

Ken Zarker:

Well, hello everyone. Welcome to our webinar today. People, Prosperity, Planet, the Journey to Sustainability. Very pleased to participate. My name is Ken Zarker, and I'll be helping to moderate our panel today. And also, welcome to pollution prevention week, 2020. And the launch of the Pollution Prevention University. We have a wonderful series of presentations today, talking a little bit about the history of pollution prevention.

This year marks the 30th anniversary of the Federal Pollution Prevention Act, and today we plan to celebrate our rich history as the pollution prevention community, and explore opportunities for future collaboration. It's really been a pleasure to be a part of this journey over the last 30 years, and many of the folks actually on the call today have been a part of that beginning. And we also want to encourage all those that are either just getting started in their careers, or in their careers, to participate and engage. Thank you.

I will be helping to moderate. I first want to introduce Cesar Zapata with the US EPA Region 4, our partners here today, along with the National Pollution Prevention Roundtable. And Laura Henne, who is our chair of the National Pollution Prevention Roundtable, from the New Jersey Department of Environmental Protection. With that Cesar, I will turn it over to you and Laura.

Cesar Zapata:

Thank you very much, and thank you Ken for that. And welcome to this first webinar on the Pollution Prevention University. This is in celebration of the 30th anniversary of the P2 Act. This year, also, we are celebrating EPA's 50th anniversary of protecting human health and environment. This is a great week to celebrate both, and celebrate our work in the last 50 years, and 30 years in the P2 Act of protecting human health and environment.

The P2 Act, or Pollution Prevention Act, was designated, designed, sorry, to help US businesses transform the way they thought about manufacturing products and processes, and how to reduce costs to minimize waste. In the 30 years since the P2 Act was passed, EPA P2 Program has supported businesses, industry, in many ways through information collection, sharing, assistance in technology transfer, and financial assistance to estate P2 Programs.

The states having clearly early adopters of innovation and leadership in P2. The current National P2 Program was built on early state level P2 initiatives and programs. And I can attest to that, given my... I started my career in the state of Ohio, and when we were starting kicking off the P2 Program in the 90s, was one of the leaders in that area. In Region 4, we currently have active P2 Programs in all eight states. Our last round of P2 grants leveraged over \$530 million in savings for Region 4 businesses.

This included reducing water use by 2.5 billion gallons, and over 1.5 kilowatts of energy. Region 4 is excited to co-sponsor this P2U with the National Pollution Prevention Roundtable, and is looking forward to strengthening this partnership in the upcoming years. Thank you for your participation, and I hope this event will be very useful for everybody participating in it. And keep looking. I know

they sent a list of different activities that is coming up for the next week, so please participate in the upcoming week, and all those other activities. This is the first one kicking off the P2 week. Thank you very much for your participation, and I pass it off to Laura, right?

Laura Henne:

Yes, thank you. Thank you, Cesar. I'm Laura Henne with, I'm the chair of the National Pollution Prevention Roundtable. I work for the state of New Jersey. I must say, when I graduated with my degree in environmental science, and pollution control and treatment sciences in '91, I had never heard of pollution prevention. It's a shame, I'm ashamed my university, college at Rutgers University didn't mention it at all in any of my four years there.

When I got the job in '99 working for the DEP, and they said, "Oh, pollution prevention. We're non regulatory in that we're not regular authorities where we crack down on you. But, what we do is, we encourage pollution prevention by forcing companies to do pollution prevention plans. And then they will see how great pollution prevention is, that it saves them money, and helps them with their environmental regulation." And I'm like, "I'm in, sounds great." And I never left. I have been with the roundtable off and on since 2000, and I'm proud to represent it now.

The roundtable itself started off in 1985 as, let me see if I got this right, the National Roundtable of State Waste Reduction Programs. In '92, we got incorporated as the Pollution Prevention Roundtable, and we haven't looked back since. I'm excited that we can do this webinar series with you. We've been missing having our annual meetings. We used to have annual conferences twice a year, and we were really looking forward to starting them again. But then COVID hit, unfortunately.

Here we are. We're meeting virtually. It's a virtual world now, and we're making the best of it. And I think you'll really enjoy the series coming up monthly for the next year, at least. I thank everybody for coming, and I'd like to get started.

Ken Zarker:

Thank you Cesar and Laura. Appreciate the opening. Many of you on the call have been involved with pollution prevention for many years, and this week, we're celebrating the 30th anniversary of the P2 Act, as well as the 35th anniversary of the National Pollution Prevention Roundtable.

Laura Barnes:

This is Laura Barnes. I would like to jump in for a minute, because we wanted to ask the attendees, we wanted to launch a poll for the attendees to find out how long you have been in the pollution prevention field. Because this is kind of a look back, so it'll be interesting to see how many old timers versus newbies we have. I'm going to launch the poll right now. Here we go.

Ken Zarker:

Yeah. I want to thank Laura Barnes. She actually has been there from the beginning when, produced a roundtable when she helped staff [inaudible 00:07:04]. He was our first acting executive director. Also wanted to shout out

to Greg Guyer, who's been helping to organize the event, today as well. And, yeah. We have quite a number of our [inaudible 00:07:18] board members participating. And also, Lissa McCracken, who's been the sort of catalyst for bringing this together, and we appreciate all her work on this today.

Laura Barnes: Okay. I think it looks like everybody has responded, so I'm going to close the poll. And I'm going to share the results so you can see. A pretty good mix.

Ken Zarker: We'll get started with our first panel. It's wonderful to have this current panel, Pam, and Kathy, and Christina. I've worked with Pam and Kathy for many years, and needed Christina's work as well, but really looking forward to hearing from this panel. We have worked together over many years. Especially, I've worked with Pam through her role in the Regional Pollution Prevention Coordinators. And the regions play a really important role in pollution prevention, coordinating with the states, particularly on their development of their grant programs and regional collaborations.

Really looking forward to hear from Pam and her perspectives over the many years. And then, also, Kathy Davey. She's a attorney, and a senior environmental protection specialist at EPA's Office of Chemical Safety and Pollution Prevention. And Kathy has provided a wealth of support over many years, including her good legal background and history of the Pollution Prevention Act. And so, it's just a wonderful treat to have Kathy involved as well. And then, with Christina Guthrie, she's working at US EPA for over 10 years. Kind of has a background in working with small to medium sized manufacturers.

And also, an interesting note in her bio that she worked E3, the Economy, Energy, and Environment Program, which was a very successful program run for many years. And so, she brings early wealth of experience with voluntary programs. At this point, I'm going to turn it over to Pam, and she'll walk us through this next series.

Pam Swingle: Okay. First of all, I feel like it's old home week with Ken on here, and Cam, and Gary Hunt's going to be on the agenda, too. It's great to see faces, and hear voices that I haven't heard for a while. It makes me realize how much I miss that annual national meeting, and something we need to bring back as soon as we can. I'm going to quickly go over, I think most of the folks on the call know what pollution prevention is. We're going to talk about the importance of P2, and then the bulk of this panel is going to be on the P2 history.

Kathy has a rich history from the start, at the beginning of, in the agency. And then Tina is going to, Christina Guthrie is Tina, is going to go over the timeline. And we've launched a new timeline on our website that's really cool, and she's going to walk through that to show you some of the highlights of what's happened over the 30 years, and before that. Why pollution prevention? I think we all know this. I'm going to go over this in great detail. We also call it source reduction. It creates less waste, less hazards for public health.

And I put the how on here, because I really think it's important to stress that we couldn't do this work without our states, and tribal organizations, and university. They're the ones that really do the bulk of the work on the ground, and make this happen. EPA does provide some funding, but it's really a small amount compared to what's leveraged in the states, and the states having their own P2 Programs. Why is it important? It is a volunteer program. I've been in recycling market development, and then P2 for many years now. And one of the big things that the pollution prevention does is providing that financial benefit for business to help them look at reducing costs to treat and dispose of waste.

And it also, it melds well with lean, and the environment, and that work that's being done by manufacturers already to see the environmental benefits. It conserves and protects natural resources by reducing use of water and energy, and it strengthens our economy, increases competitiveness. And many times, I hear if you're not involved with P2 or sustainability, I hear folks say, "Well, that costs money." But actually, companies are seeing that it provides them with increased competitiveness, and actually saves them a lot of money. And as you heard from Cesar, we've seen those results from Region 4.

I'd like to say that P2 is the corner of sustainability. Now I'm going to pass it on to Kathy for her to kind of go over the history of the P2 act, and what's happened within the agency. Kathy?

Kathy Davey:

Hello everyone, glad to be a part of this. Yeah. It did pass as part of the budget reconciliation act in congress in the fall of 1990. And it had, at that time, our administrator was Bill Riley, and he was a huge proponent of pollution prevention. In preparing for this, I did a little research, and it was interesting to see that there were two reports that were really the impetus for the act. I think it was a 1996 EPA report to congress on the minimization of hazardous waste. And as I'd listened to Laura talk about the beginning of NPPR, I can see how this all sort of fits together.

And then there was a followup report by the Office of Technology Assessment, basically that EPA needed to do more. And both of these reports, I think, are what ended up being cited in the P2 Act as sort of the background policy need for pollution prevention. And they both identified the four approaches to pollution prevention that we've all come to know so well. The manufacturing changes, the equipment changes, the product reformulations and substitutions, and the improved industrial housekeeping.

Those were fun days at EPA. The new office that was created was in the office of the administrator. And the effort, which was very active at that time, was bringing this multimedia pollution prevention perspective to, really, every part of the agency. The regulatory development efforts, which were a very active thing at that time at EPA, a lot of regs to be written. And there were these multi-office work groups, and they would report to the administrator. And it had a lot of high level attention. There were efforts in the Enforcement Office, in the Compliance Office, in R&D. There was a lot of training going on.

Of course, the grant program, which has endured, and which all of us are so much a part of, launched. There were the beginning the development of what became just a slew of voluntary programs. It was a very active time at EPA. And a bunch of that, particularly the regulatory aspect, became, to the extent that media offices could do it, embraced in their own way. And so, it had some endurance in that fashion. At the time, there were these high level coordinations among the, up and down the media offices to the political level, to the staff level, and going across.

There were a lot of discussions at that time. The influence of the act, I guess it's a chicken and an egg. As we heard, NPPR in its earlier rendition, started before the act was passed. But I think it was just sort of, the P2 act was an expression of the kind of thinking that a lot of people were doing, and it pulled it together, the agency. And I think a lot of its legacy has gone onto to be what people think about in terms of sustainability. Perhaps the...

Oh, I would just mention, too, that in the grants and so forth, sort of where a lot of the work of NPPR and EPA overlapped in many ways. There was a national network of P2 resource exchange centers. There were eight of them across the country, and it was a natural place where the work of the state pollution prevention programs, and the work at EPA, joined together in making the broader transfer of P2 technologies and practices take place around the country.

I'll just give passing mention to the very large variety of voluntary programs that came out of the kind of discussions that led to the P2 Act, and this flurry of activity around the agency. 3350, for those who were around at the time, was very focused on TRI reporting facilities, and getting them to reduce their TRI emissions by those amounts, 33% and 50%, were targets for, I don't know, what was it? Three in a five year time span, or something. And then performance track that had a long life during, I guess, the Carol Browner years of cheaper, smarter, cleaner, safer work that has, that still exists in any number of state leadership programs today.

I don't think Energy Star would think that they began with P2, but I put it in there as, representative of the shift in thinking that was occurring. And of course, Energy Star has gone on to be just a flagship activity of the agency. WaterSense, the electronic products environmental assessment tool, which has so influenced the sustainability of electronic products. In our office, where we are now, at some point, we moved from the administrators office to the Office of Pollution Prevention and Toxic Substances, and now, the Office of Chemical Safety and Pollution Prevention.

But are safe. Our, what was the Design for Environment Program, which has become the Safer Choice Program. Our Green Chemistry Program, which is doing its awards now. These things have had just such a wide spread effect. And they endure, and we don't always think of them as part of the P2 Program. Some of them are, some of them aren't. But they're all part of that kind of

thinking. Now, in terms of the results, what we see here on the screen are the reductions. Just from the grants from the P2 Program for those years, and those are sort of the annual amounts.

The way we ask people to report, which many of you are familiar with, we have our four measures. The pounds of hazardous materials and releases, how much water is conserved, the greenhouse gas, which is measured in metric tons of CO2 equivalent. And then, how much money businesses save. When people report to us, they report. And when a P2 action is implemented, and it is, the results are reported to us for one year's worth of benefits. And so, those events on the screen represent the one year benefits from 2011, and then the one year benefits from 2012, and so forth, added together.

We also think of the enduring impact, which means these benefits recur for years at a time. And our own science advisory board acknowledged that it is one of the great strengths of the program, and thought that we should in-fact count our impacts that way. If we simply look at this little slice of P2 stuff here, and we count the four year rolling benefits, in terms of the return on investment. The federal investment for this period of time was \$32 million. And so, on average, that yielded a little over 10-fold return on an annual basis, and a 46-fold return when you look at it on a four year rolling basis.

This is a small slice of the pie. All those voluntary programs we talked about, all the regulatory efforts that have been made. The work of the state P2 Programs that go beyond, particularly in the early years, beyond what they got from with the leveraging EPA grants. The combined impact of all of that from 1991 is simply enormous in terms of its environmental and economic benefits. It would be an interesting undertaking to try to figure out what all that adds up to. But it would be simply enormous. That's what I've got to offer, and I think a great legacy of the P2 act at EPA and beyond, as Pam said, it being the cornerstone laid for what we've all come to think of as the sustainability approach. Thank you very much for letting me present.

Pam Swingle:

Thanks, Kathy. We have Tina up next. And while we transition to her school for the time, her screen for this timeline, I also wanted to thank Lissa McCracken, my partner in crime with Kentucky Pollution Prevention Center. And you're going to hear from Cam, who's also been our partner from crime, and larger than life guy from Kentucky. But I want to thank Lissa for all her hard work in this, and coming together with us to do the co-sponsorship. I would like to do that earlier. Tina?

Christina Guthr...:

Okay. Kathy actually did a great job of our P2 overview, so I'm just going to try to show you the timeline itself. And then just kind of provide a couple additional highlights that are shown in the timeline. I think, if you guys, if Laura or somebody could share the link with everybody, then they could have it for reference for later. Or, it's actually just on our homepage, epa.gov/p2. You can click onto it, on the About Us, What Is P2? Page. Thank you, Laura. I just saw it.

The timeline is kind of a cool feature of our Drupal internet. Basically, you could either click through like this on your, these little arrows here, which is kind of fun. I think there's 51 dates on here that I've included. I have quite a bit of information on here, but you can also kind of scroll through. If you just want to see the broad strokes, you can kind of just scroll through on the bottom as well, which makes it a little bit easier because there are so many dates.

Like I said, if you go back to the beginning, there's just a brief introduction on what 30 years of P2 was, how the act was designed. And there's a lot of links in here that we tried to provide for folks to get a little bit additional information. Here's a shout out to North Carolina, they had the first P2 Program. All though, I do think there were several states in that time that also started. But the consensus was North Carolina. There's a lot in here. Like Kathy mentioned, the impetus of the P2 act was this minimization of hazardous waste report. TRI started.

We had, like she said, a flurry of activity that started at the beginning. Here's a map with all the P2 laws across the state, across the states right now. And just, also, if you guys, if you're interested, and you look through this timeline, and you find something in there that is not accurate. We did a lot of research just looking through old documents that were written 20-25 years ago, and so we try to pull a lot of those key dates from those documents. This is a living document. I'm happy to add to it. Kathy just mentioned performance track, and that's not listed here.

And I'm not actually sure if they used the P2 act as their authority, but it probably was. I just made a note to look a little bit further into performance track. If you guys find anything, I would be happy to update it, and maybe my email might be included in the slides. I'm not sure. That would be great. Here's the P2 Act. We tried to highlight the different presidents that were noted, who signed the acts, who did the executive orders. I can't remember how many executive orders there are in here, but there's probably around 10. And the nice thing about the P2 Program, is it has been around for 30 years. It has definitely spanned different administrations, which shows the support of the program, frankly, when you can survive for 30 years and keep trucking.

Early on, you guys will notice that there is, like Kathy said, a flurry of activity with the different programs that started. You got Green Chemistry. You've got the DFE Program, which is Safer Choice. I think later on, it was 1999 where the EPP Program was launched, which just basically talks about our environmentally preferable purchasing work. Which, you guys might remember was more geared... I think, originally, they talked about health hospitals. They talked about federal purchasing. More those bigger, larger institutional purchases that that part of the P2 Program focused on.

And I think another mention, or another thing that would be good to mention is, during... Here's the EPP Program, kind of the start of our guidance. This is basically when we started working with federal, other federal partners and

companies to kind of dive deeper into the standards world. We work with IEEE, NSF, ASTM, to really kind of fine tune P2. Not necessarily away from grantees, but to just kind of bring in those outside entities. We started working really closely with a lot of the standards work, and most of that work started originally in '06, I believe, with EPEAT and the Federal Electronics Challenge.

Here's a little bit on the Electronics Challenge. Here's the EPEAT benefits calculator, and here's a nice chart from, this is the newest charter that came out a year ago in 2018. These are just different metrics and measurements, measurements and benefits that came out of the program. And this only focuses, obviously, on electronics. But you can see the large sway that that has. But a lot of this work is based off an IEEE standard, and NSF standard, or ASTM. And so, this was sort of a new approach, I would say, to how we worked with P2.

I think that's probably it. Oh, I know I wanted to mention one more thing. The TRI program obviously began right away in 1991. But in 2013, they actually launched the P2 tool, which I think is super helpful. I don't know if a lot of folks use it regularly, but there's a link to it. One of the great things about the P2 tool within the TRI database, is that they have done just a terrific job of sharing how your company, or how a company measures up against the rest of the companies that report in TRI. And I think that's kind of a fun tool to look at for P2, because it gives our technical assistance providers sort of a new way into the company. Right?

We can say, "Say, you're kind of low on the bar. We'd love to help you raise up and be part of the larger company, or the larger, all the folks that are part of it." I think that's all I wanted to share. And like I said, please feel free to send me a note if there's glaring emissions. Thank you again.

Pam Swingle: Thank you Tina. Ken, I think I'm handing it back over to you.

Ken Zarker: Yeah. Well, thanks so much for that. This is great. A wonderful history of the program. And so, thank you. We do have a little bit of time. If there's any questions for the panel, we can certainly take a few of those, and use the checkbox. And while we're waiting for those, Pam, maybe you could talk a little about your experience in working with the state and local programs, and how that collaboration has kind of developed over the years. And thinking about the future, something like the P2 University, how this might be a new platform for engaging folks. Because we did have an interest on the poll. Quite a few folks that are into maybe their first job, their first career working in pollution prevention.

Pam Swingle: Excellent. Yeah. Yeah. As you can see, and what you've heard, is that the Pollution Prevention Program's really a mature program, and we've done a lot of great work. And it has evolved into the sustainability realm, and that's the term that's used a lot. For the state and local folks, we, unfortunately, have lost

some state programs for funding. But we've had universities that have stepped up in those states, and are now doing technical assistance to manufacturing.

I think in Region 4, we have five active state programs out of the eight states, that are actually associated with the Environmental Agency. What I find is, it's a really opportunistic organization in that we have to have that opportunity to get in the door to help folks, and help manufacturers. And over the years, there's been reluctance to that. But I think more and more with the partners we've made with MEP's and universities, and connecting ourselves to lean, and the environment. All of those things have helped us evolve over time.

Ken Zarker: Yeah. Well, thank you. And then, I had a question for Kathy. Going back to some of the early work we did, what we called it back in the day was sort of Regulatory Integration. And broadening the P2 theme across different medias, air, water, and waste. And looking at things like rule making. I don't know if you have any thoughts, or are remembering some of the things that we've tried to do in terms of incorporating pollution prevention into the rule making such as air quality regulations, things like that, that help incentivize P2.

Kathy Davey: That's a great question, Ken. Not to dust off the historical memory.

Ken Zarker: But you have a spot here.

Kathy Davey: I think one of the very interesting ones was in the pulp and paper industry where the Air Program was writing a rule, and the Water Program was writing a rule, and they decided to coordinate those efforts. That was a very big deal in trying to create the incentives to go chlorine free. There were many lessons to be learned in that process about thinking about... And that's one of the things about, fun and challenging things about the P2 Program, is that there's so many angles we have to think about at the same time. And in that case, I think it was the permitting timeframe that kind of became sort of an interesting thing.

But in a bunch of the HAP rules, Hazardous Air Pollutant rules, there were incentives to become a small generator to get out of a Title 5 Permit, and all the expense, and everything that that involves. That was a big incentive. In the waste area, if you could get yourself out of... A lot of all this boiled down to getting out of heavy duty permitting requirements, and incentives that, if people took that step, then they would be rewarded with far less costs and regulatory oversight. That was certainly a lot of what performance track was about, was the benefit that people would get out of that.

It affected all the media programs. In the water office, it began with point sources, and it evolved to looking at the non-point sources, which is where P2 can be of such help.

Meghann: We have had some questions come in from the audience.

Ken Zarker: Great.

Meghann: The first one is, is there a similar summary for the evolution of the NPPR? Is there a sort of timeline that EPA had shown?

Ken Zarker: Yeah, sweet. We actually have some archival information that we had highlighted back in the day when we were kind of in the moment, we were keeping track of things. They go back, and there's some really early history that we might want to mention. Some of the work that was initiated by the private sector. 3M is [inaudible 00:35:50]. There's a gentleman, I can't recall his name, that was considered sort of the father of P2, that came up on that pollution prevention page statement. There's a rich history.

Meghann: We can try and pull some of that together on our website.

Ken Zarker: Yeah. We'd love to. I'll take this approach.

Meghann: There's another question asking EPA staff if they see any big changes coming to the P2 program.

Pam Swingle: We have seen some big changes in the P2 program over the last several years, and at a state level, we've lost some programs due to budget concerns and so forth. But our budget has remained pretty steady for the grant program, and we are hoping that continues. It seems that we've been able to maintain that level of funding that we get, for the last several years. And it will be seen on what happens after the election, and if we'll have any major changes. We are always vulnerable, because we're a small program that is not a regulatory program. But our politicians see the benefit in P2 for businesses, and the economy. That's a big leverage for us, I think. Kathy and Tina, do you want to add to that?

Kathy Davey: I would agree. This is Kathy, I would agree with what you say, Pam. We managed to endure, and in general, I think in most administrations, we appeal to both sides of the political aisle. And we have continued to survive, and it's a good thing.

Christina Guthr...: I agree. This is Tina, I don't have anything else to add. Yeah, I think you guys said it all.

Meghann: Thank you. We've got a few more questions. The next one is, one major barrier to the implementation of P2 is capital equipment costs. Most of the P2 funding does not cover equipment costs. Are there any plans to create programs that can help fund equipment costs?

Pam Swingle: From EPA, and from the federal side, probably not. We do not have the capacity and the funding to provide that kind of resource, unfortunately.

Kathy Davey: I don't know where this fits in, but I know that we have someone in our staff who looks at the sort of financial leverage opportunities. I'm not very close to that work. I don't know if you know more about it, Tina, but I think it is, people are keeping their eye on what opportunities there might be, where the money would come, not from EPA, but where we would be able to link people to possible sources of loans, funds, that sort of thing.

Christina Guthr...: Yeah. I think it's a finance group. It's a P2 Finity Finance finance group. And I can't remember how many people Allison has invited to that group, but it's definitely open. And if you're interested in maybe thinking more about how there's other opportunities out there, and to come together collaboratively in that group. If you send me, or Kathy, or Pam an email, I'm happy to link you up with that group and share, we can share the resources, too. I know that they're looking to put them on the website eventually, as well. Yeah, happy to connect anyone who is interested.

Meghann: Great, thank you. We had a question about the difference between P2 practices and Green Chemistry. Asking, what is the difference between them?

Christina Guthr...: The nice thing... Okay, so recently, the Green Chemistry Program was moved back into our division, and the bulk of the program is really focusing on awards right now. But I think it's a really good opportunity that they're now in our branch, and I think, in the future, there'll be some more integration there. But nothing necessarily to report on that.

Kathy Davey: And I guess the main thing is that they are looking at how chemicals are made, and what chemicals are made. It's a very technical area, and it tends to inspire a lot of work in the R&D and university levels. I think it's different in that way from a lot of day to day P2 work, but it's also very very complimentary.

Ken Zarker: Yeah. When I used to get this question, I always kind of respond with, Green Chemistry is pollution prevention at the molecular level. It's really where you talk about design. And this is really important, and it's been a long interesting area. And we see it coming to fruition in things like consumer products, where companies are now starting to formulate their products so we eliminate the chemicals of concern from the beginning. Which is all about what P2's about, was source reduction and source control. That's a really exciting area that's emerging as well. We have a couple, maybe one more minute if there's one last question or so, Meghann.

Meghann: Sure. One last question is, are there any plans to tax toxicity persistence and bio accumulation?

Kathy Davey: EPA, the P2 Program, was very active in that area for probably seven years. I think the legacy of that continues to exist. But it was a very high profile effort across nearly every part of EPA to focus on that. And so, I mean, give a lot of credit to the Waste Office, as well as the Toxics Office. Everybody played,

including research and development, and international. I think there are, it continues to be an issue. In the Toxics Program, there are tools, sustainable futures. There are a variety of tools that could be hooked up with that allow people to evaluate PB&T qualities of different chemical choices, and so forth. They're continuing resources there, and if anybody wants them, we can provide them.

Ken Zarker:

Thank you. And I also will mention that, under the Toxic Substances Control Act, or TSCA, there's been some reforms over the last several years. And I think there is prevention opportunities there, and so that's another sort of frontier that we should be looking at as well. And it's great to have the... EPA is supporting both the P2 Act, TSCA, and the work in the pesticides office. And so, they have a huge mission. And I just want to thank the folks at EPA for so many years of dedication and service, and to take a back, stepping back to see how much impact we've had here in the United States, as well as globally.

Most countries now have pollution prevention programs. We have international clean production centers all over the world. And so, I think we should all maybe pat ourselves on the back a little bit, and then continue forward. And it's exciting to see the future. Let's step back. We'll transition to our next panel. If I could bring up Andrea, and Gary Hunt. Pam, if you want to join. Any other logistics before we move on? If not, it's really an honor to introduce this next panel. My colleagues for many years will be hearing from Gary Hunt, who's the former director at North Carolina Pollution Prevention and Environmental Assistance, and board chair, was at the original formation of NPPR.

Andrea Kreiner, with, now, a pitch bowl with her own company, doing sustainability work. Former director of the Delaware P2 Program is where I first met Andrea, and she was one of the early board chairs as well. And the illustrious Cam Metcalf, who no one forgets once you've met Cam. And we've had so many wonderful experiences together over the last many years, and it's great to get everyone back together. I will, with those brief intros, I think we can get right into our first panel. We have kind of a rounding question for folks. And maybe you guys can, you could go sort of individually. If you want to kind of interact in chat, that's fine, too.

When you think back, as P2 pioneers, which you're now considered. How did you really get involved and interested in pollution prevention? And, what was sort of in your background that drew you to this particular area? Gary, you want to go first?

Gary Hunt:

Yeah, I'll start. It all began for me back in the early 1980s when I was working with a consulting firm in DC. And we were working in both the EPA, off solid waste work on some waste min stuff, but also, we were working with the Maryland Hazardous Waste Citing Commission, about how to develop a pollution prevention program to reduce the amount of hazardous waste generated in the state, that have to go to the facility. And that really got me interested.

And what came out of that, actually, was a lot of how to actually develop a P2 Program, and what its structure should be. But back then, the real push was really this whole hazardous waste, and hazardous waste citing. Fortunately, I moved to North Carolina, got hired there in '84, and we formed the first group in '84 to get the states together to talk about how to keep pollution prevention going.

Ken Zarker: All right. Andrea?

Andrea Kreiner: Sure. I actually came at it with a different background than most. I was a resource economist. And when I was hired by Delaware, actually, one of my first tasks was going to be to write Delaware's Pollution Prevention Act. I went to my first Roundtable of State Waste Reduction Programs back in 1989, I think it was, in DC, and met folks like Gary, and some of the other P2 pioneers. And I was hooked immediately, because when you look at it from an economist's point of view, everything that companies were putting out the back door, or up the stack, they paid for coming in the front door. I immediately had a hook that I could talk to companies and say, "Look, I'm going to come and talk to you about money." And that was really successful for us, so that's kind of where I came from with it.

Cam Metcalf: I jumped in way back in the early 70s. In '73, I went to get my master's in Civil Engineering and Environmental Sciences on an EPA grant. And my thesis was on the rural Hardage Farm, on the South Canadian River, that worked its way up to number eight on the Super Fun Sites List. In '74 with that thesis in hand, I was hired to EPA to help write RCRA, '74 to '76. Well, my first job was hearings in all 10 regions, asking industry to come in and say, "What were they doing?"

And it was ponds, lagoons, and surface empowerment~~s~~. And so, we began to think about Cradle to Grave, a waste minimization program in place. Which, for me, was really the basis. Those six elements, that over the last 30 years, I've kind of watched those six elements go up to 18, and ISO 14001, and so forth. But that was kind of my first time. And then I think in 1990, as P2 Act was passed, I think the roundtable was in Baltimore. And I bumped into these, I mean, on fire people with knowledge, experience, enthusiasm, and it basically became the basis for my ongoing P2 efforts.

And I'll just throw in, Pam mentioned wish we were doing the annual conferences. The one thing I did learn in 1990, was what happens in the hospitality suite, states in the hospitality suite.

Ken Zarker: Always, yeah.

Andrea Kreiner: Always.

Ken Zarker: Well, yeah. When I think back to how I got interested, I've always been interested in environmental issues as a kid growing up, and made that

connection with the environment. And then, I think we all kind of remember, observed, in our early on careers, things like Love Canal, where there was toxic waste spewed out all over the place. Another famous one was The Valley of the Drums, I think, in Kentucky, where there was a very visual public image around pollution.

And folks may also remember Times Beach, Missouri, where they spread, I think PCB contaminated materials on the ground. And so, I think that galvanized quite a few people in that period of time when the hazardous waste programs was sort of getting started, and we start talking about waste minimization. Under the Resource Conservation and Recovery Act, we really didn't even get to resource conservation until maybe the late '80s or so, because we sent so much time just permitting and getting companies to get that message that Andrea talked about.

And what would you say in terms of your experience as running these programs? I mean, I would imagine you had to be a bit scrappy. And because, you were the new kid on the block, there was no money, and you were going up against traditional environmental media programs. How did that kind of play out within your own organizations?

Andrea Kreiner:

I'll start on that one, because we took a unique approach. I'll date myself a little bit and make a reference to the... I just went blank on the show. But we basically went to each of the regulatory programs, and to figure out how they got their [inaudible 00:51:46]. What was their drivers? And for example, when we went to our Air Program, our Air Program really used to get their kicks out of making companies do things they didn't want to do. I said, all right, I'm going to give them something.

I'm going to tell them that, how about if every time they write an NOV, they require the company to have a pollution prevention assessment, and we'll work on developing supplemental environmental projects with them. This was such a great hook. They started sending us out. They were getting really disappointed, because companies were actually happy about having this done, but we found ways for them to save money. But it was, basically, for us, figuring out how not to say, "We want you to do something in addition to what you're doing." But to say, "Here, we have something that can enhance what you like about what you're doing."

Ken Zarker:

All right. Okay. I'll have you-

Gary Hunt:

Well I guess I'll jump in.

Ken Zarker:

Okay, Gary. And then Cam, are you talking about sort of... We often refer to getting your foot in the door, right? Go ahead, Gary.

Gary Hunt: A big foot. Well, coming to North Carolina, I just wanted to also mention this, when you talk about it, where it all started. This is Royston's book called Pollution Prevention Pays. It came out in '79, along with the 3M company. [inaudible 00:53:17] kind of keyed the term. This is kind of the basis for so much of what we've done in the coming years. In North Carolina, we took a little different approach. We had kind of onsite technical assistance kind of holding hands. And because [inaudible 00:53:35], because our regional inspectors did not like the confrontations.

They could offer somebody, we could help them particularly through treatment, air, water, hazardous waste that could help a company meet their permits, or stay in compliance, do pollution prevention. We were able to put people, other people, on the ground. We worked with the agency, the different agencies to find out what their biggest problem was. Solvents, for example. And developed training material and conferences for them.

The other big thing, is we became the voice at the table. We were pretty much at the senior management meetings, and also, meeting with the directors all the time to kind of... When they'd come up with a regulatory issue, we said, "Here's a P2 approach that might not be as brutal as going after a regulatory approach." That was kind of our part in a lot of it. And just, we did a lot of training of the regional people who really understood P2, and so, it was really the kind of the real help, and kind of difference of the program from others, I think. We did do supplemental programs, regulatory programs, which were actually really affective.

Cam Metcalf: Yeah. And I'd kick in there that the state programs were really interfacing with industry. And I think that feedback, through NPPR, who was key to all of this, that feedback to EPA for regulations and their voluntary programs. And I feel like NPPR basically helped the states coordinate and build our capacity internally, which was very key, especially to us newly states coming into this. Again, I think NPPR helped advanced we as state programs had identified as P2 needs, and the assessments that we had done.

And especially, for the collection of outcomes, and the cost savings that we were seeing, because companies were really beginning to buy into the bottom line. And the tools that were passed on, activity based costings. The things that a lot of our state programs didn't have, each. Somebody like Noboa would send someone out and teach our assessment people, "How do you do A, B, C?" And those kind of things. It really is, as we all emerged, NPPR really helped us pull ourselves together and go further.

Gary Hunt: Cam, I think really early, the idea was to steal from the best and claim it as our own, was kind of the cornerstone of why we had the first meeting back in '85, was my boss told me, "We need help on this." We got our people together, we served them barbecue and sweet tea in North Carolina, in Raleigh. And they came on down. We also found there, then, that people like to eat. Picky people,

so food is important. But the whole idea is we were able to get to coordinate all our efforts.

We had a lot of materials, but other states had other industries that we could use here. We just traded, and swapped, and called each other. And it really was that coordination, was so much the key. EPA then kind of came down, they were at our first meeting for solid waste. And they didn't know what to do, either. They were able to really work with the states, because we were kind of the laboratories of innovation. We would try things, find what would work, what wouldn't work. EPA would kind of bring that up to a national level, and it was the speed back which was so important.

Andrea Kreiner: Yeah. And Cam had mentioned the hospitality suites, but the other point of the hospitality suites was not... We would come together, and it wasn't so much what would happen in our formal sessions, but it was the brainstorming, and the collaboration, and the discussions that would happen in between sessions, and literally late on into the night, in the hospitality suite. Someone reminded us yesterday that P2 used to mean, Please Plagiarize. And we would borrow from each other.

If one of us was... We'd share our challenges and our goals, and we were able to actually help each other address our challenges and improve our goals. If I had a question, I don't know how many times I called Cam with some solvent question, because here I was, the economist, dealing with companies about solvents. But I had my team of engineers in other programs who were there to support me. We were able to actually have even leaner programs than we would have otherwise, because of the network we created.

Cam Metcalf: And again, I think that sharing, really, was a lot about, "How do you be an effective P2 change agent?" How do you pick up that role when you're going into companies where they have engineers that understand the processes better than you did? And that sort of thing. How could you achieve behavioral change in that company? And, with the adult beverages, and the suite, I think we loosened up and said, "Hey, how are you doing that?" And it really became an important part of those meetings, to me.

Again, that shared learning, and, "How do we distribute this stuff?" And, "How do I use the P2 library better?" And all those tools that we were all putting into to share. But being a good change agent, believe me, that's the key.

Ken Zarker: Yeah, we-

Gary Hunt: I think one thing, too... I was going to say, one thing, too, that EPA really pulled on is, a number of the study groups and FACAs, and things that EPA pulled together, they pull a lot from the roundtable, helped provide the expertise to a lot of those. We were in a lot of the regulatory development. I was personally involved with all the furniture max, and other things like that. We were some

national, very high level national programs that were developed by the EPA and their advisory group. I think the whole advisory group was a very important piece that we were able to provide to EPA.

Andrea Kreiner: Just the throw in one last thing, the other beauty of the NPPR, and our working together, was we each came with different perspectives, partially depending from where we were in the country. And you can't help but when you address a problem talking with people from other perspectives, to get a better solution. And that even grew through the '90s when we would start talking internationally. The folks in Europe, the folks in Asia had other perspectives. And we really, things really grew then because we all appreciated each other's perspectives, and we came to better solutions to problems. Both were industry and internal to agencies on how to drive P2 forward.

Ken Zarker: Right. When you think about we did all this pre-internet days, pretty amazing how that worked. Thinking about it. And so, what would you offer, what are some of the elements that we should be thinking about as we reinvent ourselves on a new platform? Something like what we're doing today, and how that might work. And how to engage in doing technical assistance with folks going forward. Or you have some thoughts, maybe on how you would, if you were starting out in your career today, what are some of the things you'd be thinking about?

Cam Metcalf: Being electronically challenged as an old dude, I would say that we still need a focus to get through all this information age. And how do we get right to specific things? Especially the real how to. I don't care if it's how to plate, print, clean, whatever it is. There's so much, and I've heard Gary say this, noise, out there. Even to the number of P2 approaches, voluntary programs, and all of that. How do we navigate that? And I think that's still an important role that needs to be played. And I think P2 University is the new one, Cesar. And I remember Cesar, I think, back in Ohio in the old days.

Gary Hunt: I think one thing, that it's really, now, more about the economy and markets as much as it is about regulatory, and that's so important right now. I know North Carolina were able to really leverage up retired engineers. This problem has now been around for 20 years. And particularly, the small businesses. We talk about high tech stuff, but a lot of these small businesses we've walked into recently, we're still talking about the stuff we talked about 30 years ago. But it's an education, again. They really don't know. And so, I really think it's that hole again, as Andrea talked about, it's the money. It's the economics. And again, it's the marketing piece.

Andrea Kreiner: Yeah. And I think an important thing to recognize is that it's not like we answered all the questions back then. We used to always think, "Oh, we'll get through the low hanging fruit. And then we'll just have to deal up in the more challenging things." But as new companies start, as new people come into P2, we're dealing, again, we're always going to be dealing with that low hanging fruit. There's never a question that is too elementary to ask. Right? Because it's

always going to be new to whether it's a new company or a new person, and the roundtable can be a real resource for helping people get those answers.

Cam Metcalf: And if they pick the low hanging fruit, you teach them to be better and higher fruit pickers. That's key to it. And the retired engineers, when I mentioned, I did the first program there in North Carolina on a Region 4 TVA grant. And what they brought, and I talked about change agents, they understood the industry, and the companies, and their internal drives. And so they brought so much to it, and as we saw, student engineers brought into it, in programs. [inaudible 01:04:55], Iowa.

That intergenerational transfer of knowledge was key.

Andrea Kreiner: Yeah.

Ken Zarker: Yeah. You mentioned that pollution prevention was there on the forefront, and we've seen quite a number of themes come through the years as I see things like green building, environmental management systems. A lot of those things sort of started at the roundtable in a lot of ways, and came through, and then spun out. I was wondering if you had some thoughts on where you see the opportunities in the future, given that we do have more of a global economy. We do have small businesses as well, and we work with dry cleaners, and small business.

But how do you start to leverage the impacts in terms of the global economy, in terms of what some folks may refer to as a circular economy? And how is P2 going to play in that?

Cam Metcalf: Well, I did a lot of training internationally, and with companies that had closed their loop. I mean, the water they could get out of the Pasig River was so polluted, they had to treat it before they could even use it. Once they got it clean, they kept it clean. That's what I found out, is I went internationally thinking we were taking the US approach. I bumped into a lot of companies that had already closed that loop, and reduced water discharges, and all of those kind of things. Even though their regs weren't that intense. I think we've got to look globally. There's a lot of good info out there.

Andrea Kreiner: One of the last things I did, was I trained the trainer of engineers in Thailand to do P2 assessments. And this was a group of university people, business people. I mean, it was all a very wide ranging group. And it was funny because, I'm assuming we still do a bunch of the P2 assessment training using play dough fun factories. And they said to me, they said, "I don't know how our folks are going to like this training. We're used to sitting in lectures, and being talked at." It took them half a day, and they were having so much fun with this interactive approach.

I, then, learned a year later, the 30 people that I taught had trained 1,500 people in Thailand. And so, you can't help but have a global effect, because it makes sense. It's an approach that makes sense. It makes sense for the environment, it makes sense for the business. And things that we work with, if we work with our multinational partners here, they're going to bring that to their other plans.

Ken Zarker: I want to thank the panel. Great to see everyone. Thank you so much for connecting and spending time with us today. With that, Laura, we'll bring you on.

Laura Henne: As I said in my introduction we were established in 1985 as the National Roundtable of State Waste Reduction Programs, and we are the only national organization devoted solely to pollution prevention. And we have a wide ranging membership of local technical assistance programs, to Canadian partners, trade organizations, industry. We're open to just about everybody. Next slide.

By now, you know what our mission is to reduce and eliminate waste in multimedia fashion, so let's move on. What does the Pollution Prevention Roundtable do? Well, we're a voice for pollution prevention. We monitor impending federal legislation, and work with members to encourage the development and implementation of policies. We collaborate with different partners. Ken Zarker is our liaison with ECOS, and we work with EPA, and we're currently working on addressing pollution prevention in TSCA.

We have many work groups. As you can see, some of them are based on NEAs established by EPA. Some of them are ones that were brought by members. And the work group is really a chance for the members to participate, and to work with each other. To learn from each other, to teach each other, to mentor each other, to share information. It's really a very important part of the roundtable, and what we do.

We also have quarterly newsletters. You can upload information that you want to share with the rest of the membership. We have an air table link that I believe will be presented at the end, or afterwards, so that you can share what's going on in your state, what's going on with different companies, any success stories. We really want to hear from you. The more information we share, the stronger we become. We have biannual member calls. We, of course, are celebrating National P2 Week. This is the 30th year of the P2 Act, and we have this beautiful poster that was designed by Laura Regan, with thanks to funding from the Washington State Department of Ecology.

And we have tchotchkes available on the fine arts website to purchase that as a mug or a poster. It's a beautiful poster, and we're really proud of it. And then the other thing that's really important that we do, is we have annual Most Valuable Pollution Prevention awards. We give these out annually. We've done it since, I believe, '98, if not earlier. And it's definitely a way we recognize other

people's achievements, and we spread the word with what pollution prevention can do for you. We used to give out... We used to have ceremonies in Washington, DC, but now we've moved to have ceremonies in different capitals, or cities, or whatever. We have a government official usually presiding over this so that we get the word out to the government how important P2 is.

Next slide. We have seven different categories of awards. The first one here is the Fred Granek P2 Ambassador award. Fred Granek was the head of the Canadian Center for Pollution Prevention. He worked on pollution prevention and environmental issues for 39 years, and this award recognizes those who traveled beyond their own borders to share information, ideas, and technologies. And this year, we're proud to say that the award goes to Mark Rossi. I'm going to take a minute to talk about Mark Rossi, he's got quite the resume here.

Mark Rossi, PhD, was one of the first employees of Massachusetts TURI, Toxics Use Reduction Institute, where he authored studies and policy recommendations that helped shape the way pollution prevent has been pursued in the United States. His achievements since leaving TURI are considerable. He's one of the creators of the chemical footprint project, getting manufacturers and retailers to benchmark their progress in chemicals management performance. Focusing on reducing potentially hazardous chemicals. He is the founder of BizNGO.

However, he may become best known for his work as the co-creator of the green screen for safer chemicals, and beyond that, the Green Screen Certified. When investor Environmental Health Network, the lead of that retired, it become incorporated into the Clean Production Action through Mark's efforts. He's currently the executive director of the Clean Production Action, which is an organization that sees its role as transitioning the systems-based vision of clean production to tool strategies NGOs, governments, and businesses need to advance green chemicals, sustainable materials, and environmentally preferable products.

We really want to give a good shout out to Mark Rossi. The other people up here are also worthy of the award. We have the award. The winners will be available through our newsletter, and will be on our website. And just let us know if you'd like to have any presentations from any of the award winners. It's something we thought about recently, having webinars where they talk about their projects in the case of award winners with projects, or they just talk about their experiences with P2. Let us know if you'd like to see some of that.

And I just want to let you know that if you're a member of P2, the MVP2 award application is free, otherwise there's a \$50 charge. We have some honorable mentions. We don't need to go to that, that's fine. That'll all be in the newsletter, so you can read in detail of the great projects that these people are working on. I wanted to talk to you briefly about P2U. As I said, beginning, we really wanted to have a conference. And this is our conference version. We're

having an ongoing series of monthly webinars. We're supporting networking and professional development. The first topic session will be in the third week of October. It's our food and beverage work group that will have a presentation open to more than just the work group.

And each month, we'll have a speaker. Let us know if you have ideas for speakers, if you would like to present on one of our webinars. And we hope to have this successfully done monthly for the foreseeable future, P2U. And I'd like to thank EPA Region 4 for coming onboard and helping us launch this. We have our executive board. It's myself, Meghann, Jennifer, and Joy. We're a well-oiled team by this point. We represent different regions. Joy, until recently, was a Region 1 representative, but now she's at large.

Ken, of course, he's our Emeritus on the board. We have different regions. The only region we have open currently is Region 7, we're very proud of that. Continue. We have quite a few at large. We're up to 17 in the board of directors, which is pretty impressive considering we're only supposed to have 15. But we were down to, I don't know, they said four or so before I came back on the board. It's going uphill. We're doing great. I can see the future is looking great, and we hope that you become a member, and that you help contribute so that we form a nice community of P2 practitioners. Next slide. Okay. Are there any audience questions?

Ken Zarker: Meghann is monitoring our question doc, so do you want to... Yeah. We'll also just, yeah, say congratulations to the winners this year. Hard work recognized for all the great work that's going on around the country. And we encourage you to participate, get involved. It's a great opportunity to meet friends and colleagues you'll have for life. And I know with the NPPR, it's just in terms of professional development, as well as helping out a career in terms of working with all the folks around the country.

I've worked in both Texas, and now Washington state. And it's just been a fabulous adventure of this pollution prevention, field of prevention. I think Laura said it really well. It's this community of practitioners that all have a common vision, and work together, and share information. It's just really a rich community, and encourage you to get involved, and participate. We can use your experience, and especially in this time when we want to focus and promote diversity and inclusion. And I think the roundtable, really, has embraced that over the years. And we want to continue to build that, and get more folks involved. And it's just been a wonderful experience. Thanks for participating. Meghann, I'll check to see if there's-

Speaker 12: Ken.

Ken Zarker: Yeah?

Speaker 12: Oh, yeah. Ken, we do have a question that came in during the P2 Pioneers panel. And that question is, what were the biggest barriers in selling P2? And, what's the best way to overcome it in your experience?

Ken Zarker: All right. We're going to bring our panel back for an encore.

Cam Metcalf: Well, I would say that, initially, companies wanted to put in the minimal effort to get to the regulatory level. And they weren't quite ready to put in more money. Many environmental health safety people would say, "Cam, I can't go back and ask for something, especially if it was more than a one year payback, or a two year." Very few, and I might've found two in 30 years, companies had a five year payback. But I think somehow saying going beyond compliance was the tough thing to get the company to really put up that capital.

Andrea Kreiner: For us, coming out of a regulatory agency, it was building the trust with the company that we would be going in and not ratting them out if we saw something that was a little unsavory. And it was interesting, because then, when we'd go in when there was already an NVO, that was a little easier, because then we were going in totally... The company was like, "All right. Well, we already have our NVO. Come in and do what you want." But it was building the trust.

I remember it took one company where the issue was their VOCs, and they were going to be a major source, which was going to be a very expensive permit. And we were able to totally non-technically, just by looking at what their practices were, as far as what they were painting, and how much they were painting it, able to have their paint usage. And it took them a year to fess up to me. I had to actually see their product, and say, "Oh, I see you've done what we were talking about. How much money have you saved?" And they said, "Oh, \$70,000 a year in paint." And they didn't want to share that information with us, initially. It was a case of needing to build the trust with the company that we really were there as an ally.

Gary Hunt: Yeah. I think one of the issues that we kept running into, was, a lot of the plant managers wanted a silver bullet solution. They really did not want to go back in the plant and do some modifications. A lot of it, just training and such, and minor modifications. As one plant manager told me, "I can't tell my people what to do. I just want this plant on the end of the pipe." A lot of that was just going back and showing the economics and such.

An interesting barrier we found at one point is that they didn't want to do it because it would show corporate how much money they actually were wasting. And so, we were able to work with them on kind of developing a presentation to their board that kind of said, "You know? Let's change. Look at all the money we're going to save you in the future." The manager was really afraid he'd get reamed for wasting materials, which he wasn't. That was just the way they always did business. There's a lot of... A lot of it, Andrea's right, it's the trust

piece. And it's showing them how to present to corporate to get the money. And payback is huge.

Cam Metcalf: We were free, confidential, non regulatory, and I think, sometimes, our reports, a lot of those things in the report were common sense. The environmental health people hated to take that on up to the front office, because, "Hey, how come we ain't been doing this kind of thing?"

Andrea Kreiner: Right. I remember with this same company, we turned it around. We knew they were doing a lot of customer surveys, and we said, "Okay, why don't you ask your customers what they think?" This was, basically, it was file cabinets that were being painted on the inside, and they thought that it was their high end file cabinet was like a Porsche, and you needed to see the underside of the hood painted. And I said, "Ask your customers. You can market it as your green file cabinet that uses less paint, and has less emissions." And that's actually what they did. We gave them a way to present it that it wasn't, "Hey, we've been wasting all this stuff. But here, we can do it new."

Ken Zarker: All right. Well, any final-

Meghann: We had one last question.

Ken Zarker: Oh? One last question?

Meghann: It was a multi-part question. How do we become a member, and spread the word about NPPR? And can we have an NPPR virtual happy hour? That's not my question.

Cam Metcalf: We already do.

Ken Zarker: It was already started. No. For the Kentucky Pollution Prevention Center, thanks, Cam. We'll welcome anyone, and I would take it to our website. Reach out to one of our board members. Talk among your, if you're in a regional area, get involved. We would like to touch base. Give us an email or phone call. We just have a minute-

Gary Hunt: Can you give out the website, Ken?

Ken Zarker: Yeah.

Gary Hunt: Can you give out the website?

Ken Zarker: What? P2.org?

Andrea Kreiner: Actually, Laura just posted it in chat to everybody.

Laura Barnes: Yeah, I posted-

Andrea Kreiner: You put the thing in?

Laura Barnes: Yep. I posted the membership link.

Ken Zarker: Great. And-

Gary Hunt: Oh, good. There it is.

Ken Zarker: Yeah, folks. For the social media, we have #P2Week is out there going on. Check that out. Thank you to EPA. Thank you Cesar, Region 4. And Kathy, Tina, and Pam, and our panelists today. Thank you, Laura. Thank you, Greg, and Laura Barnes, for helping to support this. And Lissa for bringing this forward. I think we'll go ahead and close it out unless there's anything else last minute that we need to mention, Lissa, or Laura?

Laura Barnes: There are no questions from the audience, so I think we're good unless Lissa's got something final to add.

Lissa McCracken: Hi, this is Lissa McCracken. No, I don't. Thank you, everybody. This was a lot of fun to put together, and looking forward to moving ahead with P2U. And thank you again, EPA, Region 4, for being a part of it. And yes, we are going to have some more happy hours. Looking forward to that.

Ken Zarker: Again, thanks everyone. Congratulations to our award winners. Happy P2 Week. Let's do this again, and keep up the good work. And thanks to everyone for joining today.