

Clifton Yin:

Good morning, folks. Thanks for joining us. We'll give people a minute or two to trickle in. We'll probably have to get started pretty close to 11:00 'cause we have a good lineup of speakers. So thanks for joining us and we'll start momentarily.

All right, it's 11:00. Let's go ahead and get started, because again, I think we have a good amount of speakers coming up, so I'm excited. So hello. Welcome to the 2021-2022 Better Buildings Webinar Series.

Before we dive in there are a few housekeeping points I want to cover. So please note that today's webinar will be recorded and archived on the Better Buildings Solutions Center so we'll follow up later with today's recording and slides when they're made available. Second, all attendees are in listen-only mode, so your microphones will be muted. If you experience any AV issues throughout the webinar please send a message in the Q&A box located in the bottom of the Zoom panel and someone will help you out.

Next slide, please. Thank you so much.

So today's webinar is entitled *Work Smarter, Not Harder: Creative Project and Process Implementation*. And basically we're going to hear from several Better Plant's industrial partners about their fun and innovative systems for choosing and executing processes and engaging employees on energy efficiency and sustainability.

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So that's me. My name is Clifton Yin. I'm your moderator today. I'm a manager at ICS and I provide contract support to the Department of Energy and the Better Plants program, which is the industrial component of the Better Buildings initiative.

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Here is our speaker lineup for today. So Sam Schneider from Saint-Gobain will start us off by talking a little bit about sourcing sustainability projects. Dave Reid from Celanese will then follow up with discussing assessing and choosing projects. And then Paul and Bob from General Motors will follow up by talking about the actual project implementation process. So this is a kind of consequential set of speakers. And then finally Subodh from Oak Ridge National Lab will kind of close by briefly covering Better Plants' new updated project implementation toolkit, which will

help partners implement projects. And that toolkit is actually posted on our website now.

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So today we'll be using an interactive platform for Q&A, polling, and feedback; it's called Slido. So please go to www.slido.com on your mobile device or by opening up a new window on your internet browser. And today's event code is #DOE. So basically this is a system for asking questions, which we'll do at the end of the webinar.

So if you want to ask any questions of our panelists please submit them anytime through the presentation, and again, we'll be answering them at the end of the session. You can also click the thumbs up icon for questions that you like, which will result in the most popular ones moving up to the top of the queue.

So it looks like people are already getting involved, which is great. So we're going to test it out – test out Slido right now to get people familiar with it. So we're going to start off with a poll. So if you haven't already, please go to [#DOE](http://www.slido.com). Oh, it disappeared for me.

Oh, there we go. I see it again. Great. So, yeah, so go to [#DOE](http://www.slido.com) and just let us know where you're coming from. I see a whole bunch of industrial folks, which is great. But, you know, of course our speakers are all industrial, but I think what they're talking about really applies to any kind of organization that's looking to implement EE and sustainability projects.

We'll give people a few more seconds to try this little system out. All right, a good mix of people; this is great.

Okay, no utilities. Well, let's hope – let's see if anyone hops on. All right, why don't we go ahead and go to the next – oh, someone from utilities. Wonderful. We have a full range of people here.

Why don't we go ahead and try the next poll? Thanks so much. So yeah, the next question is just what are your biggest barriers to energy project implementation? And this is a word cloud, so we'll be able to see people's answers in real-time. We're just trying to get a sense – yeah, cost and funding, yeah. Yep. All right, it looks like – yep, it looks like money is a big – a big primary barrier. We've got benchmarking, defining priorities, stakeholder engagement.

Guys, we have a pretty broad – management, time, personnel. Yep, getting buy-in, sure. Tech maturity, yep, makes sense. Competing interest, politics, sure. Yeah. Market penetration, lack of staff capacity. Too many products to do; that's a good problem to have, I think. Product ambiguity. Wow, this is a lot of different barriers, yeah. I'm glad we're doing this webinar, 'cause I think hopefully we'll be able to get some insight into how other organizations are overcoming these barriers.

All right, let's go ahead and move on. Thanks, everyone, for participating.

So we have a great lineup of representatives today; I'm really excited. Our first speaker is Sam Schneider. He's the Sustainability and LCA and Reporting Manager for Saint-Gobain North America. In this role Sam conducts life cycle assessments for their products, calculating environmental impacts from cradle to grave, and in her role as process sustainability engineer Sam led the sustainability network, a group of sustainability champions at each of the 130 manufacturing plants in the US and Canada.

So, Sam, please go ahead.

Sam Schneider:

Thanks, Clifton. Next slide, please.

So Saint-Gobain is a global company in over 72 countries. Saint-Gobain designs, manufactures, and distributes materials and services for construction, mobility, and industry markets. Today I'll be focusing specifically on our sustainability efforts in the US and Canada.

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I'm part of our Saint-Gobain North America EHS and Sustainability team. As Clifton had mentioned, my current role is a sustainability and LCA manager, and in my previous role I facilitated our sustainability network, which is a big part of the project sourcing that we'll be talking about today.

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First a little bit about the drivers for sustainability at Saint-Gobain. We are entering a net-zero carbon economy.

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And sustainable construction is an essential part of that net-zero carbon economy. As you can see, 40-percent of global carbon emissions are linked to construction.

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So our goal is to be the worldwide leader in light and sustainable construction, making the world a better home.

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So here are a few more drivers for our sustainability goals and related projects, extreme weather events, and the result human health and wellbeing impacts. In 2019 Saint-Gobain pledged to be net-zero carbon by 2050.

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In order to reach our 2050 goal we spent interim 2030 goals for water withdrawal; carbon including scopes one, two, and three; circular economy; and 100-percent LCA for all product ranges. And yesterday Saint-Gobain joined the US DOE's Better Climate Challenge, aiming to significantly reduce greenhouse gas emissions by 2030.

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So with all these different goals in our 130 manufacturing locations in North America, connecting resources and recognizing achievements internally has become a primary driver for sustainability. Through sustainable champions at each plant we can share resources and best practices.

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At Saint-Gobain everybody plays a role in our sustainability network. Helping us to reach our 2030 goals will take all of us working together.

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Here are some examples of how our knowledge base connected. This is on top of an energy grid, which I think is a cool visual. But the annual sustainability summit, DOE implant training awards, and more.

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These are some of our internal resources for sharing sustainability information: Climate 2050 training, a Yammer page, a monthly newsletter, a Teams group with channels for each of our sustainability goals, a best practice library for operations, as well as employee engagement, monthly technical webinars, and our annual sustainability summit has been virtual for the past years. Facilitating best practice sharing is a way of bringing down silos between all the different business groups and empowering each site to have the tools to develop improvement projects.

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These are a few of the external resources that our network uses to fund ideas for projects and to learn more about sustainability. Shout out to the DOE for the webinar series, online learning, virtual implant training, and other resources that help us to develop and assess projects.

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One of my favorite ways that we share and celebrate wastewater and energy projects is through the WWE awards, which our sustainability team wrestling belts are awarded to different sites each year. The submitted projects are also added to our best practice library, with one slide on each project with related metric improvements, capital investments required, plant contacts, photos, and other relevant information summaries in an easy-to-read website format.

Last year we couldn't celebrate in person so each of the winning sites submitted a video. Let's watch it now.

[Video plays from 0:11:42 to 0:12:54]

Sam Schneider: Steven, I think part of the video got cut off, but I'll go into the competitions now.

So the last way that we share in-source projects that I'll share today is through competition. In 2018 we hosted the Compress It Compressed Air Challenge, which was recognized with a Better Practice Award. The Better Practices Scavenger Hunt used the DOE MEASUR tool along with other resources to find energy waste and water opportunities.

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In 2021 we have an Employee @ Home Water Conservation Contest with the hope that employees looking for toilet leaks at home or switching shower heads for low-flow options, that that practice would also translate into opportunities in the plant or for employees that worked in offices an awareness of what our water goals were and water efficiency best practices.

So thank you so much to the DOE for all the resources used to develop and assess projects as well as opportunity to talk with you all today.

And one other thing I wanted to mention, because I saw in the poll that a lot of people asked about funding opportunities, is that we have a capital allocation process which was implemented last year, and that's been extremely helpful in helping to determine projects at the regional level that will have an impact and provide capital for those, rather than having each plant having to decide what capital investments make sense in the longer-term payback period. So if you have any questions about that, we're doing Q&A at the end.

So thank you so much and I'll turn it back to Clifton.

Clifton Yin: Thanks, Sam. Yeah, I'm not sure what happened to that video, but the WDWE awards are very cool. I think there will be a link to the video when we share the slide stuff. But yeah, a very, very creative competition at Saint-Gobain.

Sam Schneider: Thank you.

Clifton Yin: Yeah. So yeah, as a reminder, we're doing Q&A at the end of the session, so go to www.slido.com #DOE and you can put in your questions there for any of the speakers.

All righty. So our next speaker is Dave Reid. So Dave is the Senior Manager Global Energy and Productivity for Celanese. He has more than 30 years of manufacturing experience in polymer and chemicals industries. He has held positions in process control, manufacturing operations leadership, as well as global operational excellence responsibilities, including his current role, leading the Energy and Productivity Programs for Celanese manufacturing sites worldwide.

And Dave will – yeah, let's – Dave, go ahead and take it away.

Dave Reid: All right. Great. Thank you very much, Clifton. Can you hear me okay?

Clifton Yin: Yeah, sounds good.

Dave Reid: All right. So thanks for the introduction. So Celanese – you can go to the next slide, please.

Celanese recently set new environmental sustainability goals for energy, water waste, and greenhouse gas emissions. And part of my role as a manufacturing energy leader is to help us develop systems and processes at our sites and also for the company, so we can achieve both cost reduction goals we have, as well as the new sustainability goals for the company. I'm going to talk a little bit about how we recently developed and rolled out a capital project sustainability checklist, and the checklist supports our energy management processes, our sustainability programs, and reduction goals.

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So first a little bit of background on Celanese to set the stage for why energy and environmental sustainability is important to us. So Celanese, we are a global technology and specialty materials company and we produce a wide variety of products that people use in everyday living; things like paint, adhesive, cars, cell phones all have our products in it. We currently have about 7,700 employees and more than 40 manufacturing locations in 19 countries around the world. And specific to energy, we're very much a consumer of energy. Energy is one of the largest non-raw material costs we have as a company and we spend more than \$300 million a year in energy.

Now of that energy, more than 70-percent of that energy goes in to make thermal energy, mostly in the form of steam, which is used in many of our chemical processes.

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So over the last couple of years, probably just like most companies here on the call, we've seen a significant change in focus in our company, from a more siloed approach on energy to much more comprehensive focus on ESG, including energy, water, waste, climate, all aligned with the United Nations ESG protocols. At Celanese I think we see this as a potential advantage, you know,

competitive advantage, not only with continuing to improve our processes, reducing our cost, reducing our energy use and our emissions, but also with the opportunity to produce sustainable products that go into sustainable businesses, like EV batteries, for example.

And as a result of this change we've really increased our focus by increasing the use of systems and processes that drive sustainability in the company. So it's not just about productivity or cost saving or just energy we're looking for, but instead we're now driving value with a much broader ESG mindset. And this really aligns with the changes that are being driven by our investors, customers, regulators across the world as that focus on climate and ESG has changed across the world.

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So as part of this move to that sustainability focus a need was identified to evaluate sustainability improvement opportunities and capital projects and to require our capital project design and our technical design review teams to consider energy, GHG impact, water waste conservation early in the design cycle of the project, before the final design, before the project's approved, with the objective to design sustainability upfront in projects and not after the fact.

And since a lot of capital projects have 20 or more year life cycles we need to be thinking about these things, these environmental sustainability aspects of the projects now with that long-term view of where we're going to need to be in 20 or 30 years, and the life cycle cost and impact in sustainability over that timeframe, since this is typically how long we've got to live with the decisions that we're making today about our projects.

So historically we've looked at capital primarily as initial costs, internal rate of return, project schedules. We do take sustainability into consideration, but not with the level of attention that we need for this increased focus that we're talking about and for the future. And everybody probably knows this too, but after a project is approved it's usually next to impossible to add scope or class, even for really good ideas.

So what happens and what we've seen is sustainability improvements are often retrofitted into existing equipment, often with a higher cost, and as productivity projects or sustainability

projects after the project's been running for several years, so we're not getting that benefit from day one.

So we wanted a consistent approach where all the sites had a common template for the type of questions that they need to be asking and the design considerations that they needed to be thinking of as part of a good energy and sustainability management system.

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So what we did is we put a small sub-team of our energy council together along with some project engineering subject matter experts and some sustainability champions from across the company, and we put the team together to build the checklist. But we also reached out and received input from other Better Plant partners who were willing to share some of their capital design checklists. And with these templates along with our own internal checklist that we already had that were developed for some of our sites that are ISO50001 certified we developed that list of questions that we finally settled on.

And really, to be honest, we had several iterations of the checklist. Initially it started out pretty energy focused but it quickly evolved to that much broader perspective that I talked about with a complete environmental sustainability focus.

So we put the draft together, we got feedback from the sites, we took the checklist to our leadership for approval, and now we've rolled it out as part of our capital project and technical design review workflow that we have across the company.

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So the checklist was really developed in five main topic groups, again, using that series of questions to trigger the design team. We wanted them to consider that broad range of sustainability aspects during the design and review of a project. The first group of questions is specific to the amount of impact from the project. Really the goal there is to quantify the environmental benefit or the impact of the project in terms of changes to energy usage or intensity, how much more or less water we're using or what the GHG impact might be. This is so we know directionally how projects can affect their goals going forward.

The second group of questions focuses on manufacturing process technology, asking questions like "For maintenance of business projects has more sustainable technology been considered or life cycle costs been considered in the design process?" The goal of this section is to understand if technology improvements have been considered for the project.

Now the third group of questions focuses on equipment efficiency for sustainability with questions like "Have variable speed drives been considered?" or best technology for trapped steam use for the service. This section focuses on process mostly, but it also has building design, equipment sizing, turndown capability as part of it as well.

Now the fourth section reviews measurement systems. So have we considered the significant sustainability usage components? Are they measured? Are they recorded? Hopefully are they controllable? With questions related to metering and sub-metering and control elements and digitalization and automation systems.

And the last section of the checklist is related to kind of other factors, including things like product life cycle analysis impact, water balance, peak loads, and even things like rebates and subsidies for energy reduction.

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Now how the checklist uses – the checklist is completed again at the technical design review step, so early enough in the design process so that any alternatives that we can come up with have been evaluated well in advance of getting the project approved. So the checklist is included in both their major and small capital work processes, so it's in all of our projects. And again, based on the responses to the questions and the opportunities identified in the checklist the design team can develop a list of potential project improvements, alternatives, and a proposal to improve the project sustainability impact can be identified with cost benefit, IRR benefit, and other factors, including how well the project aligns to our sustainability goals that are included in the project analysis.

So when we review the project site reviews are completed as part of the project approval process, global reviews are completed by sustainability champions and major project managers for some of our larger projects. And based on using the checklist we feel that better decisions can be made to implement these upgrades and enhancements for a project. Now it's still up to the business

approver to decide whether to go ahead with the improvement alternatives. And whether or not the improvement options are selected or approved, we still have ideas and we can document ideas and enhancements so that any options not selected can be used to build pipeline of future productivity and sustainability projects. So we build a pipeline of projects as well for projects that aren't approved.

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Now the checklist is relevant for new equipment. It's also relevant for expansions, but it's particularly important for maintenance of business projects to replace old equipment. So instead of just replacing in kind engineers should be looking at evaluating cost-effective replacements and improved sustainability and efficiency. And the checklist helps our engineers think about these improvements and gives them that consistent methodology for an effective review and an effective decision-making. And really the goal of the checklist is we want to drive behavioral changes at the project scoping and technical design review phase to consider and include some of these improvements that drive better environmental sustainability.

We're looking for the checklist also to promote better decision-making at the project approval phase to include these improvements, or not, depending on what makes sense, but with a better understanding of the scope, the alternatives, the cost, and our impact on sustainability.

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Now as part of the implementation we developed an online training module also that's part of our overall manufacturing training program for our project and technical teams. So the module reviews topics such as why we implemented the checklist, how it's used, and what are the expectations of the different roles that interact with the checklist. And it also has a test at the end to make sure that people understand it and have comprehended the content of the module.

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So in summary, as the focus on sustainability increases across industry we at Celanese are working to improve our sustainability systems and processes, and as part of this increased focus we developed and implemented a sustainability checklist for capital

projects. Again, the checklist is intended to promote first a consistent review of energy and other sustainability aspects of the capital project, and then secondly, better scoping and identification of different options and improvements, again, early in the design phase of projects. And the end goal really is to design and build better and more sustainable projects upfront the first time, when they're first implemented.

So next steps for us are really to keep working on to improve the checklist with new ideas, new checks, new things to put in. We're also working to improve that behavioral side, how it's being used, challenging our project engineers and our project approvers to use the checklist to develop better and more sustainable projects.

So that's all I wanted to cover today. Thank you very much for your attention. Back to you, Clifton.

Clifton Yin:

Thanks, Dave. Great. So as a reminder, folks, we're doing Q&A at the end. Please go to [#DOE](http://www.slido.com) to put in your questions for any of the speakers. And I see a bunch for both Dave and Sam already, so that's great.

So next up we have a one-two punch, two speakers from General Motors, Paul and Bob. Paul Hartmeister has worked for General Motors for 37 years and is an energy sustainability manager. He oversees energy management projects at 11 sites in North America, he is responsible for energy and water reduction projects, 50001-ready implementation, and other activities to reduce GM's carbon footprint and energy consumption.

The second speaker from GM is Bob Baird. He's been with GM for 43 years and has worked on a variety of environmental issues, facilities, projects, and energy conservation in a variety of GM plants in the US, Canada, Mexico, Asia, and Europe. This work has included casting operations, variable frequency motor drives, water conservation, lighting improvements, AFAC enhancements, compressed air, steam illumination, and other processes-related opportunities.

Great. So, Paul and Bob, please take it away.

Bob Baird:

Clifton, go ahead and go to the first slide of the presentation.

So yes, Paul and I are from General Motors. We've done a lot of really interesting things, but hearing how people are trying to work towards sustainability and greenhouse gases, we're going to spend

a little bit of time talking about project implementation as it relates to our energy and carbon optimization toolbox.

Next please.

In the toolbox we have a variety of different metrics that we use. The first one is essentially the toolbox that looks at how well our plant is doing things that we have found to be best practices around the world. Can you turn all your compressed air off on the weekend, for example? Or can you turn off water that was in a circulating system, like a cooling tower, to reduce energy that's used when you're not making parts?

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The tool also has a list of project starters. Do you have a compressed air leak process? Do you include energy at the team level as part of the deliverables that the team is supposed to do? Have you minimized compressed air pressures and coordinated it? Do you have panel coolers on the electric panels that are set at 90-degrees Fahrenheit or 30-degrees Centigrade? Again, to give you just some of those kind of things of do you get Energy Star appliances?

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I think the ideas are generated from that discussion from the toolbox and then we put them into a roadmap, into a tracking tool that's a common tool across all of the plants and you can put in – it helps us search and identify the current conditions and the future conditions, capture what the energy savings or the water savings may be, along with the cost to do the various projects that we might do. So we brainstorm with the toolbox, we look at the roadmap and come up with some ideas and concepts.

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Paul Hartmeister: I'll pick it up here, Bob.

After we've gone through and we've evaluated and we've got a listing of projects basically we take those projects from the roadmap, we refine them, and we determine whether or not to continue to develop the idea or to abandon it. And assuming that we continue to develop the project, we determine the cost, the high-level cost and the saving estimates and we evaluate it for the financial payback requirements. We go through a series of

financial reviews, reviews with some plants to determine the feasibility of the project. And after moving past that we look for the funding sources, both internal funding sources as well as external financing using energy performance contracts.

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After the preliminary evaluation has taken place we then refine the concept and move forward with traditional project aspects of refining the scope through the engineering, bidding that scope, and awarding to a successful vendor, just a typical project process. The EPC process takes a bit of a departure as the EPC contractor has already been preselected. They're responsible to determine their level of self-performance or the use of subcontractors to complete the project. At this point the project team will discuss the schedule, the availability of the plant areas that the work needs to be performed in without disruption of the production schedules. Upon the completion if the project is then closed invoice is submitted and paid.

Again, pretty typical project stuff. We do have some internal funding sources that may be a bit unique and we do currently have the use of performance contracts. So those are very helpful in helping us develop and execute some of our projects.

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After completion of the project we work to collect the incentives that were applied for back at the beginning of the project. For some of the projects, especially the performance contracts, we measure and verify the savings to assure that the assumptions have held up. We then update the toolbox with the verified savings and we close the project. It's at that point and anywhere along that process that we start getting interest from other sites looking to do similar type things, and we look then to clone the project, use it at other locations to drive even more savings. And we've been successful on a number of fronts with sustainability projects that work in one plant that also have viability and can be transferred to another plant so we can then do it at more than one location and get those synergies as well.

That's pretty much what we had for you guys, so thank you, and Clifton, back to you.

Clifton Yin:

Thanks very much, GM team, Paul and Bob. So next up we have Subodh Chaudhari. He is a technical account manager for Better

Plants and an R&D staff member at Oak Ridge National Lab. He has participated in over 150 energy assessments in various roles at manufacturing plants and commercial buildings. Subodh is a certified energy manager and a qualified specialist in the areas of processing steam and pumps. Subodh will be closing it off with talking about our new project implementation toolkit. So, Subodh, please take it away.

Subodh Chaudhari: Sure. Thank you, Clifton. Let's go to the next slide.

So yes, I am Subodh Chaudhari. I will be talking about the implementation toolkit that we have developed.

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So as we learned from the great examples of General Motors and Saint-Gobain, there are different resources that DOE has invested in, as well as your local utilities or state programs have invested in efficiency programs to help you support project identification. So there are – through this Better Plants program we use industrial assessment centers and we also provide some resources through implant trainings, treasure hunt programs to identify these projects. And so as Saint-Gobain explained, there can be a lot of internal mechanisms through which you can source ideas. There can be internal company competitions or suggestion and idea boxes that can help you populate your project hopper so that you have always projects to think about and implement. But the point of this webinar is to actually take these projects and move it to the next phase, which is the implementation phase.

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So traditionally what we have seen is that the project identification phase is always the first phase, and implementation phase is seen as a follow-up state to the identification phase. So it's recommended that we see implementation as the main-step of this program, and then project identification is made as the pre-step to the implementation phase.

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Did we skip a slide here? That's fine.

So when we identify these projects usually the first phase of the project is rarely successful. We create a lot of ideas, but most of those ideas do not get implemented; some of them are not even

looked at. And when we think about it, there must be some reason for this, and when we think about it there can be these various _____ to come forward. So through this Industrial Assessment Center – the Industrial Assessment Center has completed 20,000 energy assessments so far across the country. And through those assessments they have recommended 150,000 energy conservation measures. And they also tried the implementation of those recommendations.

So when we think about that, the barriers – as we see the barriers this can be simply economical or financial or they can be informational due to uncertainty of savings or even lack of expertise or in-house skills for the implementation. And to work on these barriers we need to put in a certain mechanism as we saw from Celanese or even from General Motors, from their toolbox that can help us.

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So to work on these barriers we have put together an implementation toolkit. And in this toolkit there are 15 different tools that we are releasing, and so there are different tools that can help you in different phases of your program. So there are certain tools that will be helpful for you throughout your energy efficiency program and then there are certain checklists that can help you in your project identification phase and even when you are starting the implementation phase.

Last but not least, there are also tools to celebrate the success when you move through your implementation and successfully implement the project, you need to celebrate those successes. So there are tools for providing awards to the people who help implement those projects or communicating achievements throughout your company or even releasing some information outside so that other people can benefit from your experiences.

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So I'm going to go over three of these tools. So if you are in the really early stages of your program and are trying to basically evaluate if energy efficiency is the right kind of commitment for you, or if you are trying to evaluate if your commitment makes sense or not, the Do Nothing Tool basically can help make a case for your management or for your staff. So the tool basically creates a competitive analysis between two scenarios. While first is business as usual, where you just carry on as you are doing right

now, or as opposed to that, if you make an energy efficiency commitment over a long-term horizon how much difference can your energy efficiency make for you. And so this tool can take input in terms of your energy consumption, your target energy savings, and other factors such as how your production is increasing over the years, your expansion factors, or even the energy rate escalation. And utilizing all those inputs you can create visuals for your management and see what kind of impact your energy program have in terms of cost savings, in terms of CO2 emissions on annual, as well as cumulative basis.

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And so once you have an energy program in place the Prize Tool can help you in selecting a project. So let's say if you are trying to build a case or if you are trying to sell a particular project to your management, and so if you are trying to compare between what kind of effort it will take to implement a project and what kind of impact it can have on the bottom line, that can basically help make the business case for that project. And so the Prize Tool basically compares the energy cost savings with revenue generation. And so energy cost savings are operational savings they directly go to the bottom line improvement. But revenue generation on the other side is a little bit different; you have to put in a lot more cost to get the revenue improved, and then only part of that can go to your bottom line improvement. And so it basically puts in perspective for the management how the energy cost savings can be really beneficial or can be attributed to much lower effort as opposed to the _____ generation.

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And then the third tool is the Corporate Gap Analysis Tool. So this tool is an implementation tracking package in and of itself. So it's very similar to the tool that GM showed but it is a little bit different. So it helps you track your energy efficiency implements. Let's say you are implementing different projects, so it can track the projects in different categories and then it can help you create analysis where it can compare how many projects you have implemented and then what is *[inaudible due to distorted audio]* that you still need to fill with more implemented projects to satisfy your target energy efficiency.

So this can basically help create a mechanism to track your projects, follow up on them on a priority basis with the project owners. And so it can definitely help increase the implementation

of some of the projects, especially the projects that get ignored or delayed, they can definitely be tracked with these tools.

One very interesting feature of this tool is that it can track the cost of delay. And the cost of delay is the cost or the savings that you have lost because of the non-implementation of the project. And since you have that tracked this can basically help to underscore the urgency of implementation.

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And so finally to summarize, there are four key takeaways: make use of different resources that you have available to Better Plant programs, as well as your internal resources to populate your project hopper. And integrate the implementation resources, implementation consideration right from the get-go, where even before identification of the projects think of the implementation constraints. And then use the implementation and tracking tools so that you create accountability and responsibility for the project. And then finally, after successful implementation do not forget to celebrate the success of your team. People are always the most important variable in this implementation equation, and so if you can communicate better I think it will help improve the implementation further in your organization.

So I would encourage everyone to look at this implementation guidance toolkit that is available on the solution center.

Thank you. That's all I have. Back to you, Clifton.

Clifton Yin:

Thanks, Subodh, and thanks to all of our speakers. I think we have a lot of very interesting ideas for sourcing projects and toolkits for the whole project implementation process.

So we're going to move to Q&A now. We have I think ten minutes. I saw a whole bunch of questions, which is great, but if you have any last-minute ones for any speaker go to www.silo.com #DOE.

Let's get started. I think I saw three questions for David about whether or not his checklist can be shared publicly.

David Reid:

Yeah, I have shared it to other DOE Better Plant partners. So if you just sent me – I think there's a contact slide coming up and if you just send me an e-mail I'll be glad to share it with you.

Clifton Yin: I think we can also together. I think – I'm pretty sure we have a case study in the works that we can –

David Reid: Yeah, maybe.

Clifton Yin: Yeah. And then that can be part of it and posted online.

David Reid: Sure.

Clifton Yin: I will have to touch base with you after this call to figure out how we can disseminate this great checklist.

On that note as well I guess "Is the GM eco toolbox going to be publicly available as well?" Paul? Bob?

Paul Hartmeister: Currently, Clifton, it is not publicly available. We can sit and talk to somebody's specific questions. There's portions of it that are still kind of in development, quite honestly, so be happy to sit down and have further discussions with anybody if they'd like to do that.

Clifton Yin: Sounds good. I think there's a case study on the solutions center that kind of goes over it in broad strokes, which I think is helpful. Even though the toolbox itself is not available online.

So a question for Sam. Your competitions look really fun. How did you convince management to support these kind of activities?

Sam Schneider: So first of all I'll say that management is extremely supportive of sustainability initiatives, especially over the past couple of years. Even since I joined the company 2.5 years ago I have seen a huge increase in support for these different sustainability initiatives, which is really cool to work somewhere where it doesn't have to be as much of a constant push for some of these initiatives.

But I would say at the plant level business leaders help to motivate the facilities to participate. For our team the cost of the prizes is not very much. You know, it's a couple hundred dollars, we get some cool prizes like LED light bulbs or solar backpacks, things like that. And in the course of the competition, whether it's the Compressed Air competition or the Better Practices scavenger hunt, the facilities are looking for all these different opportunities to save energy, but also to save costs. So for the scavenger hunt we really tried to bake in cost information into our sheet that was being used to collect the different points. So each facility put in their energy costs and then for each opportunity they had a cost that they were able to assess using the DOE measure tool to make

the case for that project as well as make a case for the competition as a whole, because at the end of the competition I could roll up all that different information that we collected and say "We identified this many cost savings projects throughout this competition," so it's a really good initiative in terms of both like how many opportunities are found and the money that could be saved by implementing some of these energy efficiency projects.

Clifton Yin: Yeah, it's been an impression too that Saint-Gobain, once you kind of develop a culture for fun and creative competitions, it's kind of a self-fulfilling prophecy, it becomes easier to do more and more.

Sam Schneider: Yeah, the businesses love like head-to-head, you know, roofing wants to beat gypsum and within roofing each of the plants wants to beat each other, so there's definitely a lot of competition between sites and between businesses, which is a fun way to pit each other against each other to make us all better.

Clifton Yin: Great. Thanks, Sam.

A question for David. So do you face challenges with engineers adopting and using the checklist consistently? If so, what measures are you taking to improve the adoption process?

David Reid: Yeah, it's a good question. So like I mentioned in the call, we're trying to change peoples' behaviors to use the checklist and also on the approver's side to use the checklist as part of the project approval. So the answer to the question basically is yes, there are challenges with engineers adopting it. But the way that we're going about the measures we're taking are a couple things. So first of all I mentioned the training. So we're giving training as part of our engineer, process engineer, process design team standard training.

The second is it's part of our standard work processes. So we've made sure that we've implemented the checklist as part of the work process so that as engineers or as project teams are going through the work process they'll see that as a requirement. And the third piece I think is from our leadership, when projects are coming in front of them to be approved that they need to be asking for it, and that's part of how we've rolled it out as far as the approver's side is just as important, where we're looking at those options, we're asking questions and challenging our engineers to come up with better ideas or more sustainable projects.

So various measures that we're doing to make sure it becomes part of our standard processes during the training, but also setting an

expectation that leaders are asking for these when projects are coming up for approval.

Clifton Yin:

Thanks, Dave. There's another question about a checklist, but again, I think we will work to have it publicly available.

I think the next question is for Sam. Can you please share how employees tracked and reported the employee water contest?

Sam Schneider:

Sure. So this is a little bit different than some of our other competitions, which were more focused on getting people at the plants involved looking around their facility. This was an initiative where we actually partnered with our communications and employee engagement and like CSR team. So they wanted to do kind of a broad contest where we were looking at sustainability for all of our employees. And with the pandemic, since a lot of folk were working from home, maybe their family members were at home too, I thought it would be cool to do an employee water contest, where folks were looking at appliances and things at home and trying to come up with what they could do to try to save water.

And we ended up using Give Well, we were also using that for our donation platform, like if I want to make a donation and have Saint-Gobain match it I use that platform. So it was a nice way of using the same tool that employees were already familiar with. And one of the things that I really liked about that tool is that they actually gave you estimates of how much water you were saving by stopping your toilet from running or switching out a nozzle on your showerhead or washing your car less. I thought that it was a really good metric-based tool because a lot of things are just like, "Oh, this is a nice to have" or "Maybe you should try this," but you don't know how much water that's actually going to save you. So I thought that was a really cool way of coming up with a total number of water that employees were saving from these different practices.

And each employee filled out that on their own; it was all like voluntary and there were different challenges that they could sign up for and they could check off if they did it, and over the course of the contest that's like how much water they saved. It was, you know, maybe some things were like a one-time thing and other things were prolonged change, like, you know, if you skipped washing your car once how much water that saves versus like if you install a new showerhead, that's more of a long-term change.

So that was a pretty cool tool and the first time that we had used that.

Clifton Yin:

Neat. Thank you. I think the next question is kind of for all of our speakers, anyone who wants to comment. So any comments on the cost benefit analysis of on-site solar PV versus only purchasing renewable energy generated off-site? This is kind of a broad question.

Anyone want to chime in?

Sam Schneider:

I can chime in on that. Now with my new LCA role this is something I start to think about a little bit more because on-site solar can have different advantages in terms of how you allocate it towards your products. And that may continue to change; we might be able to use racks in the future. But I would say I terms of if you're thinking about LCAs and EPDs that might be a cost-benefit analysis for your customers to improve your EPDs based on solar. But our strategy involves both. We had a great virtual power purchase agreement that really helped to offset a lot of our electricity, and hopefully as we continue to electrify that will be a really, really great thing that has happened. But we've already achieved our 2025 energy poll – or electricity polls based on that EPPA.

Clifton Yin:

Okay. Thanks. You know, I think we're actually running out of time, so I think we'll have to close the questions. But we do have the speakers' contact information at the end, so people can feel free to e-mail them directly to get some follow-up answers.

Next slide, please.

There we go. Yeah, so this webinar has been part of the Better Buildings webinar series. And as you can see, we actually have a great lineup of presentations all the way through April, so please, we encourage you to visit the Solutions Center to learn more and to register.

Bob, if you could mute yourself. Sorry about that.

Yeah, thank you so much. Next slide, please.

So the next webinar is March 15th, *Commercial & Industrial Solar: The State of the Market and Solar Lease Best Practices*. So we're going to learn from industry experts and practitioners around the state of solar in the commercial and industrial market, and

speakers will also talk about how community solar can be scaled to accommodate large C&I portfolios. So hopefully some of you will join us for that.

Next slide, please.

Right. And so we're really excited because the Better Buildings Better Plans Summit will take place May 17th through 19th and after a few tough years it will be in person. So the event will feature engaging and interactive sessions, and also much-needed opportunities for attendees to network with their peers and other experts.

So it is planned to be in person. Registration is coming soon, and please visit the Solutions Center to learn more.

Next slide, please.

And with that we are at noon. So I want to thank all panelists for taking the time to do this today. Again, please feel free to contact them directly with additional questions. All of their e-mail addresses are listed here.

And I also encourage you to follow the Better Buildings initiative on LinkedIn and Twitter for all the latest news. And I think everyone will receive an e-mail notice when today's recording, slides, and transcript are posted online.

So thank you, everyone, for joining us, and have a wonderful day.

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