes ingrained in your.

Eli Levine: Really becomes ingrained in your psyche and then you you start noticing things that you may have walked by a million times before.

Eli Levine: So in addition to that better plans offers implants oh Christina this was her sorry I you go ahead.

Kristina Armstrong: Thank and the great another great thing about the treasure hunts and then these implant trainings is they can help.

Kristina Armstrong: People beyond just the energy managers learn more about how to save energy, either the low cost things or with the implant trainings the.

Kristina Armstrong: Larger equipment it'll can help them be able to look at these equipment and go oh wait, we can do this a little better.

Kristina Armstrong: And the more people who can think about that sort of thing, the more likely, you will to find good projects that preferably don't cost much.

Kristina Armstrong: With the the implant trainings these are two to four day on site training and assessment.

Kristina Armstrong: will teach you will send an expert to your facility teach you how to conduct these assessments, including using the diagnostic tools, the software tools.

Kristina Armstrong: And that'll let you calculate the savings and even help you learn how to begin implementing these projects and we cover all the major equipment water, energy management.

Kristina Armstrong: I mean it's compressed air fans pumps motor.

Kristina Armstrong: Processes process heating steam i've already lost count there's I think at least 10.

Kristina Armstrong: We have done 130 in person over the past many years and it have over 2400 attendees and if saved over are identified savings of over \$52 million in the past year and a half, however long the pandemic has been.

Kristina Armstrong: we've had 10 virtual treasure or 10 virtual implants have had over 500 attendees and identified over 5 million.

Kristina Armstrong: That that's a bunch of different units there I think it's 5.4 trillion be to us not million dollars.

Kristina Armstrong: And on the links on the page, you can find an overview to how the implant trainings work.

Kristina Armstrong: we're not having new ones, right now, but eventually we will again and also you can access at BP BP training dot O R and I.gov and that link on the page.

Kristina Armstrong: You can access all of the videos we have done for the virtual trash virtual implants so two hour sessions once a week for about eight weeks for each of them so there's a lot of information on that webpage.

Kristina Armstrong: That you can I recommend just putting them on in the background and just listening kind of casually until you are like oh this parts really important to me.

Kristina Armstrong: Because it's it's a lot of really great information.

Kristina Armstrong: you like.

Eli Levine: I believe the statistic last I checked and don't hold me to it was \$2 million worth of identified savings for the virtual implant trainings.

Eli Levine: In addition to everything better plans offer stewards implant trainings and treasure hunts we did want to point you to, especially if you're a small to medium sized manufacturer joining us here our industrial assessment centers and.

Eli Levine: The ice is have been around honestly, as long as the Department of energy's been around it's really an extraordinary program that trains undergrad and graduate students to go out and give.

Eli Levine: No cost energy assessments to the small and medium sized manufacturers in your area if you're slightly larger than small to medium.

Eli Levine: Still i'd encourage you to reach out and oftentimes there's arrangements that that can be made, and these students are you know walk all around your plant and take measurements and you know I understand and then.

Eli Levine: write up a report that.

Eli Levine: That showcases you know all the different savings and oftentimes it's somewhere between 30 and 50 different recommendations that they have and they sort of in terms of which other.

Eli Levine: ones that can be done right away at no cost and which are the ones with a quick payback and which are, the more impactful but potentially with more costs up front.

Eli Levine: And they will they will follow up with you over the course of the year, to see if they can help at all with any of your implement implementation so.

Eli Levine: If you are sitting this and saying oh that's a really cool program and I wonder, whatever happens to those students.

Eli Levine: great things happen to those students, they come out with really just.

Eli Levine: Fantastic skills and we encourage you to hire them and have them join your plan because, by the time they will have spent their time with the isc they will have seen so many different plants and understand where the savings are and come out really ready to.

Eli Levine: contribute right away, so please do think about that and you'll take advantage of not only the assessments, but the students who are graduating from from the centers and you have the map there, this is the upcoming map for the for the next five years.

Eli Levine: And it's their website it's icy dot university and I bring that up because, after having done 40 years worth of assessments, it really is a treasure.

Eli Levine: A huge database, I guess i've used the expression treasure trove already, but it is a repository of.

Eli Levine: solutions and they you can look at similar size facility similar you know facilities in die in your sector and understand what the common recommendations that the ic students keep making because you know whether or not you're able to host your own assessment, you cannot.

Eli Levine: You can still learn based on up you know what are the common things that keep coming up for all sorts of other types of plants and they have.

Eli Levine: videos as well to help you understand how to tackle some of these challenges, as well as case studies and by all means you know spend more time on the better building solution Center where we have.

Eli Levine: I think it's up to 200 industrial solutions focused on your replicable things that have been done by fellow industry partners who are facing the same challenges and largely have overcome them through these different strategies.

Eli Levine: Over you soon.

Kristina Armstrong: So, as I mentioned, we also have actual tools to help you in very literally, we have the diagnostic tools loan Program.

Kristina Armstrong: which will actually mail you the tools, you need for measuring the operating data for an assessment it's again a completely free program you can borrow these tools for up to four weeks I highly encourage you to.

Kristina Armstrong: do this if you have some use for it and talk to your tams for more information with that and the webpage on on the header there that will actually lead you to the web page for it and an application form.

Kristina Armstrong: Then there is also measured the manufacturing energy assessment software for utility reduction.

Kristina Armstrong: It is a software for energy savings analysis it's Open Source multi platform, and it can help you do assessments for pumps fans process heating steam and motor.

Kristina Armstrong: and very, very soon compressed air it has 65 standalone calculators for smaller little quick calculations, if you want to know know more about power factor.

Kristina Armstrong: or even just altitude corrections for pressure, it is a great resource and you can find it via that link or honestly just if you do a search for do we measure and it'll come up right away.

Kristina Armstrong: Next.

Eli Levine: slide oh sorry Thank you sorry for this, in addition, the next best strategy is to Korea craft and energy plan.

Eli Levine: You know it's decided to craft an action plan, this is determining the order of implementing your projects.

Eli Levine: And really getting the details down, you know assigning what what who is going to own the various aspects of the project and track your milestones your budgets your team and your dude get due date and.

Eli Levine: After you've already successfully implemented your action plan, you know communicating about it is very important, so communicating up to the management and executive team.

Eli Levine: With them we really encourage you to keep it simple as long as the others all around to help grab gain traction and build momentum for future projects.

Eli Levine: Do these guiding principles for successfully implementing energy assessment recommendations guidebook has numerous tips and checklists and.

Eli Levine: templates and basic tools for crafting your action plan.

Eli Levine: The guide provides tips for obtaining stakeholder buy in pitching the project concepts to management and developing an implementation tracking system and then communicating this when it's all complete so we would highly recommend that you.

Eli Levine: You know access that document and understand we are you follow the instructions there to help you successfully craft an action plan.

Eli Levine: In addition to you know, important to implementing your action plan is, you know these these steps of finding financing and finding incentives and.

Eli Levine: This can be challenging and the Department of Energy is here to help so one of the resources we have is what we call the better buildings financing navigator and it can help you understand the different.

Eli Levine: financing options that exist in what's in your area and what fits your needs, as well as connecting with better buildings financial allies as well, so within the financing navigator we have a special dedicated primer for the industrial sector.

Eli Levine: But I encourage you to spend time on there, one of the places that the financing navigator will inevitably point you to as well is, this is a database for out of state incentives for renewable renewables and efficiency or the desire website that can.

Eli Levine: really help you understand what what is out there and what what can be leveraged by your organization to help with financing and incentives.

Eli Levine: Through this you know we'd like to provide it's one thing for us to talk abstractly about this, but it's more important for us to provide real industry examples, these are three we have others.

Eli Levine: You know, at least for bentley mills side synoptic time with all three of the partner, the partner side and alternative to traditional financing routes for the proposed retrofit projects and ultimately.

Eli Levine: enlisted a better buildings financial allied room adaptive to fund two projects using efficiency as a service as the model which is up, they use this for a plant wide led retrofit and high efficiency fixtures for all domestic water uses so.

Eli Levine: I encourage you to check out their solution at the bottom to to understand you know how this works on energy.

Eli Levine: Energy as a service and certainly a hot new topic that a lot of companies are starting to explore, but then you have with the other with the other solutions about you know whether they've received alone or you know different different creative ways for out for financing their solutions.

Kristina Armstrong: So, as you start implementing progress, you need to make sure that you're actually saving energy, you need to to measure and verify.

Kristina Armstrong: One of the things you need to do is figure out how you're going to measure your success either your your key performance indicator your energy performance indicator.

Kristina Armstrong: It can be absolute energy use an energy intensity at a corporate or facility level or full on regression analysis, taking into account more than just production, but whether or anything else that you think could help.

Kristina Armstrong: understand your energy use and again a lot more information on this next week.

Kristina Armstrong: But tracking and monitoring will allow you to answer the question just are your objectives and targets being met.

Kristina Armstrong: or your your performance indicators moving in the right direction and are you getting the most out of your largest energy consumers or your se us, and again I highly encourage you to tune in next week.

Kristina Armstrong: And look at the energy intensity planning and tracking guidance document.

Kristina Armstrong: So last you need to tell people what you're doing telling employees, make sure that you can get their help.

Kristina Armstrong: Again, if if employees are aware they will directly help you save energy by coming up with projects practices.

Kristina Armstrong: becoming part of your energy team it lets you communicate management's goals and helps you build a culture on energy and then you can have energy events that.

Kristina Armstrong: Bring enthusiasm and posters stickers newsletters boards all kinds of different opportunities to tell your employees and then beyond them, you need to tell the world.

Kristina Armstrong: Because that really shapes your organization's image and shows a responsibility to the Community.

Kristina Armstrong: And if you're telling the world about it, the energy program is becomes a real part of the company you're kind of held accountable.

Kristina Armstrong: And it's it's just going to be there, and you can use trade press articles social media Open Days involvement and Community events and much more to just shout out to the world here, you can see.

Kristina Armstrong: Better plans you can get a poster that you can show on your at your facility that just says that we are a proud Member.

Kristina Armstrong: Are some a tall has told people about the power of one and their energy champion and there's just a lot of different things to get on our solution Center that will show you how other companies have done it.

Eli Levine: As much as you know, we want you to drive your energy efficiency savings i'm thinks that that is the best in first place, you should be working as you think about your broader decarbonisation sustainability challenges.

Eli Levine: We recognize that there's more than just energy efficiency and do we in the better finance program want to help you.

Eli Levine: With all of your sustainability challenges, and this can include renewable energy, water, waste and carbon and so.

Eli Levine: This slide showcases some of the challenges and opportunities and solutions that we have in this area, so I encourage you to.

Eli Levine: spend a little bit of time on this, but also know if this Piques your interest and you're interested in learning more about how to engage on these topics.

Eli Levine: Please reach out to us all of our contact information will be available at the end because, because as much as we are an.

Eli Levine: Energy program we see real opportunities, you know it may well be that there's opportunity and by saving water, you are saving energy and carbon as well, so that energy, water nexus or waste waste energy nexus.

Eli Levine: is so important as well, so just something to pique your interest to know that we have a lot of resources, here we are interested in engaging you on all of these topics, and you know, please continue to reach out to us, we have.

Eli Levine: water savings network or waste reduction pilot a low carbon pilot right now, and I think some pretty exciting things on the very near term horizon in terms of.

Eli Levine: Additional challenges and opportunities to partner with the D we threw up on the topic of industrial decarbonisation so next slide.

Eli Levine: Christina.

Kristina Armstrong: Alright, so just wrapping it up, how do you start on your path to saving 25% and meeting your energy reduction goal.

Kristina Armstrong: create an energy team and create a culture around energy set your goal get a handle on your current energy use, create an action plan and begin implementation.

Kristina Armstrong: find opportunities and content, said that parts of circle you're just always going to go back to creating more action plans more opportunities.

Kristina Armstrong: and examining your major energy users may attract performance and celebrate your successes and then start to look beyond energy efficiency, so thank you all.

Eli Levine: So you guys have been so patient and respectful to do not interrupt with your questions, but we have time for questions now so fire away um all as as Christina and I mentioned as we wait for questions to come in through the chat box and please use the zoom chat box to to respond.

Eli Levine: All of this is detailed in a document that we published.

Eli Levine: Over the course of this year that we call the Quick Start guide for small and medium sized manufacturers to save energy or the Quick Start guide to saving energy from small to medium manufacturers.

Eli Levine: That will have links to all the case studies we references which, as well as you know, much more eloquent writing than.

Eli Levine: Then, my presenting on on all of these important topics, so I certainly encourage and you saw when you were signing up that there was a link to download that document and that's something for for all of the.

Eli Levine: For all of the webinars that we have scheduled they all link to a resource document that we have published that is free to download and it's accessible for you to take advantage of So please, I will stop talking there and see you know what we have, by way of questions.

Pete Langlois: Thank you, thank you Christina and that was wonderful and wonderful overview of.

Pete Langlois: Everything we won't talk about today alluded to what we have coming up for the rest of month I do want to do a couple clarifying things for throw into the, the first question, and that is.

Pete Langlois: eli mentioned the Quick Start guide that is available on the registration page that if you are watching this webinar live you've already been on.

Pete Langlois: If you're watching it recorded that website if you're seeing it I guess let's say in October 2021.

Pete Langlois: and go to yes events COM slash energy awareness that's yes events COM slash energy awareness.

Pete Langlois: And I guess what i'm going to ask our team to do is also put a copy of these slides up there for all possible because he, like Christina.

Pete Langlois: You mentioned a lot of links in here that we want people be able to go and continue on and check out and so that'll be the way, at least in the near term to see them.

Pete Langlois: Ultimately, if you're watching this video later check the page where it is posted where you're finding the link to the video itself and then you'll have access to the presentation and the slides as well.

Pete Langlois: i'm going to scroll down and see that new message here in just a second, but before I do that when I asked you i'm Christina.

Pete Langlois: The lovely ironically named virtual in plant trainings How would somebody go about I guess finding out what what's coming up on that or just contacting us directly to figure out how to do that with them for themselves.

Eli Levine: yeah it's a it's a great question and there there's implants and what we call them plants or virtual implants, by all means.

Eli Levine: I would say that contact you can never go wrong by contacting us.

Eli Levine: On the slides as well, there is a dedicated website where you can see the schedule for the virtual implant trainings if you're interested in coming, ones that you want to.

Eli Levine: Watch live, but as we've all adjusted to over the last 18 months, everything has a virtual component and all of these.

Eli Levine: presentations are recorded, so if let's say you are particularly interested in the compressed air and virtual implant training and that one has passed already.

Eli Levine: there's very much the opportunity or let's say you're interested in this, but your job or your boss won't you know won't let you take time out of day to sit and.

Eli Levine: You know, in the virtual classroom and learn the recordings are a great way to take care of this, on your own time and.

Eli Levine: Access all the knowledge and training that we're offering free of charge and heck if you if you're like me and sometimes it takes two to three times of listening to something before it sinks in.

Eli Levine: that's an advantage to watching a recording to in the privacy of your own home where no one could observe how many times you needed to hear the sentence repeated before it.

Eli Levine: actually makes sense to you so that's certainly an advantage to the recording as well.

Eli Levine: pete The first question was less of a question and just a comment from the national inflation association which we greatly appreciate.

Eli Levine: That they are you know show they wanted to point out all of the resources that they're available to advise on available resources, you know get more involved and.

Eli Levine: You know, hopefully this I appreciate you commenting on that because I think there are really great opportunities for collaboration and knowledge sharing and.

Eli Levine: Learning with with yourself and the Department of Energy not just the bare plants program but you know all of our various programs so kristin stay tuned we'll we'll reach out to you after after this meeting.

Eli Levine: Oh, and there you go and Christina has dropped into the chat the the information is being overused.

Pete Langlois: that's arise finally thanks for pointing that out, and again for those of you who are not watching this live and access to the chat.

Pete Langlois: we're referring to him for more information, you can see an installation.org is a national installation associations website www.installation.org.

Pete Langlois: If you want to ask another clarifying question just to be sure we did talk.

Pete Langlois: During the presentation and Christina you mentioned a few things i'm thinking specifically the diagnostic tool for lending Program.

Pete Langlois: Some of the activities we talked about are things that would be involved in being a better plans partner but.

Pete Langlois: The vast majority of everything you talked about the links will be in the presentation, the access to solutions on the billing solution Center.

Pete Langlois: All freely available to anybody, because while there's 250 partners from the original there's 200 plus thousand other manufacturers, you know who could use access to this to.

Kristina Armstrong: Absolutely I.

Kristina Armstrong: say the only things that are really only for better plans partners would be access to your technical account manager and the diagnostic tools loan Program.

Kristina Armstrong: Of the things we've really talked about today, all of the software all of the guidance documents, those are freely available online, the solution Center is freely available access to the ic can be done by anyone.

Eli Levine: implants and virtual implants are free to be audited by by non partners as well.

Kristina Armstrong: You cannot.

Kristina Armstrong: host one out if you're not a partner sure.

Pete Langlois: All right, understood, thank you for that I do want us to follow up so we touched on a really briefly in terms of the.

Pete Langlois: The top Center solutions and again if we're talking to an audience here the maybe a little less familiar.

Pete Langlois: Or to your point smaller may not have a dedicated energy staff what, in the broadest terms are the low hanging fruit that maybe the smaller manufacturers should be looking for me, I can.

Pete Langlois: I can think of a handful of things, it seemed like that top 10 list was was a little more specific, but maybe just in general topic areas that they might want to think about.

Kristina Armstrong: So top 10s for any given process equipment are actually available on the better building solution Center technology focus area pages.

Kristina Armstrong: As far as the treasure hunts go some of the key ones repair your air leaks it's number 10 on the list, but really kind of feels like it should be number one a turn off equipment if it's not in use or or if if you can.

Kristina Armstrong: And then, some of the other ones shut down chilled water systems over when they're not used over the weekends have decreased time running spent program agitators reduce fan speeds, do you need to be running your fan three fans or even your pumps at at full speed, if you can.

Kristina Armstrong: Set equipment to turn off we're going to sleep mode lights computers.

Kristina Armstrong: Adjusting storage our water temperature.

Kristina Armstrong: Reducing temperature of offset off shift thermal oxidizer and shut down air supply houses during off shifts.

Kristina Armstrong: And then also so that was the top 10 for treasure hunts also on the slides there was a top 10 just the top 10 recommendations from IAC over there 40 years.

Kristina Armstrong: What are they most likely to recommend to people, so this is beyond just load no cost but utilizing high efficiency lamps and ballast and that has a pretty high payback on this on the ice database, but it's actually getting smaller and smaller.

Kristina Armstrong: Again, eliminate compressed air leaks.

Kristina Armstrong: Reduce compressed air use and sensing a theme really.

Kristina Armstrong: Use occupancy sensors.

Kristina Armstrong: If it makes sense for your process using adjustable frequency drive a bfd or V St.

Kristina Armstrong: shouldn't necessarily put it on everything, if your pump or fan of motors running full blast all the time it doesn't need one, but if it's if it's not always running full load, you might want to consider it relocate compressed air intakes use high efficiency belts on your Motors.

Kristina Armstrong: In reference to our comment insulate bear equipment.

Kristina Armstrong: Try to any heat recovery, you can waste heat recovery and then again turn off equipment when not in use.

Pete Langlois: Thank you for their Christine I appreciate that and I we haven't touched on it much during this presentation, but.

Pete Langlois: The pandemic over the past 18 months or so, is obviously in many ways, maybe, things are more back to normal than they were say early on, of course, but it probably introduced some.

Pete Langlois: Not only stresses and strains just in the Labor force activities, but just new learnings potentially about how.

Pete Langlois: A manufacturing enterprise, you know might be operating under different conditions is there anything that's.

Pete Langlois: come up that surprised you or or maybe a lesson learned from from one of the smaller or bigger manufacturers that we might not have known had it not been for the different conditions that they experienced during the early parts of and.

Kristina Armstrong: So we actually have two documents relating to that I can find in post links to them in the chat here in a bit, but generally if you if you search.

Kristina Armstrong: I think if you search do we better plants coven you might be able to find them online, but.

Eli Levine: Sarah attacks and go.

Kristina Armstrong: awesome Thank you.

Kristina Armstrong: From what I remember from those.

Kristina Armstrong: I remember a lot of people being really surprised at how big their baseload was.

Kristina Armstrong: People weren't making things so production was literally at zero but their facility was still using a lot of energy, because things didn't get shut off and and whatnot and that's also something that can be identified in a treasure hunt if you actually do it over a weekend.

Kristina Armstrong: But that's that's The one thing I remember you I do remember anything else.

Eli Levine: yeah and I think that that's right, I mean one other thing that i'll say is you know I think the pandemic has tested, all of us in so many different ways, but the.

Eli Levine: resiliency and ingenuity of our partners to continue to push forward and recognize that just because.

Eli Levine: We may not all be showing up to the office on a daily day to day basis, the challenges that greet us every day at the office you are global climate challenges are still there, and certainly aren't taking time off themselves so continuing to think creatively and find.

Eli Levine: New ways to drive progress and new ways to share knowledge, much like we are gathered here today, but to meet virtually and.

Eli Levine: You know explore new ways to communicate and stay close with each other in ways that we both never thought possible and possibly even never thought necessary.

Eli Levine: Pre pandemics, so those those would just be some of the things that I would say is you know do reflect on how far we've come and how creative our partners have been and resilient our partners have been in continuing to find ways to drive your meaningful energy savings.

Eli Levine: You know, during all of this, but I like christine's point about you know, using potential downtime or changed, you know disruptions in production to assess where the opportunities may be.

Kristina Armstrong: And I will also agree with one of eli's points, I had a partner, very recently told me that.

Kristina Armstrong: They are in better communication with some of their especially further away sites as the corporate energy manager there and better communication now.

Kristina Armstrong: than they were when they were having to go and travel to those sites they actually see them more face to face it's just via a little box on your computer.

Pete Langlois: yeah I think we're all probably too familiar with that by now eli Would you mind putting up the final slide just so we can give a reminder to everybody and how to contact.

Eli Levine: or just the last thing i'll mention pete just to give a shout out to.

Eli Levine: The program that you put so many years of hard work to stand up and turn successful, but you know thinking about you know developing an energy management system, you know, according to the ISO 50,001 standard and leveraging the resources of 50,001 ready.

Eli Levine: You know, building those types of fundamentals can really help you, you know with the Australian sort of proverbially strengthen your core for when you're tested with a pandemic and understanding, you know, having the infrastructure in place to you know to still make progress moving forward.

Pete Langlois: We thank you for that we're definitely at the do a very much invested in the idea of continuous improvement and having a plan measuring your goals and.

Pete Langlois: Having some goals and measuring your progress to them and keep improving so to the extent that that's a brick wall for the folks who are on this webinar.

Pete Langlois: And we certainly have a lot of resources to help you with that.

Pete Langlois: In terms of getting in touch with any of us, you see the email addresses are on the screen, in my case for things related to the advanced manufacturing office in particular now.

Pete Langlois: Our education workforce development eli and Christina, of course, a couple of our lead off and start energy experts with a better plans program, we will have others.

Join.

Pete Langlois: For the rest of the month for those who are seeing this in real time or near real time the next webinar is on Tuesday.

Pete Langlois: So this might be a little confusing the Tuesday webinars are at 11 Eastern 8am Pacific, whereas the Thursday webinars during our energy awareness month celebration are typically 1pm Eastern and 10am Pacific.

Pete Langlois: So either before or after lunch if you're in the east coast or before lunch here out West, then please join us for whichever ones are more than one.

Pete Langlois: might be most relevant to you, you can find the information about that and the resource guides that we've talked about for each one again at yes events COM slash energy awareness.

Pete Langlois: And with that I will I will thank you all for on behalf of the advanced manufacturing office and the better plans program for joining us for the first one hope to see you at many others, thanks, have a great energy awareness month and a great rest of your day.