

Western Massachusetts Solar Forum: Session 1 Transcript - September 5, 2023

Participant: Wordly [W] English (US)

00:00:00 [W] The bottom left corner in case if you have any audio or video file within your presentation, don't forget to check on that.

00:00:06 [W] So that you're in these can hear that do.

00:00:08 [W] Okay. I do not. Can you see my screen?

00:00:11 [W] Okay. Yes. We can see your presentations. Kind of go through some slides for me, just to make sure that there's no lag and we can see it.

00:00:21 [W] Yeah, it looks good.

00:00:22 [W] don't see lat.

00:00:28 [W] I want to stop sharing our yes, if you can.

00:10:54 [W] we can do now that everyone in

00:10:56 [W] thank you so much.

00:11:33 [W] Recording in progress.

00:11:43 [W] Welcome everybody.

00:11:44 [W] To the western Mass solar Forum will get started in a couple minutes.

00:12:40 [W] All right, welcome everybody. Again, to the western Mass solar Forum.

00:12:45 [W] We look forward to starting in another minute.

00:13:47 [W] Okay, my clock just switch to 1202. So I'm going to get started. And again, my name is Dwayne breger. I'm the director of the clean energy extension at the University of Massachusetts and welcome everybody to the Western Massachusetts older

00:14:02 [W] We're excited to have you all join us today.

00:14:04 [W] We're really excited with our Partnership of State delegation, and for all the attendees that are joining us today.

00:14:14 [W] And for our great set of speakers that are introduced during the program today will be meeting from noon to now until 3:00 with an agenda.

00:14:25 [W] A great agenda of State speakers National Speakers and Industry speakers to get us started in this.

00:14:31 [W] Forum.

00:14:32 [W] As you know, this is a four-part form each Tuesday, starting at noon in September. This is Session One. Solar, in Massachusetts, past present and future.

00:14:45 [W] I'm going to spend about 10 minutes getting us oriented with the logistics of the Forum and the event platform or attendee Hub and the zoom meeting and then get started with the agenda itself.

00:15:01 [W] as you as you have, probably recognized with your registration when you register your encouraged to enter the Forum, through the attendee Hub, or the event platform, which is set up by our

00:15:17 [W] Company, C vent, thats administrating, this forum. Once you're on the solder, the attendee Hub which is shown here to the, to the right? This is the platform in which you can ask questions, you

00:15:32 [W] View speaker bios.

00:15:34 [W] You can look at the detailed agenda and then it will also be available translation into Spanish and transcriptions into English and Spanish.

00:15:44 [W] And there is also access to a post session survey will take a look at that in a moment.

00:15:51 [W] And then when you join the meeting, a zoom window, should open

separate from the attendee Hub, which will be your normal looking at Zoom window.

00:15:59 [W] And in this was, umm, when do you can watch

00:16:02 [W] Each speakers. Watch the presentations. The chat function, for the attendees has been disabled for the duration of the of, the, of the sessions.

00:16:14 [W] attendees or muted, we have a large audience and so too much interaction of that would not be feasible for us and I'll get into that in a moment when you enter the zoom meeting

00:16:29 [W] Camera should be defaulted to off. But you have the option to turn them on. We were planning and I apologize.

00:16:37 [W] We were planning to have American Sign Language available today.

00:16:41 [W] Our sign language professionals team were stricken by the co Vivid virus and we're not able to join us today.

00:16:51 [W] We are working to provide an ASL Trends, transcription or translation.

00:16:58 [W] To the zoom recording that will be available later if you need that.

00:17:03 [W] But there is going to be English, translate trans transcription of the of the text, if that can be helpful to you,

00:17:16 [W] On the attendee Hub, this is where you can find on the right hand side.

00:17:21 [W] Once you join a set, the session session one. Here on the right hand side of that screen is where you can enter question questions or comments for the speakers and for the clean energy extension and all

00:17:36 [W] This is also where you can find a survey for after the session, this survey will be available 15 minutes before the end of the session and made available for 48 hours.

00:17:51 [W] Ours and we encourage and would very much encourage folks to spend a little bit of time, filling out that survey, so we can get feedback on this session.

00:18:00 [W] And each of the subsequent sessions on the right hand side of this attendee Hub on the session page, you can also gain access to the translation services on this session on

00:18:15 [W] Session page on the attendee Hub. You can also find further information on this speaker bios and also where we will be posting the presentations of the speakers as they come in.

00:18:33 [W] I said that.

00:18:33 [W] yeah sorry if you for some reason you drop off of the zoom meeting and want to need to get back in, easiest to get enter back in through the attendee Hub again.

00:18:44 [W] The sessions will be recorded all the sessions will be recorded and made available on the attendee Hub within a.

00:18:53 [W] I think about 24 hours but then also we they will be permanently provided on the clean energy extension website for this.

00:19:02 [W] Orm as well along with the speaker presentations.

00:19:09 [W] We encourage attendees to post questions for the speakers and for and and comments as well. These questions will not be available or not. Be visible to other attendees but

00:19:24 [W] The questions will be read by the clean energy extension and other support staff.

00:19:28 [W] We have sub moderator session, sub moderators working today, that will be distilling. The questions that come in into a few questions for the moderators to offer during the Q&A period in the agenda

00:19:44 [W] We will not be able to get to all the questions but we will try to distill some of the key information from those questions to pose to the speaker's question to also and comments will also be important to us as we develop the white paper.

00:19:59 [W] reporting out on this form to hear feedback from attendees and also, in the development of a anticipated, part, two of this form some time in 2024, where we do expect

00:20:14 [W] To have inner looking to provide a more interactive opportunity for constituents of stakeholders to come together in a, probably a hybrid live and zoom meeting.

00:20:35 [W] A big shout out and thank you to our state legislature Co sponsors listed. Here we have widespread interest amongst the state legislators in Western Massachusetts and Beyond and we are fortunate.

00:20:51 [W] It and grateful for your interest and co-sponsoring this forum.

00:20:55 [W] And I want to particularly highlight, our dear local delivery delegation here from from Amherst, who have not only been sponsored by partners with us throughout the conception and development of this forum them

00:21:10 [W] Their staff have been wonderful to work with.

00:21:13 [W] They, they are on the front lines, in many way, in many ways of these issues as they hear from constituents citizens, as well as municipalities on how to work through the various

00:21:28 [W] Issues associated with solar in our communities. And we are most grateful and fortunate to have the partnership of our state. Senator Joe commerford our state representative Mindy Domb, who have been wonderful partners with us during

00:21:43 [W] And throughout this development of this form. So thank you Jo. Thank you, Mindy.

00:21:50 [W] And I also want to acknowledge and thank are numerous State and Municipal officials who have joined us today through us. But also particularly through Senator commerford and representative Domb. We've gone out

00:22:06 [W] 22 to make this forum available to Municipal officials again.

00:22:11 [W] They are also on the front lines of these issues and and we are very thankful for that is for their time to join us today and acknowledge and appreciate their attendance. Thank you.

00:22:25 [W] I do also want to recognize and thank the solar Forum planning committee who has worked with us over the course of the month, backing up into Springtime and throughout

00:22:40 [W] Summer who have worked together with the clean energy extension with Center of common for with representative Mindy. Domb to develop the agenda and speakers and Outreach for

00:22:55 [W] This owner planning committee.

00:22:56 [W] So thank you to the planning committee members.

00:23:01 [W] With that, I want to sort of move towards the business at hand which is our session one. Agenda on the event platform or attendee Hub on the home page. You can download a detailed agenda which will look like this

00:23:17 [W] To set out the course for today. We have essentially two parts with a short break in the middle will first hear from our state. Highest officials on climate and clean energy

00:23:32 [W] We'll hear from the federal perspective and we'll hear from further from the energy and environmental Affairs. Secretariat will take some questions for

these speakers, have a short break

00:23:47 [W] And then move on to the commissioner of deal, we are to look at the technical potential study for solar along with any anything else.

00:23:58 [W] she would like to present.

00:23:59 [W] And then we have a presentation from the from the industry to get their perspectives in terms of how the solar industry has been working past present and into the future, we'll wrap up with some additional Q&A for those speakers.

00:24:15 [W] As well as wrap-up and preparations for the next session. Next Tuesday.

00:24:31 [W] so, with that,

00:24:35 [W] The the form provides for attendee input again, through cute, the Q&A in the attendee Hub and post-session Survey surveys that are accessible.

00:24:48 [W] Also from the attendee Hub, again, that post-session survey will open 15 minutes before the end of the session and available for people to respond to over over the next 48 hours.

00:25:03 [W] Well, we hope we would be able to facilitate more direct engagement with the large amount of attendees. We have today, we really needed to limit the engagement a direct engagement with the speakers. And

00:25:18 [W] Each other quite limited.

00:25:21 [W] Our objectives for this session is to bring forward key information, and breadth of perspectives to to all stakeholders.

00:25:29 [W] So this is more about hearing and listening and learning and knowledge creation and development for the attendees to elevate the discussions that will continue that, we will all have continued to have within our

00:25:44 [W] Two parties and our communities and to identify gaps in knowledge Market. Barriers, policy needs that are important to address.

00:25:52 [W] We do anticipate organizing a part, two of the western Mass solar Forum some time in 2024, which we hope will be more interactive and an Engaged venue to advance this discussion and solar planning.

00:26:14 [W] Was that my me with it with these Logistics and acknowledgement and objectives behind us?

00:26:20 [W] Let's turn the session one and get things started.

00:26:23 [W] Let me open by acknowledging and thanking all the attendees who have joined us and those that may be listening to these recordings. Later, many of us had been working in the Solar area for many years.

00:26:37 [W] years, I'll While others are just recently. Engaged, I think we all share a commitment to address our climate

00:26:43 [W] See and to protect our environment and natural and working lands all of which plays an important role in our economy. Our values in our communities.

00:26:54 [W] I think we all feel fortunate to live in a commonwealth which is stake in leadership. In this charge, we are here to learn from each other respect. Each other adding knowledge, at the end of the day, each of us wants to do good work and bring forward.

00:27:08 [W] good outcomes. Stating the obvious this is hard

00:27:13 [W] We wouldn't be gathered here if it was easy. While mess.

00:27:19 [W] Western Massachusetts has unique qualities.

00:27:19 [W] How communities want to see, silver development, as it now progresses to scale and how markets and policies are able to deliver these outcomes is a conversation going on throughout Massachusetts?

00:27:35 [W] It throughout the country and in fact and indeed throughout the world

in many places. The further this conversation here we are so pleased to have our session. One speakers, join us today.

00:27:50 [W] This session looks to solar in Massachusetts, past present and future, and to set the stage and provide a baseline of information on solar markets and policy within the national policy and within the broader State climate policy,

00:28:04 [W] I will introduce the speaker's individually as they join us for the agenda as we need to stay on a tight time table for our agenda, our technical staff will chat to the speakers as their time period. Comes close

00:28:20 [W] To an end, kick off the form. We are so pleased to have our to State officials who have been appointed by Governor, Maura, Healey to drive our climate and Energy Future forward to offer opening keynote remarks.

00:28:36 [W] First up is State climate.

00:28:39 [W] Chief Melissa Hoffer and she will be followed by our executive office of energy and environmental Affairs. Secretary Rebecca Tepper and Melissa.

00:28:47 [W] Thank you.

00:28:48 [W] I do. See you highlighted now and so much.

00:28:52 [W] Appreciate you being here and the floor is yours.

00:28:55 [W] is yours. Thank you. Thank you so much Dwayne and I wanted to just offer my thanks as well to Senator Comerford. I know that this has been in the planning for a while to representative Domb.

00:29:05 [W] All of our colleagues in the legislature who helped put this together.

00:29:08 [W] And, of course, my colleague, my dear colleague for many, many years secretary Tepper.

00:29:14 [W] I'm really pleased to be here with you all today. For this forum. It's a wonderful and much-needed idea. I think folks know I live out in Barry, but I consider myself a honorary resident of Western Mass because I spent so much time there.

00:29:29 [W] So it's a real pleasure for me to be here and share this time with you today. We're here today to talk about solar power and that's one of the most important issues for our region and it's one that touches on so many topics that are close to our heart

00:29:45 [W] You know, first of all, we have the need to limit further warming by eliminating Reliance on fossil fuels, and the need to do that as quickly as possible.

00:29:53 [W] The need to protect our forests which are key to maintaining ethological diversity key to helping us meet our emissions reduction mandates because they can help us sequester carbon key to maintaining healthy watersheds and more

00:30:09 [W] Because our forests, our beloved part of our communities. They're part of who we are.

00:30:14 [W] We have the need to ensure that the energy and environmental justice are Central in this energy transition. And that were really thoughtful and intentional about how the burdens of our Energy System are distributed.

00:30:27 [W] So before I turn to that, I wanted to offer a few observations about the summer of 2023 at some framing points for this conversation. I know that many of you track these data,

00:30:38 [W] Closely. And for many of us, it's been absolutely heartbreaking.

00:30:42 [W] It is in fact difficult at least for me to process the enormity of what has unfolded, it may not be a surprise. It is indeed what the models have been telling us. Although it's occurring in a more accelerated fashion, but living

through it is a very different thing.

00:30:58 [W] I'm not going to go into the Litany of the incomprehensible tragedy that is unfolding by now.

00:31:05 [W] we've probably all seen the videos of flooding in China and India. We're aware of the huge numbers of people who've lost everything, some living in. Encampments, some are homeless,

00:31:20 [W] The fires burning in Canada, Greece and Spain. The fires. We saw in Italy and Maui.

00:31:26 [W] the Marine heat waves that bleached corals and killed ocean life, the heat domes, the droughts the record Lost in an Arctic sea, ice extent and the crop losses.

00:31:41 [W] We've seen catastrophic loss up close this. Summer to Western Mass in Vermont experienced, a deluge of rain, severe flooding in early July, we had about 1,000 Acres of Farmland in Massachusetts under water.

00:31:56 [W] Our department of agricultural resources, commissioner reported that the recent flooding might have caused more than 10 million dollars in Damages and crop loss.

00:32:04 [W] The effect on those farm lands, their economic output is likely to be felt into the future because some of them might remain unfit for planting due to Topsoil loss or exposure to sewage and chemical contaminants that were in the flood water.

00:32:21 [W] So I don't need to tell you but this is our food, it's hard. Sometimes when we hear these numbers and statistics to understand what it really means for the people who lived through these events.

00:32:32 [W] So I just wanted to share a story that was touching to me.

00:32:34 [W] This one was reported by CBS. When the flooding hit Williamsburg Mass, the floodwaters trapped a woman in her husband in their home on Ashfield road.

00:32:46 [W] Ford was so powerful that it actually eroded all of the ground around the house.

00:32:51 [W] They couldn't get it out like suddenly they had a moat around their house, it happened very fast.

00:32:56 [W] They had about 25 minutes to grab Essentials before First Responders evacuated them by a boat.

00:33:03 [W] So you kind of put yourself in their shoes and think, you know, what would you grab in 25 minutes?

00:33:08 [W] So that rain event on July that weekend of July 8th caused about three to five billion dollars worth of damage across the Northeast. All kinds of losses property and job and wage loss has props infrastructure damage,

00:33:24 [W] folks probably saw this weekend and in the news a few were tracking the announcement of multiple insurance companies that they're going to be withdrawing from certain regions in the country altogether because they won't be able to afford to cover risks like hurricanes like these

00:33:39 [W] The Bloods.

00:33:40 [W] So one thing is really clear, if it wasn't already, we've lost our stable climate, that is gone.

00:33:48 [W] And our task now is to learn to be with these accelerating and intensifying impacts. While we hold on, steadfastly to our vision of what is possible and we build our human capacity for resilience

00:34:04 [W] Putting one foot in front of the other and doing everything in our power to get off of fossil fuels, as quickly as possible.

00:34:12 [W] This is really important.

00:34:12 [W] We got to do that in a way that respects, the Integrity of our Ecological systems, that is Equitable and that reflects the clear teaching of the anthropocene. We're a part of this natural world.

00:34:26 [W] Part of an interconnected foal.

00:34:27 [W] and we've got to respect that interconnected whole as we shape our new Energy System and that includes our solar possible.

00:34:36 [W] It's evident that the momentum, which we find ourselves collectively right now is unprecedented for humans and because we've Delayed Action on climate for so long.

00:34:47 [W] We now find ourselves in this really difficult posture, we've got to do two things, right?

00:34:52 [W] We've got to make these extremely deep emissions Cuts in a very short period of time.

00:34:57 [W] While at the same time, we are adapting to these increasingly disruptive impacts of climate change. We have to make ourselves more resilient

00:35:06 [W] So with that, let's turn to solar the story of solar in Massachusetts.

00:35:11 [W] The story how we can use, Smart policy that says the right Market signals to accelerate, the energy transition, when I was a little girl, my dad used to read to me the story of The Little Engine That Could, I don't know if any of, you know the story or okay. I see some heads

00:35:26 [W] Body.

00:35:26 [W] So it's about a small blue train engine and just train engine was only used for limited purposes in the train yard and there is a broken-down train and that train is filled with toys and all kinds of good food and things that the children need

00:35:42 [W] Up a mountain and down into the next Valley.

00:35:44 [W] So this broken train and and the toys and the animals on the train are all asking a little engine.

00:35:53 [W] Can you please try to get us over this mountain and so the little engine says, okay, you know, I'll give it my best shot and so on the way up the mountain, a little engine pulling this heavy heavy load of train cars and it has a mantra and that Mantra is

00:36:08 [W] I think I can, I think I can, I think I can, I think I can and that's what makes all the difference.

00:36:13 [W] This little engine, makes it up the mountain and delivers, all of these good things safely to the children. So the little engine keeps her eyes on the prize, no matter how daunting the task seems by the way, the little

00:36:29 [W] Engine in this story is a female.

00:36:30 [W] So that's probably part of why I like this story as well.

00:36:34 [W] So if you are looking for evidence that we can, that we can do what we think that we can do, and we can succeed that we can achieve our emissions reduction goals and also help reduce the impacts of warming. Listen to these facts in 2010,

00:36:49 [W] Solar power with seven hundred and ten percent more expensive than the cheapest. Fossil fuel, seven hundred and ten percent more expensive than the cheapest fossil fuel just 13 years ago. Today solar power cost, twenty nine percent.

00:37:04 [W] Less than that.

00:37:05 [W] cheap as fossil fuel from 2010 to 2020. To the global weighted average

cost of solar electricity fell 89% in the US. The average cost of solar is about 3 to 6 cents per kilowatt hour and it's going down.

00:37:20 [W] Well electricity from fossil fuels cost five to Seventeen cents per kilowatt hour and it's going up today.

00:37:27 [W] expensive for 99% of our coal-fired power plants to keep running, then it would be to build.

00:37:33 [W] Build new solar or wind facility.

00:37:36 [W] the marginal cost of coal fired power. In this country is \$36 per megawatt hour and for solar it's 24 and a megawatt hour.

00:37:46 [W] You can think of it's a thousand kilowatts of electricity used continuously for an hour.

00:37:51 [W] So you can think of it.

00:37:52 [W] it. It's about enough power to run 330 homes for an hour. So all utility scale, Renewable Power Generation, Massachusetts came from hydroelectric and biomass and

00:38:03 [W] Till 2008, we can all remember that.

00:38:06 [W] Like it was yesterday.

00:38:06 [W] Now just just a few years later we're ninth in the nation for the amount of electricity generated by solar PV and by the middle of last year we had three thousand one hundred and seventy eight megawatts of installed solar capacity.

00:38:22 [W] City.

00:38:21 [W] Why why did that happen?

00:38:24 [W] It's a direct result of good policy.

00:38:26 [W] For example, at the state level, we have a renewable, portfolio standard, but that drives and requires the investor owned utilities to purchase an increasing amount of renewable energy. The federal level, we've had federal tax credits and other programs, and we've had

00:38:41 [W] Investments, you know, it's not just the IRA. This goes back to the American Recovery and Reinvestment Act, that help to drive down the cost of utility scale. Solar PV installations 60% with a 90 billion dollar clean, energy investment.

00:38:54 [W] We're going to do more with the IRA. None of this savings.

00:38:58 [W] none of these cost savings. Even begin to take into account. The mass of co-benefits and health savings that are associated with zeroing out, air pollution and other associated health harms or reducing water pollution.

00:39:10 [W] You know, that we can think of that results of the result of Frack natural gas or burning coal fired power or the disposal of waste.

00:39:17 [W] Now a footnote on waste because some of you are probably attuned to this.

00:39:21 [W] We are aware of projected increase in waste generated by solar Powers.

00:39:26 [W] Powers. We know that Irina and others have been projecting large volumes into the 2030s Harvard Business Review is pegging that number at 78 million dollars of tons. 78 million tons of used solar panel waste by 2050. So we understand

00:39:40 [W] We have to have the right incentives and processes in place now to capture and reuse those materials.

00:39:45 [W] So I don't want to come across as suggesting that there's no environmental impact of solar. But by comparison, these cost savings are dramatic in and of themselves. And what they don't take into account, our the massive health benefits as well. So what's the takeaway from

00:40:00 [W] All this, the takeaway is that fossil fuels days are numbered, they are numbered purely because this power is cheaper.

00:40:07 [W] Now, that doesn't mean that the fossil fuel industry is going to go down with a fight and that's why we have X on busy telling the Wall Street Journal last week, the world's going to fail to meet its 2050 Target to keep warming below 2 degrees C. And we're going to need a lot of fossil fuels in any event

00:40:22 [W] You know, it is unknown if we're going to be able to make that Target or not, but we're the ones who are going to decide it and we're going to decide it every single day with the choices that we make.

00:40:30 [W] So, the reality is, we've got to do everything lawfully in our power.

00:40:34 [W] Now to reduce the amount of energy that each of us uses and that is used by our Industries and quit, the fossil fuel habit immediately and we know we can do this.

00:40:45 [W] Just look at what we've done in the past, decade based on these numbers.

00:40:47 [W] I've just reviewed with you and we have to accelerate and amplify our efforts.

00:40:52 [W] So in 2022 more than two-thirds of our electric power still comes from natural gas, natural gas is methane. It's a potent greenhouse gas that in the near term in the first two or so decades after its combusted is about 86 times more potent

00:41:07 [W] And carbon dioxide in terms of its ability to warm the atmosphere.

00:41:11 [W] So it is extremely important that we reduce Reliance on natural gas as quickly as possible.

00:41:15 [W] We're going to need more solar power, more wind, geothermal title, Hydro battery storage, other clean forms of energy and we're also going to need to make much deeper investments in Energy, Efficiency, so all the infrastructure that needs to be built

00:41:31 [W] It also needs to be companion By changes to the distribution transmission system so that we can get that power to the places where it will be used.

00:41:38 [W] So how do we do that?

00:41:40 [W] That's that's the discussion that you all are going to be having today and thinking a little bit back to what Dwayne said in his opening remarks, all policy at its core reflects our values. So now it's time for us to Circle back and come full circle and

00:41:56 [W] Out. What are the values that are going to shape. Our solar policy. When you think about what our solar policy should be? What are the values that come to your mind? I think we're facing an existential crisis.

00:42:09 [W] we value life. We want to protect life. Many of us have families children, people that we care about in our lives.

00:42:17 [W] We care about animals.

00:42:18 [W] we care about plants and trees and ecosystem. Reducing warmer to save her levels and avoiding as much human suffering as possible.

00:42:26 [W] Requires the rapid elimination of fossil fuels, we have to transition to something. We value Equity.

00:42:32 [W] We know that fossil fuel energy system has left a legacy of contamination and heartbreak in its wake.

00:42:37 [W] So we want a new clean energy system and we want to build it differently so that it impacts because there will be impacts and benefits are

distributed equitably.

00:42:46 [W] We also value and want to preserve and build the resilience of our ecosystems.

00:42:51 [W] That's also really important. So those are just some values that come to mind for me, as

00:42:55 [W] As I think about this exercise, something like 60% of Solar Development in, Massachusetts has been ground, Mount solar and previously, forested land.

00:43:05 [W] We can do better than that.

00:43:06 [W] Recent studies show that we can meet our solar power needs while also preserving and protecting the forests that are essential to climate resilience.

00:43:14 [W] Commissioner ma he's going to be talking some more about that and the solar mapping that TR is engaged in. Now we can do much more to advance energy Justice by supporting Community solar that allows communities to reap the benefits of solar equitably.

00:43:28 [W] Even if they're not in a place where the buildings that they live in can post solar panels that ensures that they get the benefit of reduced energy bills and depending on what the project is maybe some increased resilience during blackout events. So we are living in a new

00:43:43 [W] Ooh, world we have the power working together to shape what we want and we want to do that with you.

00:43:50 [W] So we are in for some difficult times.

00:43:52 [W] I think we all know that we also have an opportunity here to learn from that and to create a better world. Thank you.

00:44:03 [W] Fantastic. Thank you.

00:44:06 [W] climate Chief Hoffer that was there was wonderful way to start off.

00:44:11 [W] I did not start off wonderfully because I forgot to introduce you formally.

00:44:16 [W] I have the short bio I did want to make sure that everybody was aware that the bios for all the speakers and their full bios are on the website, the attendee Hub, right? Did just want to introduce you a little bit more than I did briefly and apologize

00:44:31 [W] For that climate Chief offer is is an engine that that does and she's been at this for a while and just so people recognize she came to the to this position after spending time

00:44:46 [W] In the B Administration from the very first days, the Biden Administration as acting general counsel and principal Deputy general counsel for the EPA.

00:44:57 [W] And before that, she worked with the Attorney General's office in Massachusetts as the chief of Environmental Protection Division and the energy and environmental Bureau, she mentioned ExxonMobil and she was

00:45:12 [W] Really headed up the litigation against ExxonMobil, for Massachusetts, from the eighties office with regard to Consumer investors and consumers, risks associated with that. So and I did also want to mention

00:45:27 [W] And that she's no stranger to Western Mass of proud undergraduate from Hampshire college. And as she mentioned lives in Barrie today. So, thank you, Melissa, for joining us. And for those remarks, let

00:45:42 [W] R into e, EA energy and environmental Affairs, secretary Rebecca Tepper, prior to her appointment as eea, secretary, Rebecca joined the office of Attorney General.

00:45:54 [W] General Maura Healey now, our governor obviously where she was appointed chief of the energy and environmental Bureau during her time in the AG's office.

00:46:04 [W] She advised on energy policy and served as the state's rate payer Advocate before regulators and courts prior to

00:46:11 [W] Joining the AG's office.

00:46:13 [W] Rebecca was General Counsel to the Massachusetts Department of Public Utilities and served as director of the Massachusetts energy. Facility citing board. Secretary Tepper.

00:46:24 [W] Thank you so much for joining us and for your remarks.

00:46:31 [W] You'll just have to unmute yourself.

00:46:36 [W] Thank you. You think after a that would one still have to unmute yourself?

00:46:40 [W] Yes.

00:46:41 [W] Good afternoon, everyone. Thank you so much.

00:46:43 [W] Dwayne, for inviting us here.

00:46:45 [W] excuse me, and thank you too. Melissa. Steve Hoffer who as you can tell is a fearless leader and has been leading our state and the country for for many years and I have had

00:47:01 [W] Privilege of working with her and know, her commitment, and her go to attitude. So we're all lucky to have her leading our in our climate space.

00:47:13 [W] I also want to thank Senator come forward and rep. Domb.

00:47:19 [W] I think I saw you.

00:47:20 [W] Yes, there you are on my screen.

00:47:21 [W] Hi, thank you so much for your leadership and I can tell everybody on the, on the call here today that these two

00:47:30 [W] Rep and the rep and Senator are Avid supporters of Western Massachusetts and central Massachusetts and I am they have been nothing but welcoming to me and I just really appreciate all the work that they're doing in the close collaboration

00:47:45 [W] They're having with the administration. So we're we're lucky there. And, you know, I would just say thank you to our colleagues from t0e. And I think I saw some of our colleagues from the Attorney General's office on as well.

00:47:59 [W] So thank you all for being here. And I will say, as a starting point in the, how lucky we all are to be living in Massachusetts, you know, in Massachusetts we have Academia

00:48:16 [W] Nonprofits businesses government all on the same page when it comes to climate change.

00:48:24 [W] And that's as we know not a, not every state can say that but it gives us a unique opportunity to work together to make a change in to make differences.

00:48:35 [W] So I'm always happy to speak to a large group of people in Massachusetts because I know you're committed and I know that you want to work with us on making change here.

00:48:46 [W] I did want to just tell you quickly about a couple of things at my Secretariat that are new that I thought you might be interested in, which is one of the first things that we did when we

00:49:01 [W] Started in January was we created a new secretary under Secretary of environmental justice and equity. And we also created a new secretary of climate of decarbonization and resilience and Katherine antos.

00:49:16 [W] You can hear from later and she is she is the decarbonization and

resilience under secretary. And as you can tell by recreating those two positions, it shows the commitment that we have to those particular areas and having undersecretaries

00:49:31 [W] eating them has been very very helpful, another sort of marker of our commitment and of the governor's commitment is and the legislators commitment is that for the first time the energy Agency, energy environmental

00:49:46 [W] Agencies receive 1 percent of the budget for for our activities. And that's the first time that's ever happened. It's it was a tremendous effort by many people, probably on this call. But by our legislative colleagues

00:50:02 [W] And really appreciate it.

00:50:04 [W] I think you're all see the benefits of that in the coming year. So really looking forward to getting some more people in place to help us with our work.

00:50:15 [W] Most of you probably know that we have, you know, six agencies in the executive office of energy environmental Fair. Sometimes we say 7:00 but but you know, one thing that you may not know, is that even ones that like

00:50:30 [W] The Department of Agriculture or the department of Deeks, our department of conservation Recreation.

00:50:36 [W] All of our six agencies are working in solar in some way.

00:50:41 [W] So the Department of Agriculture is very busy, looking into a Grove otx the department of conservation and Recreation, it has a lot of land, and they're building solar on on their own land, and you're familiar

00:50:56 [W] Solar work of our Department of Environmental Protection and Department of energy resources.

00:51:01 [W] You'll hear from Elizabeth mahaney later who's our commissioner at doar and and DEP Department Environmental Protection.

00:51:09 [W] So, all of that, let's spend just a minute talking about clean energy. So as you all know, all of our decarbonization strategies depend

00:51:24 [W] And having a clean energy sector.

00:51:26 [W] So we must be producing our power with clean energy in order to Electrify our homes and Electrify our cars.

00:51:36 [W] Because if we don't, they won't be running on clean energy either.

00:51:39 [W] So it's a top priority to make sure that we have the clean energy that we need from solar from Hydro, from wind and all the Clean Energy Technologies. And this means that, you know, we're as

00:51:55 [W] climbing Chief Hoffer said, you know, it means that we're moving rapidly away from fossil fossil, fuels and producing our power with clean. Energy are clean energy and climate plan for Massachusetts estimates, it will need about

00:52:10 [W] Ten times the amount of solder that we have right now by 2050.

00:52:16 [W] So as Chief Hoffer mention, part of the good news on that front is that we do have this new technical potential of solar study that commissioner my heinie.

00:52:27 [W] We'll talk about more later but it analyzed every parcel of land in Massachusetts, and write them from most, to least suitable for solar, and the study found that there was far more solar frankly, a potential

00:52:42 [W] And I think many people thought, so we can be strategic about where and what kinds of solar were deploying without sacrificing, our natural resources and our clean energy goals. So really

00:52:57 [W] A big report that will be very helpful in policymaking.

00:53:00 [W] We also want to make sure that everyone has the opportunity to benefit

from the clean solar power.

00:53:08 [W] One way that we can do that is through State funding a couple of months ago, we announced a 50 million dollar low-income housing solar and electrification program.

00:53:22 [W] The applications for that came in fairly recently, so we're

00:53:26 [W] Looking at those and, you know, we hope to make a dent in particularly on public housing, getting solar and electrification done in those in those buildings. We also are working on getting some federal money.

00:53:42 [W] And one of that, one of those most recent programs is the solar for all program. And as I'm sure some of you have already been reached out to we're really trying to take 18 Massachusetts approach to

00:53:58 [W] Grant application for this.

00:53:59 [W] We really want to have a lot of input and make sure that everyone who is providing solar, who's working in this space has a say and has and all be on the same team about how

00:54:14 [W] We're asking for this money so we did put out a straw proposal and we're getting comments on that. So if people want to look that up, that would be very helpful.

00:54:25 [W] We're reviewing all those comments right now and in the last over, the last two months, we've been doing a lot of stakeholder Outreach to make sure that we get the feedback necessary to produce the strongest application that we can.

00:54:38 [W] can. You know, we're also taking a hard look at our existing programs.

00:54:43 [W] We recently hired a consultant to help us do that by reviewing the current economics of Solar Development and that should help lead us to looking at our programs in the most cost-effective way we can while still incentivizing.

00:54:59 [W] Solar production but you know, we are cognizant of the challenges that that solar faces.

00:55:08 [W] I think we all know the list is siting and permitting, interconnection, what are the other things on the list?

00:55:15 [W] Workforce?

00:55:17 [W] And so last one I always talk about, oh, I'm great capacity. So, you know, we're we can't just focus on the we need to work on.

00:55:28 [W] These challenges to make sure that we can produce the amount of solar that we need in order to meet our goals.

00:55:34 [W] So, one of the things that we recently have announces a commission on siting, clean energy, siting, and infrastructure and that commission is going to include members from various sectors

00:55:50 [W] And they're going to be making recommendations about potential changes to regulations to statute on how we can have the hard conversations that we need to have about siting.

00:56:02 [W] Sorry my screen is popping up with 5 million things to of a sudden. It's okay. So that commission is going to really bring together this wider wide array of stakeholders to discuss or

00:56:18 [W] Potential reforms and we hope to convene the first meeting soon. And then have those recommendations done by next spring. But, you know, we also cannot talk about Solar without talking about Workforce.

00:56:34 [W] That is one of our greatest challenges but also one of our greatest opportunities, we really have a need for about thirty, eight thousand, new workers, and clean, the clean energy field by 2030,

00:56:49 [W] For solar that means about 130 percent increase in jobs.

00:56:54 [W] So that's a that's a lot. We need more electricians, we need more installers, we might need more trans transmission experts. So all this is really going to be critical to meeting our goals, but the good news is that

00:57:09 [W] Has a great opportunity to make sure that the people who are most deeply impacted by climate change, have an opportunity to be participants in This Clean Energy Future by working in it, and we're working hard,

00:57:24 [W] You get these good-paying family sustaining jobs that will build out our buy-in from communities and get people excited about how they can support and be part of this transition.

00:57:38 [W] Chen also spending a significant amount of time talking to young people and young people really want to make a difference and they want to know how they can make a difference and one of the major ways that they can make a difference,

00:57:52 [W] Friends. And I say this many times that the hero of the clean energy transition is going to be the electrician's.

00:58:00 [W] So if you know of any young people and we really are interested in making a difference, being an electrician is one way, one way to do that and I try to get one of my kids into it but we'll see how successful I am on that

00:58:15 [W] But earlier this summer, we announced a clean energy. Pathway that is a high school program that allows kids to learn about the industry and get started at an earlier age and get people really excited about working in these fields last week, we also announced

00:58:30 [W] 18 million dollar grant program for Workforce Development.

00:58:34 [W] You may have read about in the paper today.

00:58:38 [W] There was an article about some of these programs.

00:58:42 [W] One of them that I'm really excited about is a program called shine, which they did talk about in the paper today.

00:58:48 [W] And the thing that I think is so exciting about their programs is that they bring they do a training cohort and they build solar or clean energy.

00:58:59 [W] Energy in a community.

00:59:01 [W] And then the people are from the people who are learning about the about the the training for the clean energy Workforce live in the community and it brings like the whole Community together and sort of planning this program.

00:59:16 [W] And then, once the clean energy is up and running, the community will get the benefits of having that clean energy resource and hopefully cheaper energy as well. So, really exciting programs like that. You know, we we need

00:59:31 [W] 1,500 more electricians by 2030.

00:59:35 [W] So training and Workforce is going to be going to be crucial.

00:59:37 [W] So I see wayne Dwayne coming on board so I will just wrap up here to say that all of our all this work really is done with two principles in mind.

00:59:47 [W] The first thing, partnership and collaboration so we want to hear from you.

00:59:55 [W] you. We want to work with you. We're also here to help. We have a lot of

01:00:01 [W] hurts on our on our staffs and we can we can help cities and towns solve problems.

01:00:07 [W] And we're not going to do any of this clean energy transition, if unless we do it together so I think I think we all recognize that and also our second principle is environmental justice and equity and

01:00:22 [W] From all of our of our work are citing work are clean homes work.

01:00:28 [W] You know, we need to not repeat the past.

01:00:32 [W] So our goal is to make sure that we bring the benefits of the clean energy transition to everyone and that some people are not disproportionately disproportionately impacted by some of the negative impacts

01:00:48 [W] Well, so a lot of exciting things happening and the Haley Driscoll Administration looking forward to working with you all.

01:00:54 [W] you'll hear from several members of our team today.

01:00:58 [W] And they are, they are all terrific and will provide a significant amount of information for you.

01:01:03 [W] That's a little more detailed.

01:01:05 [W] So thank you very much.

01:01:08 [W] Thank you, secretary temper. This was wonderful remarks. And really, as you say, we're fortunate to live in Massachusetts and we're fortunate to have the leadership team that we have in place.

01:01:20 [W] So thank you for all your work and your teams, and to both climate Chief Hoffer and secretary. Deborah, thank you for those opening remarks.

01:01:32 [W] Let me move on to the next agenda item, which is really to hear about the federal context.

01:01:38 [W] And perspective.

01:01:39 [W] we are very fortunate to be joined by colleagues in at the federal level, from the Department of energy and EPA, and we're a little bit behind schedule.

01:01:53 [W] So I'm going to just give brief introductions and the three, I think participants from D OE and EPA will be working together on this presentation and

01:02:08 [W] Nicole Steele is I think leading off for or head of the team she Nicole Steele is a senior advisor for the greenhouse gas reduction fund for the US Department.

01:02:20 [W] Sorry the US Environmental Protection Agency and Equitable access lead for the Solar Energy Technologies office at US Department of energy.

01:02:32 [W] She will be joined by one book, Tara, who's a, strategic analyst for the US Department of

01:02:38 [W] Of energy, in the solar energy technology office along with an eval user. Who's the solder Community engagement coordinator.

01:02:48 [W] Also for usdoe in the solar energy technology office their full bios are on our attendee Hub.

01:02:56 [W] Hub. And again, thank you so much for joining us from from the federal government to give us some insights and thoughts on well, work facing and how that relates to the

01:03:07 [W] The what you see nationally as well, so over to you Nicole or anybody else on that team. Thanks, thanks doing. Really appreciate that.

01:03:20 [W] ntroduction.

01:03:21 [W] I am going to be quick.

01:03:22 [W] I'm going to be mostly giving some very high-level contacts and handing it over to my colleagues and abalzer and Juan pateros, and it's good.

01:03:31 [W] Thanks.

01:03:33 [W] Um so you know from the the federal perspective, we and the current administration's climate priorities are really threefold and I think a number of the speaker's really do of into this

01:03:48 [W] Spend a lot of time, but the reason I really wanted to mention it is because it does provide a good framework on our decision-making process and how we

are working with stakeholders.

01:04:03 [W] and and really what are you know sir opportunities out in the space are today. And so really they starting with our 2035 goal of transitioning, our full electricity sector into carpentry

01:04:18 [W] Carbon pollution, free electricity and then really in the next big goal is 2050 by through transition transitioning, the entire economy.

01:04:28 [W] So 2035 being that first, electrification goal, and 2050, being a full economy goal, and then the thing that I think is really important to, you know,

sort of add as a lens. To all of that work is the justice 40 initiative, which
01:04:43 [W] Ensuring that we're delivering minimum of 40% of benefits from all of those Federal Investments, whether they be direct funding opportunities for tax credits, but that there is there's benefits are going directly to

01:04:59 [W] Low-income in disadvantaged communities.

01:05:02 [W] So go to the next slide and really again you know this is sort of sort of a three-pronged approach again ensuring that our priorities are doing these three things.

01:05:15 [W] And so the work that we're doing at both the department of energy and EPA is is this sort of the threefold? And I do know that it's a few people already spoke to this but you know, obviously, we're addressing the climate crisis but we need

01:05:30 [W] Make sure that we're ensuring Equity as as as we do that.

01:05:34 [W] And really, that's what my team at Dealey is leading on.

01:05:40 [W] You may have heard about meaningful benefits through solar deployment through the national Community, solar partnership.

01:05:46 [W] And this is to make sure that not only do folks have access to this clean energy transition, whether that be the to the technology itself, or two jobs, and to be part of this transition. But really making sure that folks

01:05:59 [W] folks can build well else, they can see savings, they can have integrate resiliency into their, their communities, and their daily lives as well as, you know, sort of that major wealth building peace

01:06:14 [W] And so, you know, we start with access, but there's a lot of benefits that clean energy can provide and we want to make sure that everyone has access to those benefits. And then last but not least. And I know we just talked about this but we're not going to be able to meet the goals of

01:06:30 [W] of this Administration through and this clean energy transition unless we're creating high-quality jobs and really making sure that we have a chance for folks to join a union if that's if that's of their interest and

01:06:45 [W] Making sure that we're creating a movement that people want to be part of in really inspiring. Those young folks to join the clean energy transition and really understand that they can be part of

01:07:01 [W] They can really see themselves in this transition and feel fully supported and trained and mentored as they join as they join the industry.

01:07:11 [W] So let's go to the next slide.

01:07:12 [W] I'm going to talk a little bit about what the Solar Energy Technologies office does.

01:07:17 [W] Oops, there we go.

01:07:19 [W] Perfect. And so really, I lead a team at D. OE on top of my other job at EPA which, which was to support that

01:07:29 [W] The greenhouse gas reduction fund and the and designed the the solar for all program. Specifically and so really excited to hear that you guys are

interested in that but you know, senses are open competitions. I'm not really going to be able to speak to

01:07:44 [W] There is those competitions today, but I'll focus more on, you know, what we're doing in the Solar office, and that we really want to make sure that we're accelerating the advancement and deployment of solar technology really with that Equitable

01:08:00 [W] Latins again, decarbonizing no later than 20 50. And we do it through sort of three prongs around, both Technology Innovation and making sure that, that technology is Affordable and accessible.

01:08:13 [W] But then also enabling that deployment of you know is solar reliable.

01:08:19 [W] Can it support? Resiliency? Can it support the security of the grid? And then, last but not least, really having sort of the lens around job growth, but not for not only

01:08:29 [W] From the installation side but also from the manufacturing side and all the other jobs that go into solar deployment again.

01:08:36 [W] I leave the workforce and Equitable access team and the solar office, which is part of the national community. So our partnership and as going to talk a little bit about that, but we also want to sort of dive into some of our other programming around, citing, an interconnection, and

01:08:52 [W] Permitting. And we got a lot of things going on, so that our office right now and so really excited to dive into the details.

01:08:59 [W] So with that, I really appreciate the invite for us to talk to you about, you know, some of our offerings and how you can get involved.

01:09:06 [W] And I'm going to hand it over to one.

01:09:09 [W] thanks so much.

01:09:11 [W] Thanks Nicole. And thank you everyone, for the invitation to come and share a little bit more with you. And like Nicole said, I'm gonna hopefully dive in a little deeper, but we are limited time. So I can't pack deep into every one of our programs and we certainly got something going on in all of

01:09:26 [W] Pieces that have already been touched on in terms of challenges and obstacles that we're still facing in this transition.

01:09:33 [W] But I'm hoping I'm going to be able to highlight some of the more important ones.

01:09:36 [W] Some of the ones that are really relevant right now.

01:09:37 [W] And then just want to, you know, communicate that were here were available.

01:09:42 [W] And if you need more information on anything, we'd be happy to provide those connections after afterwards.

01:09:48 [W] So this is a question that we've been asking ourselves.

01:09:51 [W] you know, Nicole did a great job teeing up what the goals are. And as the as the d800e is a

01:09:56 [W] A whole, but more specifically for us as the solar office, we've been asking, you know, can we reach those goals?

01:10:01 [W] And if so how, how do we do with it or more specifically? What is solar energies role in reaching these goals next slide? And one of the main ways that we tackle, this question is by conducting a really in-depth Soros.

01:10:17 [W] Study titled, the solar future study, this was published now two years ago, believe it or not, but it really has mapped out for us as the solar off-piste.

01:10:28 [W] Some of those key challenges that have already been talked extensively about today that we're still facing but also just you know frankly laid out a map

of how we get there. How it is that we're actually going to get there? This slide conveys some of the major takeaways I don't have time

01:10:43 [W] Go through each, but I'll just highlight some of these top numbers.

01:10:46 [W] We need to install an average of 30, gigawatts of solar capacity per year between 20 21 and 20 25. So we need to average 30 gigawatts per year during that time frame and then that needs to double between 2025 and 23rd.

01:11:00 [W] So it's a lot of solar we're talking about and and these numbers are pretty large, they're intended to be inclusive of both large scale you know large-scale utility scale facilities, it also distributed and rooftop community.

01:11:13 [W] Commercial solar all types and and and and what's great about the solar future study and I really encourage everyone to go dig up the the report itself, it can be a little dense. It certainly thorough, but it's also got lots of great figures. That really make it easy for you to be able to talk

01:11:28 [W] About some of the stuff and map out some of these figures that can some of these numbers that can be somewhat overwhelming.

01:11:33 [W] I'll point to, for example, the map in the bottom, right.

01:11:36 [W] that really shows through the years, twenty twenty twenty thirty five twenty fifty where that capacity is likely to go and you can see some of the trends if it's certainly distributed across the country, but we can start to predict where some of the trends in which direction we're going.

01:11:51 [W] The report continues to touch on many many challenges associated with the grid, with resiliency with policy changes changes with land, use and much more than we can cover today.

01:12:03 [W] But again, encourage folks to to check it out next slide. So, as you as you already know, folks on this call already know, and it's also been mentioned already solar. Has already been growing tremendously, right?

01:12:17 [W] 24 fold in the last 10 years, just in terms of capacity and

01:12:20 [W] And that means that there's been a lot more businesses coming about certainly with Ira even more.

01:12:27 [W] So the costs of solar PV of photovoltaics has decreased tremendously, fifty-three fifty-three percent in ten years and that's really leading to a lot of these opportunities. But as as we're here to talk about it is

01:12:43 [W] Gaston, there are many challenges that are going to come with these. Whether it's citing whether it's interconnection, whether it's simply how we do this equitably, there's a lot on the plate that we need to tackle and I'm just going to talk a little bit more specifically today.

01:12:58 [W] A about siting in particular but like I said there's a lot more going on at Seto and throughout the doughy next slide.

01:13:06 [W] So one of this is another one of those great figures that comes from the solar future study which really just intends to demonstrate the land use.

01:13:16 [W] Considerations around solar these squares are intended to be at scale and compare different land.

01:13:23 [W] Use covers in the contiguous 48.

01:13:26 [W] And you can see that far to the right is a little blue solar panel and that's the estimate. Estimated amount of land needed by, 2050 for large-scale utility-scale, solar facilities on the ground, and it represents only

01:13:41 [W] About 0.5 percent of the u.s.

01:13:44 [W] surface area and when you compare that to the great lakes or, or even to agriculture, which is 43%, it doesn't sound like a lot, it really doesn't but it's really easy for us to say this at this level but the reality is is when it

comes to a rural

01:13:59 [W] In a place like, Western Massachusetts, you know, a 10,000-acre facility doesn't feel small at all and it can be quite a big impact and a lot of different considerations that need to need to come into place before

01:14:14 [W] So you can be built and so that's what we talk. When we talk about, citing those processes the identification of the site design of it, the implications of the the construction, whether they're positive impacts of the community, whether their adverse impacts to the environment or to

01:14:29 [W] Medias. Well, that's all what we use to Encompass, a concept of citing next slide.

01:14:36 [W] And so, as we've engaged with stakeholders across the country and educated ourselves on citing one, very clear message has come across to us, which is a challenging one for the federal government. And that's that sighting is hyperlocal, right? The

01:14:52 [W] Decisions are based on the context of the individual facility, the individual Community, the policies in that state, or County or municipality. And so

01:15:07 [W] There isn't a one size fits all solution to how to do sighting, right? We know that typically the siting process is led by developers write. This Private Industry competing with each other looking for places to to to find sites.

01:15:22 [W] They're looking for places with you know, relatively cheap interconnection costs or maybe good prices on the land where there's there's capacity on the grid itself and then they propose it to this, to the to, to the community or to the the state and local governments.

01:15:37 [W] But what exhaust will become clear is that Ste local authorities.

01:15:40 [W] Play an important role in evaluating those proposed facilities but also in planning proactively and looking into the future about and thinking what do we want out of out of this, you know, renewable energy transitions, we want to host any of these facilities

01:15:55 [W] These but what's been happening is that the capacity or the technical expertise, the time. It's not always there at the state and local level for this proactive planning to take place.

01:16:07 [W] And so a lot of what's been happening is reactionary right reaction to a site that gets proposed and one of the main ways we're trying to tackle this at Cee do and in collaboration with the wind offices.

01:16:19 [W] offices. Well is through next animation in the renewable energy citing through technical engagement and

01:16:25 [W] Planning program or are step for, for short, for yet another acronym. We love acronyms as you all know,

01:16:31 [W] The idea here is that we are going to tackle this capacity issue and we're going to do it by funding state level.

01:16:38 [W] Collaboratives that can expand capacity on citing and planning for renewable energy again at the state level.

01:16:46 [W] And then, they those entities that receive the funding that are working at the state level can then go down to the local communities and support them.

01:16:54 [W] Because, to be completely honest, we just we don't have enough money to go to every single community and help them plan and and the

01:17:01 [W] Reality is that we're not always the most trusted messenger. There are a lot of folks like, you know, the folks organizing this called clean energy extension would be much much more trusted much better conveyors of technical

information for local communities than the federal government would.

01:17:15 [W] Here. And this is a very new program applications are set to open up next week, is that we are going to select somewhere between five to seven state level, collaborative or state based collaborative.

01:17:28 [W] 'S, we're going to provide them with some funding so that they can expand that capacity.

01:17:32 [W] Works also going to augment it with technical assistance and then the resources, they develop the achievements, they have.

01:17:39 [W] have. We're going to disseminate those more broadly and convene more of stakeholders to make sure those practices are improving. So you

01:17:45 [W] Can see how we are incorporating. What we've learned about the hyper local characteristics of citing into this program where we're not saying hey here's a here's a one document that's going to solve all your sighting issues that's just not realistic right

01:18:01 [W] Instead we're hoping to build that capacity at the state level at the local level.

01:18:05 [W] so that sighting and planning can can can improve. I just wanted to touch on an exit animation on another program.

01:18:11 [W] That takes a very similar approach and that's I to X. And this one is aiming to tackle the interconnection interconnection challenge. You know, specifically interconnection and citing their their, you know, completely integrated with one another.

01:18:26 [W] They're they're really hard to tease apart but programmatically we've got a

01:18:30 [W] Graham that's really focused around in connections specifically. This program is doing a lot of stakeholder engagement, doing data, collection, and Analysis, and disseminating those data so that we can create innovative solutions to these inner condition

01:18:46 [W] Just it's doing a lot of strategic planning and roadmap development so that we can actually develop Pathways for Solutions around the interconnection challenges.

01:18:55 [W] And then finally, it's providing technical assistance, to, to the folks that need it. Most next slide.

01:19:02 [W] So I'll I want to try to be quick here because I know we're a little behind on time, but I just wanted to spend yet another couple slides on citing specifically because I really want to highlight. As I've highlighted already that it's hyperlocal it's also multidisciplinary. Right?

01:19:17 [W] We talked about citing issues.

01:19:19 [W] You know, we're talking about the social science exciting and understanding what communities need, what they're gaining. What their what their priorities are. We also talked about ecology and impacts to Wildlife or impacts to to ecosystem services.

01:19:34 [W] At the same time there's this amazing opportunity for dual use or what we generally classify as Innovative citing opportunities. And that's you know, Agra voltaics Agriculture and photovoltaics in the same land and and getting dual use of

01:19:49 [W] Of both the land and the solder that's coming down or its developing on brownfields, mine lands as well as using water or floating PV. So we are tackling these, these opportunities

01:20:04 [W] Is that are presented under these few different categories.

01:20:07 [W] Individually, we're integrating them as well.

01:20:10 [W] But I just wanted to communicate to kind of introduce sighting as as we all know a very, very challenging topic and that's because it is most so multidisciplinary. And because it touches on so many different stakeholders and so many different stakeholders are involved

01:20:26 [W] Next slide.

01:20:27 [W] I also just wanted to highlight that there are three projects that are already funded by YC do by some of our programs in and at are actively engaged.

01:20:41 [W] and and conducting work in Western Massachusetts, the one on the left is already wrapped up and was led by UMass.

01:20:48 [W] UMass clean clean energy extension. The it's it was focused on community Forum proactive so exciting, lots of great resources that

01:20:57 [W] Extension is already using is already available on the website, some of that was see, doe funded. So that's one of the programs that I think really has informed our step in terms of what we would like to see in other in other parts of the country.

01:21:10 [W] So in many ways just want to highlight that you guys are far ahead of the curve. When it comes to comparing to other places in the country, the two on the right, one is focused on Wildlife also led by University of Massachusetts at

01:21:25 [W] Hearst is the first assessment of how birds are reproducing on solar facilities, believe it or not.

01:21:32 [W] and so quantifying and estimating some of these benefits that these facilities can provide to natural habitats. And then using that to develop resources that actually improve citing practices and wildlife management. And then the one on the right is focused on dual-use and

01:21:47 [W] Takes conducting.

01:21:48 [W] actual you know empirical testing of these different agricultural practices on solar facilities or on dual-use facilities and then developing management guidelines.

01:21:58 [W] Next slide.

01:21:59 [W] So again, just congrats in saying UMass is already very much involved in a lot of the research that we are conducting and then we've also heard already in the remarks earlier, the challenges that are going to come our way when it comes to

01:22:14 [W] waist and what we're going to do with all these PV panels at the end of life, what I would like to highlight is just that as much of this, as a challenge, it's there's also a lot of opportunity here to recycle reuse and

01:22:29 [W] Actor for future for future use.

01:22:32 [W] There's a lot of stakeholders involved that can actually begin thinking about this now.

01:22:39 [W] And so I'm glad this is a topic of interest for all of you. That's already been brought up, but the main thing, I'll highlight next slide. Anna is just that we have a current funding opportunity. Open that's focused on this exact topic.

01:22:53 [W] This is led by our PV team and its really focused around the idea of materials operation. And

01:22:59 [W] Cycling of photovoltaics, it's called the more PV, foa letters of intent, or do tomorrow. So there's there's not much time left open, but the goal is that the research, the, the support that we're going to be providing through these programs

01:23:14 [W] That are really intended to be collaborative across Industries are

going to start creating some of the solutions that we need to tackle the challenge of PV waste and the opportunities around recycling it. So with that, I like I said,

01:23:29 [W] There's not enough time to go into H one of our topics, but I'll pass it over to Anna.

01:23:36 [W] Thank you so much, one.

01:23:38 [W] I know you're over time to be fairly sure. There would be super and and thank you that you've got doing, so will move quickly here. So just wanted to touch on two other main themes here. So we've heard about this so I'll move pretty quickly here, but when we think about those

01:23:53 [W] National solar deployment goals.

01:23:56 [W] On a big question is of course but we have the work force to be able to install all of that. So in at a national level the workforce would need to grow by quite a bit.

01:24:06 [W] So about a million workers by 2035 to be able to do to meet those goals. And we know that even today there are challenges in finding the adequate labor to install solar. So what is the Solar Energy Technologies office doing

01:24:21 [W] On this front.

01:24:22 [W] we're certainly working to help prepare for the workforce needs, but a real priority of ours. Of course is ensuring that those jobs are accessible and that they promote a pathway to a career that has high quality

01:24:37 [W] Eddie jobs and opportunities, for family, sustaining wages, potentially, through union membership.

01:24:44 [W] So we have a funding opportunity.

01:24:47 [W] Fellow stands for a funding opportunity.

01:24:48 [W] Announcement, apologies for the acronyms all over the place, but we had a funding opportunity to be announced last summer.

01:24:56 [W] That is really focused on.

01:24:57 [W] do we create training programs that are really industry aligned? So they're responding to the actual needs of the industry. What are we seeing as the the jobs in the skills that are needed?

01:25:06 [W] Needed for the future but also work our Centrex. I thinking about workers as a whole person, not a someone just there for the training of information, but how can we support them in career development through mentorship?

01:25:18 [W] Providing wraparound services? So that they're really able to participate in training programs and then making sure that all of these these models that we're creating our sustainable and scalable so that we can learn from them.

01:25:30 [W] So just a summer we announced 12 Awards through this funding opportunity. I believe I might

01:25:36 [W] Have a slide on the next page, has a little bit more information about where those are.

01:25:40 [W] But we're really excited over the next couple of years to be able to learn from these projects and start to identify training programs, that again are replicable and scalable so that we can start to build that capacity as long as talking about to really build up an equitable solar

01:25:55 [W] Force in an accessible solar Workforce.

01:25:57 [W] So very quickly.

01:25:58 [W] These are some of those projects I believe everyone should have access to the slides after this.

01:26:02 [W] So encourage you to take a closer look at some of the great projects that we've awarded.

01:26:05 [W] And then the last topic will cover, really, briefly here is about, will everyone be able to share in the benefits of deploying? All of this solar? What we know? Now, is that nearly half of all households and businesses are not able to install

01:26:20 [W] Solar directly on their roof and this is because of a few factors. So maybe there's not enough sunlight that hits their roof.

01:26:27 [W] there could be shading a big tree, something like that, there may just be insufficient roof space.

01:26:30 [W] So thinking about tall apartment buildings, not a lot of demand and not a lot of space on the roof but solar panels, I'm or it could be because they don't own their roof.

01:26:38 [W] So, this number this, 50% is not even taking into account, the financial ability to put solar on your own roof. So of course, when we include that, we expect that that number will, it would just grow.

01:26:51 [W] So this is where an opportunity that was mentioned early on in the presentations today, for Community, solar becomes a really great way of for lots of different households.

01:27:00 [W] Regardless of their tendency or their ability to put PV on the roof to access the benefits of solar.

01:27:06 [W] So of course we want them to participate in the Solar transition.

01:27:10 [W] But how were they benefiting from our?

01:27:12 [W] How are we ensuring that like, that justice 40 priority? There's a really flowing to all households. So Community, solar is a really great opportunity.

01:27:20 [W] Tea or a great method of ensuring that those benefits can be delivered to all households and businesses.

01:27:25 [W] So what it can do, and Nicole mentioned this earlier is, again provide access to that energy provider, reduced electricity bill, in most cases, but it can also provide additional benefits like Community wealth building.

01:27:41 [W] Resilience, Workforce opportunities Etc.

01:27:44 [W] And so the Solar Energy Technologies office is really working to support the community solar ecosystem through a program called the national Community, solar partnership, and the partnership does three main things. I first portion of it is around Data

01:27:59 [W] Acting.

01:28:00 [W] So really understanding what the community solar Market. Looks like how many projects are being developed?

01:28:04 [W] what characteristics do, they include and we're and sharing that information publicly. So you can right now go check out our sharing the Sun data set. It includes all the projects across the United States that had been deployed as of the end of 2020 to of

01:28:19 [W] These solar where they are, how big? They are a really great data. Set. Another big piece of our programming is technical assistance.

01:28:26 [W] So we can provide direct no-cost, technical assistance to anyone in our partnership and that is responsive to a wide variety of needs. All the way from from citing to policy creation, or analyses to community

01:28:42 [W] Agents are really running the full gamut of community solar programming, and then the last piece is collaboration.

01:28:47 [W] So we have an online platform that right now has about 1600 members on it across the United States and its territories, and it really allows for a rapid exchange information. Ideas problem solving. So that no one feels like they're doing this work in a silo.

01:29:03 [W] I'm afraid mention today is where can be challenging their, a lot of barriers to overcome, but building strong networks and strong relationships is a really fundamental part of addressing these challenges.

01:29:12 [W] This is my last slide.

01:29:14 [W] I do want to acknowledge that. There are a lot of opportunities that became available because of the inflation reduction act for solar, don't have time to get into them all today.

01:29:25 [W] I did want to note, we're having a webinar entirely dedicated to sort of the solar portion of the inflation reduction act in the

01:29:32 [W] unity's for Solar Development.

01:29:34 [W] This Thursday at 2:30 p.m.

01:29:36 [W] if you're available great to attend live and submit questions, if not the recording will be available. And I think that will be a great resource for folks that want to explore more of the inflation reduction act and with that I will pass it back to you doing.

01:29:51 [W] Fantastic.

01:29:52 [W] And thank you so much to you Nicole.

01:29:56 [W] Wanda and for that tremendous update and hard work at the federal level. It's really remarkable and good to know of the programs available. The Partnerships we've had at the clean energy extension with

01:30:11 [W] Do particularly and and and the breadth and depth of opportunities that are really coming to be under the and happen under the under the particular under the Biden

01:30:26 [W] Shannon moving forward.

01:30:27 [W] So thank you so much for informing us and attendees on all these activities at the federal level. And that we are not alone in Massachusetts.

01:30:37 [W] We have Partners at the federal level as well.

01:30:39 [W] So thank you very much for that.

01:30:42 [W] We are obviously a bit behind in schedule.

01:30:46 [W] I will be turning directly to our undersecretary and we will give full time

01:30:56 [W] Under secretary to your presentation and eat into the Q&A and the break.

01:31:03 [W] So, let me introduce eea, undersecretary for decarbonization and resilience, Katherine antos. And Katherine is the undersecretary and she leads the effort to reduce

01:31:18 [W] It's gas emissions and Achieve our Commonwealth commitment to Net Zero by 2050 and to ensure meaningful involvement and access to benefits of the clean energy extent of the clean energy transition for environmental justice communities.

01:31:33 [W] Katherine previously served as Deputy executive director of planning and sustainability at the metropolitan area planning Council, the regional planning agency in and around the Boston area.

01:31:45 [W] So undersecretary antos.

01:31:48 [W] Thank you so much for joining us and the floor is yours.

01:31:52 [W] Thank you so much, Dwayne.

01:31:54 [W] And can you see my slides? Okay.

01:31:57 [W] Yes, looks great.

01:31:58 [W] Thank you.

01:31:59 [W] Excellent.

01:32:00 [W] Well, I had the chance to be in Western Massachusetts twice in this past week in two different areas. And in both times as I passed through Worcester County, the Connecticut, River Valley and into the Berkshires.

01:32:12 [W] I was struck by just how much solar I saw particularly ground Mount, and I swear it wasn't just because I was looking for it in anticipation of today's forum.

01:32:20 [W] Clean energy is the linchpin of Massachusetts greenhouse gas emissions, reductions goals and solar generation.

01:32:27 [W] Ocean plays a critical role in that in my role as the undersecretary of decarbonization and resilience.

01:32:33 [W] I focus on how we're going to meet our Net Zero goals by 2050 and cut greenhouse gas emissions in half by 2030 and also how are we going to adapt to a climate that is already changing? Chief Halford talked. A lot about the changes we've just seen

01:32:48 [W] Here in our state, in just the past, couple months, including more intense storms, and heat waves and other impacts.

01:32:56 [W] So the capacity and resilience of our energy infrastructure is a key aspect of both goals, particularly climate mitigation and I want to thank Dwayne and the team at UMass clean energy extension, Senator comma forward and representative Domb. The city legislature

01:33:11 [W] As in the full soul, solar Forum planning committee for organizing this series of Western, Mass solar forums, and also to this great line up of presenters. And all of you participants who have joined today.

01:33:23 [W] I'm going to share with you the role of both solar and natural and working lands in our Statewide clean energy, and climate plans. And the trade-offs that we have to consider as we work to equitably and affordably meet these commitments.

01:33:43 [W] I'm just taking a moment to advance my slides.

01:33:52 [W] All right, sorry about that.

01:33:54 [W] So Massachusetts is required by law to follow a set of emissions.

01:33:59 [W] Reductions out to 2050 and this chart which has Emissions on the y-axis and the years on the X axis charts that path with different colors.

01:34:09 [W] denoting the different sectors of our economy. In Massachusetts, we are required by law to achieve, at least 50% greenhouse gas. Emissions, reductions in 2030 relative to 1990 Baseline.

01:34:22 [W] Seventy-five percent reductions in 2040 and achieved net zero emissions in 2050 with at least 85% of this goal coming from emissions. Reductions.

01:34:33 [W] You can see three darker shades of blue which denote our buildings transportation and electric sectors and account for the bulk of our missions to date. And all three of these are going to need to see steep declines in their emissions profiles over the coming decades.

01:34:49 [W] So electricity is the second darkest shade of blue in this chart and it's achieved many reduction. Since the early 2000s, as fossil fuel power, plants have ceased operation in Massachusetts and we've brought on renewable energy.

01:35:03 [W] energy. However, we still expect to see further decreases from 2025 to 2050. I also want to point out here on this chart, the sliver of green below zero and that denotes negative emissions or what we call sequestration that

01:35:18 [W] We expect from our natural and working lands, so natural and working lands, represent Forest, Farmland wetlands, and other natural areas. And ads, you can see natural working lands.

01:35:29 [W] Play a central role in getting us to NetZero particularly through additional sequestration between 2035 in 2050.

01:35:39 [W] So how are we going to achieve that drastic chart?

01:35:44 [W] reductions?

01:35:44 [W] I showed you previously our clean energy and climate plans, both for 2030 and for 2050 map out the various policies and programs we are putting in place to keep us on track for these emissions limits, but they all boil down to four main pillars.

01:35:59 [W] Yes, the first is transitioning.

01:36:01 [W] our buildings, our vehicles, our industrial, and other users to get their heat and energy from electricity rather than fossil fuels.

01:36:08 [W] The second is reducing the amount of energy, those users need through Energy Efficiency like insulating, our buildings and also optimization and demand management, like smart. Charging, the third is ensuring that our remaining

01:36:24 [W] Electricity demand is meant by clean renewable energy and this is where solar comes in.

01:36:29 [W] And finally, the fourth pillar is storing and sequestering carbon largely through natural and working lands to offset the remaining emissions.

01:36:42 [W] So, in terms of what does this actually look like in real-world outcomes?

01:36:46 [W] So according to our 2050 Cee Cee PV what this is going to look like and Cee, Cee. PV being shorthand for the clean energy and climate plan. What this is going to look like is that in 2050 to the vast majority of our light medium and heavy duty

01:37:01 [W] Vehicles are going to be electric.

01:37:03 [W] The vast majority of our buildings will be heated by heat pumps rather than gas or oil because of this electrification.

01:37:09 [W] Our electric glued will deep will increase two and a half old while our energy comes from clean sources. And we're going to need to permanently protect 40% of our natural and working lands and Waters so that they can store and sequester carbon.

01:37:24 [W] So this transition is huge and as secretary Tepper mentioned, it's going to bring great economic opportunities and health benefits to the Commonwealth.

01:37:36 [W] So we're here to talk about renewable generation. So let's take a closer look at the electric sector and its unique challenges and opportunities. This slide shows in more detail how the electrification of our buildings and our cars are putting us on a path to see a two and a half fold

01:37:52 [W] Is an electric demand out to 2050.

01:37:55 [W] We need to do this by bringing on clean energy sources and also building the interconnection necessary to bring this clean generation to the people and the businesses that need it. We also need to think carefully about how we are taking these actions

01:38:10 [W] Sharing that are most disadvantaged communities are not over guarded disproportionately by this energy transition.

01:38:16 [W] So affordability, reliability? And Equitable, citing practices are key priorities in advancing this clean energy transition

01:38:27 [W] We have a handful of policies that are going to help us get there.

01:38:31 [W] The first is procuring clean energy of scale last week with our utilities re-release, the largest RFP for offshore, wind to date. That would cover a quarter Massachusetts. Current demand, the second is reforming transmission planning to accommodate

01:38:46 [W] Nobles. The third is modernizing the distribution system to manage flexible load like that generated by solar.

01:38:54 [W] We also need to be supporting renewable energy development, particularly for solar and offshore Wind Through analysis through planning, through policy, through our state resources and also through securing Federal resources.

01:39:07 [W] In all of this, we need to be centering environmental justice in energy, infrastructure siting and access. So we're not repeating historic harms, but rather ensuring that we prioritize environmental justice populations in experiencing the benefits

01:39:22 [W] It's at the clean energy transition and finally, we need to be coordinating joint planning between our Electric and Gas Utilities.

01:39:31 [W] So the he'll adjust, the Administration has created new, senior level positions to lead, and secure resources for this work.

01:39:38 [W] Some of the secretary, it's a mentioned and some of these individuals you've already heard from today, first being Melissa, Hoffer, the nation's first cabinet level climate, Chief and also her team within the climate office, and then within the

01:39:53 [W] Environmental Affairs.

01:39:54 [W] We now have a deputy secretary and assistant Secretary of federal and Regional energy Affairs to build coalitions of states, to accelerate and affordable reliable, and Equitable transition to clean energy, future my position, which is a

01:40:10 [W] Undersecretary roll bringing together decarbonization and resilience.

01:40:14 [W] It's helping us to take a holistic approach that considers adaptation and mitigation needs together.

01:40:20 [W] While I also work closely with our under secretary for energy and then a secretary temper mentioned.

01:40:26 [W] We also now have for the first time an undersecretary of environmental justice who is working to ensure that environmental justice and Equity are embedded in all that we do. And then looking at other Secretariat's,

01:40:39 [W] In the executive office of administration and finance, there is now director of federal funds and infrastructure to help us secure the historic resources that are available for this work under the inflation reduction act in the bipartisan infrastructure law.

01:40:54 [W] So we know that interconnection delays our challenge here in Massachusetts and we're prioritizing transmission and distribution planning to ease. These bottlenecks for communities we've launched a commission on clean energy, infrastructure, siting and

01:41:10 [W] Going to bring together stakeholders to remove barriers for responsible clean, energy, infrastructure, development and engage communities to ensure an equitable clean energy transition.

01:41:22 [W] So here's what this policy.

01:41:24 [W] Sweet starts to look like, in terms of the numbers.

01:41:27 [W] First, I want to talk about capacity and capacity refers to the maximum amount of electricity that can be produced at any one time.

01:41:34 [W] So this slide is showing that are modeled electric capacity, every

five years up to 2050 broken down by solar onshore and offshore wind storage gas oil and other the orange and blue bars which represent the solar and offshore wind.

01:41:50 [W] They really jump out because as our electric load throws.

01:41:54 [W] We need that load to be served by Renewables so that means that our modelling suggests that, we're going to need a six to ten, full build-out of solar capacity between 2025 in 2050.

01:42:06 [W] And so what that means in terms of what we're doing now, we're going to need to be installing solar at about three times or greater the rate than we are today in order to meet these goals.

01:42:17 [W] Next, I want to talk about generation. So while capacity is the amount of electricity that can be generated over a period that can be generated at any one time generation is, the amount of electricity that is actually generated over

01:42:33 [W] Period of time. And this slide shows, the projected change in generation over time. Again showing a significant increase in solar generation as well as offshore wind generation.

01:42:46 [W] So now I want to talk a bit about how we are working to meet our electric sector targets but that's not only about building and connecting more clean generation.

01:42:57 [W] It's also about doing so in a way that balances the trade-offs with other land uses. So as I mentioned earlier, as we Electrify our buildings and transportation, we're pursuing strategy. So it's not to overburden the grid with our natural

01:43:12 [W] Clams. Which again refers to all our forests. Our Wetlands, our cropland, grassland and developed open space. They have the ability to absorb carbon dioxide from the atmosphere.

01:43:24 [W] Making them a key resource in offsetting residual emissions from other sectors in Massachusetts are natural and working lands.

01:43:34 [W] Currently sequester the equivalent of about 10% of Statewide Emissions on a net basis.

01:43:41 [W] So that said the ways that we use our land have significant implications for how well our land can store carbon. So in Massachusetts, we have a four-part approach in terms of looking at our natural and working lands strategies.

01:43:55 [W] The first is protecting our natural and working lands from degradation and conversion so that they don't release carbon that is stored and they can continue to sequester.

01:44:04 [W] So by 2030, we want 30% of our natural, working lands to be protected and we want that percentage to increase.

01:44:10 [W] 240 percent by 2050.

01:44:14 [W] Second, we want to manage our natural and working lands to reduce the emissions from farming and also sustainably sequester sequester carbon across all categories of natural and working lands third, we want to be restoring our natural and working lands to reduce greenhouse gas emissions.

01:44:29 [W] Hands and recover lost.

01:44:31 [W] carbon storage capacity.

01:44:33 [W] This is can also enhance other ecosystem services, like habitat water, quality, biodiversity, and climate resilience, including reducing vulnerability to flood drought and heat.

01:44:45 [W] And finally, we want to be utilizing our natural working lands products to extend carbon storage and support natural. Working Land Based economies, for example, the use of wood as a building material and minimizing would

Ways by turning it into more.

01:44:59 [W] Durable products, particularly if those products can displace more emissions, intensive products, like concrete or Steel.

01:45:10 [W] So this map highlights the trade-offs we face in our energy transition.

01:45:15 [W] On the one hand, we need a lot more energy, particularly solar cited throughout our state, to meet our electric demand in a renewable way. On the other hand, we need to protect the Integrity of our lands, particularly our forest in order to maintain their sequestration ability, not to

01:45:30 [W] Mentioned their resilience, in their health benefits. So this challenge can be seen visually to here showing the major land, classifications across our state, and the task before us lies in maintaining.

01:45:41 [W] And even growing the Green Space, which denotes Source land, while also building significant capacity generation and interconnection at the state level, we're focused on solutions that try to tackle both prioritizing solar installation on

01:45:56 [W] Our plan where vegetation and soils have been removed or disturbed such as rooftop, solar or solar canopies and second improving. The design of dual use solar installations on crop land or pasture to carefully

01:46:11 [W] Bounce, electricity food, production carbon storage on qualified farm lands.

01:46:17 [W] So most carbon sequestration and storage occurs on Forest land in urban and Suburban including that land in urban and Suburban for us, the average acre of Massachusetts, Forest holds the equivalent of about 400 tons of

01:46:32 [W] Carbon dioxide in soils, as well as dead and live biomass and deforestation or conversion from forest to non Forest land. Use releases over half of that carbon to the atmosphere and it inhibits

01:46:47 [W] The future sequestration on that land.

01:46:49 [W] Massachusetts has been losing about five to seven thousand acres per year, Forest land, since 1990. Now, if that Solar Development is only responsible for a relatively small amount of that, less than 10%, most of that Forest loss is

01:47:04 [W] Because of other types of development.

01:47:06 [W] However, we do know that during the 2010's a little over half of our new Solar Development was happening in areas that had previously been forested and if this trend were to continue Solar Development could lead to the conversion of

01:47:22 [W] Thousand Acres of forest Land by 2050 or over three percent of Massachusetts for Forest.

01:47:30 [W] So, the state has conducted, or is launching multiple initiatives and analyses to help inform these trade-offs in advance. A strategy that achieves multiple priorities, one is the technical potential of solar study that you have foreign secretary both mentioned and I'm not

01:47:45 [W] Say too much about it since this is going to be the focus of commissioner my honey's talk but I want to connect it at a high level to our clean energy and climate planning commitments given we know.

01:47:54 [W] We need to dramatically increase solar installation while also protecting and restoring our natural and working lands.

01:48:00 [W] So the technical potential of solar study is a geospatial analysis to identify the part Parcels that are most suitable for ground.

01:48:08 [W] Mount canopy and rooftop solar installation, taking to account other priorities, including conservation of natural.

01:48:14 [W] Natural lands, biodiversity and Water Resource protection.

01:48:18 [W] The good news is our technical potential for solar in.

01:48:22 [W] Massachusetts is 15 to 18 times.

01:48:24 [W] What is needed to meet the clean energy and climate plan goals. So we have the capacity to push more solar to rooftops. Parking lots and previously Disturbed areas while protecting our natural working lands,

01:48:38 [W] I also want to highlight some other initiatives that we're taking to address our land conservation and our solar capacity goals together.

01:48:45 [W] One is a force carbon study, which is a landscape level analysis of Statewide Forest carbon through 2100 to help us understand the impacts of different management decisions and ecologically. Disturbances on Forest carbon.

01:49:00 [W] it includes a sensitivity analysis of solar land.

01:49:03 [W] Use intensity and updated Forest carbon sequestration estimates and we expected to be released.

01:49:08 [W] in early 2020 for another is a holistically, a new strategy which is forthcoming Statewide comprehensive plan to help balance, the needs for energy infrastructure, land conservation and also housing Transportation,

01:49:23 [W] Element and resilience in the context of climate change. As mentioned before, Solar Development, only accounts for about 10% of forests in, Massachusetts development is a much bigger Factor so how we can grow smarter can help us

01:49:38 [W] To achieve multiple goals.

01:49:41 [W] Finally, we are launching an aggregate. A commission to develop recommendations around solar projects, on a glands, taking into account land, use water quality soil, health and food production, impacts

01:49:56 [W] Yeah, so I want to thank you for the opportunity to provide this overview of how solar generation and also our natural and working lands management fit within our Statewide climate work.

01:50:05 [W] Climate change is our biggest threat and our greatest opportunity.

01:50:09 [W] secretary Tepper say, and this form is an important Avenue to further understand and address the challenges and Prospects that exist as we equitably and affordably Advance. Our ambitious, Net Zero goals, thank you.

01:50:27 [W] Great. Thank you so much.

01:50:29 [W] Undersecretary antos that was really useful and pertinent information for for ourselves. And for the attendees here, to really dig in to the work and the data with regard to solar

01:50:44 [W] The clean energy and climate plan.

01:50:46 [W] what our future, projections are an expert and and and solder build-out needs along with the other Renewables, and the work that has been so important on the safeguards on the natural and working lands.

01:51:01 [W] Thank you very much for preparing that and offering that to, to, to our attendees, really appreciate that.

01:51:10 [W] I will, we are up on the hour of the break or the time of the break with my staff. Here, we decided to do away with the Q&A.

01:51:23 [W] We would only have time for say one question. Anyhow, I do want to give. We are very importantly, we are reading.

01:51:31 [W] And appreciate the questions are being put forward.

01:51:34 [W] Some of those might be pertinent to the second at the end of the session today.

01:51:39 [W] the short Q&A period but also it may be more important.

01:51:44 [W] We are wanting to see questions and comments from attendees as the

information is provided so that we can better prepare for the other sessions as well as this anticipated. Part two of this

01:51:59 [W] Older conversation.

01:52:01 [W] some time in 2024, I do importantly, as we have a long session today, I do want to give everybody an opportunity for a break.

01:52:09 [W] So we will go to break now, right, on schedule, at 140, we'll take a 10-minute break and we'll start right up promptly at 150 with our two last presentation for today.

01:52:22 [W] More data more information, that's really helpful to us all with regard to the deal. We are

01:52:29 [W] Nicole, potential of solar study that the undersecretary just referenced from the commissioner as well as Kathy dual representing.

01:52:41 [W] See Bane to talk about market trends from the industry's perspective.

01:52:45 [W] So, be back. I'll the zoom will stay on. Don't close the zoom, I would recommend, but just I'll put my video away and when I come back on, we'll move on to the

01:52:59 [W] second, the to the next speaker and that will be promptly at 150. Okay, so thank you, everybody recording stopped.

02:01:24 [W] Welcome back everybody.

02:01:26 [W] We'll get started in a minute or less.

02:01:41 [W] Recording in progress.

02:01:44 [W] Okay, I guess that's my prompt welcome back. Everybody to our to or the second half of our first session. Here we are very excited to bring on to our last two speakers for

02:02:00 [W] For today's session.

02:02:06 [W] Great. So the next speaker is Elizabeth Mahony, our department of energy resources, commissioner commissioner mohandie recently, most recently worked for the Attorney General.

02:02:18 [W] Andrea, Joe Campbell and Maura Healey as the Assistant Attorney General, and Senior policy advisor for energy focusing on utility clean energy procurements solar program development.

02:02:34 [W] Clean energy rate.

02:02:35 [W] Design consumer protection, and legislative engagement before joining the AG's office.

02:02:42 [W] Elizabeth was acting general counsel at deal.

02:02:44 [W] We are where she and I were colleagues and great to see you again here.

02:02:48 [W] Elizabeth, thank you for joining us.

02:02:50 [W] taking the helmet, deal we are. And before that she was a committee counsel to been Downing Senate chair of the joint Community, until Acacia telecommunications and utilities, utilities and energy.

02:03:03 [W] The committee and was very instrumental in their work on the green communities act, so Elizabeth, great to have you.

02:03:12 [W] Thank you for joining us and look forward to hearing from you of the floor, is yours.

02:03:19 [W] Thanks so much. I am going to attempt to share my screen.

02:03:28 [W] And every can you see my slides?

02:03:30 [W] That looks great.

02:03:32 [W] If you can put it in presentation mode, that would be better but it's awesome. I mean, I will try.

02:03:39 [W] There we go.

02:03:40 [W] Okay, perfect.

02:03:43 [W] Thank you.

02:03:43 [W] Yep, great.

02:03:45 [W] Well thank you so much.

02:03:46 [W] Good afternoon, everyone and thank you. Of course, to Dwayne. But also to Senator Comerford rep, Domb and the committee that's put this together. And of course, the UMass clean energy.

02:03:58 [W] Tension.

02:03:59 [W] Recognize that I am the fourth Administration, official to talk with you today. So I can cut out some of my usual stuff that that's been covered by the chief and the secretary and under secretary, but I'm just so

02:04:15 [W] Excited to be with you today.

02:04:17 [W] And so looking forward to learning and worth you and about the work that this program goes through over the next month. Obviously solar is a major component of of the work that

02:04:32 [W] We do at the department of energy resources.

02:04:35 [W] So, so glad to be a part of today.

02:04:36 [W] Today, I'm going to specifically talk to you about something that we announced over the summer.

02:04:41 [W] We are very excited to talk about and launch our technical potential of solar study and story map. Some of you may have heard about it but today we're going to get into some of the details and it really speaks to the work that you all are engaging

02:04:56 [W] In over these these sections and also the current and future social initiative solar initiatives that the Commonwealth needs to be working on.

02:05:06 [W] So I think it's been quite covered by my colleagues. And of course, I'm so grateful to be working with Chief Hoffer secretary Tepper and an undersecretary antos to implement everything. We can at eea to address climate change.

02:05:21 [W] Inch in Governor Haley.

02:05:23 [W] We are so lucky to have a leader who's committed to this work and is pressing us all to do more and faster.

02:05:31 [W] She rightly has the views that the view that the climate crisis is one of our greatest threats but also our greatest opportunity here in Massachusetts and it's certainly what is driving the work we do at doar,

02:05:46 [W] Has been discussed by my colleagues.

02:05:48 [W] Massachusetts has ambitious climate goals including achieving net zero emissions in 2050 and as I noted that the priority for deal we are is implementation.

02:06:00 [W] We want to actually do things and do we are is as I noted as you saw on the first slide charged with developing policies and programs that will help Foster the clean energy transition and with creating a future where residents businesses

02:06:15 [W] and communities can have a clean affordable Equitable and resilient energy Supply and a key part of our strategy to rapidly shifting to a clean energy portfolio over the next 30 Years is the

02:06:30 [W] Objects, we need to build over the next decade.

02:06:33 [W] These are critical to meeting our long-term and short-term in goals.

02:06:38 [W] Think we can. All agree that bold action is needed and that's why our

ambitious climate goals, include doubling our solar targets, you know solar energy as you can see. On this this slide

02:06:53 [W] solar energy is vital to meeting our emissions reductions goals and achieving that zero in 2050 building out the industry and will help actually decarbonize our electricity grid lower energy use and costs

02:07:08 [W] And bolster our economy. It will also require the collaboration of illustrated by this forum between elected officials State policymakers, municipalities Regional planning agencies

02:07:23 [W] Land trust and environmental groups.

02:07:27 [W] and of course, our residents and development Community, undersecretary antos discussed the eea S clean energy and climate plan for twenty twenty-five and twenty Thirty, including the Commonwealth's need for 27 to 34, gigawatts

02:07:42 [W] Solar by 2050 to reach our missions goals which is 10 times. The amount of solar we currently have installed and reaching this level of solar by 2050 will require the state to significantly increase its current annual rate of

02:07:57 [W] Enter installations and so that brings us to how do we do it? What are we looking at?

02:08:04 [W] And how do we protect our natural lands?

02:08:07 [W] How do we predict, how do we do this in a way that actually benefits our environment?

02:08:13 [W] And in a way that's sustainable and and practical?

02:08:17 [W] So over the summer as I noted, we released our technical potential of solar study, it's something that had been underway for over a year.

02:08:25 [W] some of you may have been involved

02:08:27 [W] or contributed your comments to the technical potential of solar study sought to quantify the potential for solar installations in preferred and least preferred locations considering

02:08:42 [W] All land use and economic factors the study. Proved informed steak will inform stakeholders and policymakers about the relative impacts and trade-offs of Solar Development throughout the Commonwealth

02:08:56 [W] And help guide policy development in Massachusetts, and as we work to achieve our solar goal.

02:09:05 [W] So under this study Every Soul, every parcel of land in Massachusetts was analyzed and ranked from most, to least suitable. So every single parcel. It's a lot of work and well worth it.

02:09:18 [W] do you? We are one to make sure that we examine the challenges of the solar build out while considering the Commonwealth's natural lands and buildings.

02:09:26 [W] It's environment.

02:09:27 [W] So what that showed, what we what we looked at is, is, is memorialized here on the screen.

02:09:34 [W] we worked with a technical advisory committee and a technical consultant to analyze each parcel for feasibility.

02:09:41 [W] Whether solar could actually be built on the parsable parcel suitability, including a review of these categories on the screen, agriculture, biodiversity other economic ecosystem Services embodied CO2.

02:09:56 [W] To great efforts, infrastructure slope and aspect. The suitability really was focusing in on land use and natural lands. Protections considerations. As you can see. And finally, the other category that we were looking at in reviewing this was technical potential

02:10:12 [W] How much solar could physically be built on a parcel?

02:10:15 [W] And as I noted there is this technical advisory committee. It was, it included, environmental organizations, Regional planners solar developers and other state agencies and that capable group developed this.

02:10:29 [W] study's methodology, and consulted with doar throughout the process. We want to make sure we had as many voices at the table.

02:10:36 [W] The study shows, exciting potential for solar growth across

02:10:41 [W] The Commonwealth and drives home our solar goal that our solar goal is achievable and even better. There's far more potential for solar in the Commonwealth than we need to meet our decarbonization goals.

02:10:54 [W] In fact, the study showed that we have a potential of 506, gigawatts of technical potential for solar and as if you remember from the slide before we're only looking about 30 gigawatts so we have far more than we need

02:11:10 [W] And about 15 to 18 times, what is needed.

02:11:15 [W] And that really is great news because it means that we can be very conscious and consider it in how we build out the rest of our solar production. So, what we did was we took the top rated Parcels. So anything that got a is in

02:11:30 [W] Single category top of the class and we put those together and just those Parcels, the best of the best in all of the categories.

02:11:39 [W] You see here and the others I discrete described about feasibility and Technical potential. If they got all A's, we put them at the top and we have found that we have almost double the amount of solar potential on those Parcels of what we need

02:11:54 [W] Our 2050 decarbonization roadmap.

02:11:56 [W] So even better news for how we can design than the next programs than the next facilities.

02:12:03 [W] So, just taking a quick look at this, this model parcel, just for an example.

02:12:20 [W] Okay. Sorry technical difficulties at the state but I'm back. So this these model Parcels show you what we were looking at.

02:12:31 [W] We were looking at what's potential for ground whereon. The parcel is core habitat that we cannot build on and we need to continue to protect is, are we talking about ground-mounted?

02:12:42 [W] Are we talking about rooftop canopy? So those are the kind of considerations that the technical potential.

02:12:48 [W] Study actually looked at and again for every single parcel. So as I noted we have more than twice the amount that we need and I've lost my cursor.

02:13:04 [W] Technical potential of my computer is very low today apologize so we have not the top number is 506 gigawatts.

02:13:14 [W] As I noted those the parcels that scored a and every categories, 56 gigawatts, and then we also found that we if we took a step back, maybe not all all ages but some A's and B's.

02:13:29 [W] Sorry to interrupt.

02:13:30 [W] I'm not sure if it's everybody else, but your screen is sort of zoomed in. So we see only a portion of your power may be. Okay, I'm going to end and start again.

02:13:40 [W] Okay, thanks sorry that looks that.

02:13:43 [W] yet, we see the whole thing now, but if you can get in presentation mode, that would be better. Oh, I can.

02:13:49 [W] Okay.

02:13:53 [W] Can you see it better now?

02:13:56 [W] We'll go with that for sure.

02:13:57 [W] Yep. Okay. We see your notes to your notes to if that's a concern. Well, I don't know what are in there, so we'll serve most. Well, I can, you know what? I'm just going to stop.

02:14:13 [W] It's not into you can go with this mode, okay?

02:14:21 [W] Well, you've seen the best parts.

02:14:24 [W] Apologies. Sometimes this computer messed us up, obviously, so just getting back to the study 52. Gigawatts of the best solar 152.

02:14:39 [W] gigawatts of, Highly suitable, roof, top, canopy and ground-mounted. So those are really big numbers and it really does is going to help us decide. Strategically where,

02:14:51 [W] and what kinds of solar we should be deploying and we can do that without sacrificing our natural resources considering repair costs and also our clean energy goals and the study is going to guide us on

02:15:06 [W] We're to add the the solar generation. We need to meet meet our energy demand less than our Reliance on expensive.

02:15:13 [W] Imported fossil fuels so on and so forth. So it's unlocked a lot. The other great part about this is that there is a story map associated with it, so you all can go on our website. If you just Google technical

02:15:29 [W] Angela solar Massachusetts, you can look up your own parcel, your address, your friends, your neighbors and just see what's potential out there.

02:15:38 [W] And we've been, we've tried to take very careful consideration of how we are showing the maps.

02:15:45 [W] If you saw some of the the coloring of that, it's all designed for anyone who might be color blind, hopefully they have better access to it. We've also made some updates since we publish this to make sure that the information is being a

02:15:58 [W] currently depicted particularly on article 97 protected lands.

02:16:04 [W] So we've made some updates and it's a, it's a great tool and we think that this is what we don't, this isn't all the information just to be clear.

02:16:14 [W] This is not everything that we need to develop solar. So we also want to make sure we're thinking about the utilities hosting capacity Maps, because when we looked at technical potential to the distribution grid, it was a

02:16:28 [W] Essentially the distance between the parcel to a substation.

02:16:34 [W] So we want to also think about layer on top of this information, what's actually available on the grid for capacity, to actually build out.

02:16:42 [W] So we think it's one tool, we're very excited about it. And we think it will be a critical piece of information for Developers. For communities, who are trying to consider what to do. And permitting we have some electric sector

02:16:57 [W] Station plans being in development that we with the utilities through the grid modernization advisory Council that this information will help that group.

02:17:09 [W] So we just think it's more information is better and it's also, it's just a whole lot of fun to see what is potential about there.

02:17:19 [W] So, please don't don't hesitate to use this. Look at the study and the story map.

02:17:25 [W] And I think the story map also really does break down those, A to B to C grades.

02:17:34 [W] It shows as I showed earlier, really on each site what's potential for roof top canopy.

02:17:42 [W] So, you really you, you do learn a lot about that. So I will just stop

talking about technical potential.

02:17:48 [W] Little of solar just for a moment.

02:17:50 [W] I will and just flag for everyone.

02:17:54 [W] I know that D OE was speaking earlier.

02:17:56 [W] There's a lot of programs under the at the federal government. The EPA has announced a solar for all program.

02:18:05 [W] I'm sure many of you have read about it and are intrigued by it last month deal. We are put out of a straw proposal for our potential solar for all application. We are as a state.

02:18:18 [W] Delia are with Massey East sea and other partners are going to go after as much of the money as we can for solar. For all the rules just changed on us last week because there's been such great interest around the country for this these monies. We think they're

02:18:33 [W] We poised quite well to offer a very competitive application which will help us bring solar access and solar projects to low low income, communities to environmental, justice communities.

02:18:48 [W] And as you any of you have been working in this industry, have known a probably know you know, we've struggled to bring the solar, the value of solar ownership, the benefits of solar production to those communities.

02:19:04 [W] We think that this, these monies are going to really unlock a lot of that for us.

02:19:08 [W] We had a robust, stakeholder engagement just last month.

02:19:12 [W] We're in a very short time frame because we're in a compressed time frame.

02:19:15 [W] We got a lot of great comments on how this program can be designed.

02:19:20 [W] We are focusing in on single family multifamily and Community solar. We're also really talking about what mechanisms. Can we develop with these monies? That will help this program specifically,

02:19:33 [W] specifically, for low-income communities, but also unlock some of the challenges that we've all faced in solar and, and many of you have faced if you were building or trying to interconnect, there's a we're hoping to build a platform that

02:19:49 [W] Help everyone share information and transfer credits.

02:19:54 [W] And do all those things that we've been hoping for for a while.

02:19:58 [W] We're going to propose to do it ourselves at the state level.

02:20:01 [W] help the utilities out, help all the developers and residents.

02:20:05 [W] So we're very excited about this and hoping to go for as much money as possible. And then finally, just wanted to touch up on the fact that we're at a point in time where we need to do a lot.

02:20:18 [W] A lot of updates and really reflecting on what we've done with solar and also where we are in terms of the financial piece of solar a lot has changed. There are a lot of challenging economics in

02:20:33 [W] Industry.

02:20:34 [W] So we actually deal with are studying while we've been as successful as we have been.

02:20:39 [W] As you can see on the screen, very successful and smart program and esoteric program before that we've got, you know, quite a number of projects installed but we are facing a lot of challenges and so we are conducting a study right now to understand

02:20:54 [W] Exactly what it costs to build solar.

02:20:56 [W] now and we will take that information. Use it first for the solar, for all application. And then second for Designing, what could be a future program under using like the smart program or using

02:21:11 [W] Other sort of funding mechanisms to actually help developers help residents and businesses build solar.

02:21:19 [W] So we are at the right a great time here to have this.

02:21:23 [W] Take this information from the technical potential of solar study and use it with this additional information about what it costs to build solar to really develop the next phase of solar program and incentives in Massachusetts.

02:21:39 [W] So I'm going to stop there and I'll stop sharing since I've already messed up enough.

02:21:45 [W] And turn it over to you, Dwayne.

02:21:49 [W] Great.

02:21:50 [W] Thank you.

02:21:51 [W] commissioner.

02:21:51 [W] that was great to hear about the technical study, get some details on that and the resources available to everybody.

02:21:59 [W] And on the other aspects of what you're looking at a deal.

02:22:05 [W] We are, I know, personally, there's never a dull moment or a lack of things to do at the yu-er. So thank you for your work there and the leadership of that team.

02:22:15 [W] Great. So let's now turn to the

02:22:19 [W] the solar industry and hear from them and then we hopefully will plant will be able to have a short period of Q&A.

02:22:28 [W] Hopefully commissioner you can stick with us till the end and we'll check back with you on that.

02:22:37 [W] But now I'd like to introduce our next speaker. Who is Kathleen Doyle.

02:22:43 [W] She is here representing.

02:22:45 [W] See Bane the solar energy business Alliance of New England as a board member and she is also the founder of fire flower. Alternative Energy, Kathy is a member of the board of directors for see vein and the Totten

02:23:00 [W] Business improvement district a past member of the board of directors of sustainable Milton Kathy founded Firefly, Firefly our Alternative Energy in 2008 and our company has over

02:23:15 [W] Megawatts of renewable energy developed or under construction. At this time, she brings expertise in permitting sighting and structuring complex. Real estate transactions essential for energy projects

02:23:30 [W] I believe in addition to her focus in Renewables, her commercial real estate company grew to be recognized as the largest woman owned commercial and real estate firm in Massachusetts.

02:23:43 [W] So Kathy, Kathy, Kathy, thanks for joining us, and the floor is yours.

02:23:52 [W] Thank you so much Twain. And thank you, commissioner, honey, that was a really awesome outline of the solar potential in the state of Massachusetts.

02:24:02 [W] I'm going to share my screen now and get two.

02:24:11 [W] What we do fire flower alternative energy is a business that helps organizations integrated solar, and wind and and renewal and biodiesel mostly solar into their

02:24:26 [W] The up and we like to say harness to the Sun and help your bottom line, and we'll talk a little bit about that. I'm here in the capacity, as a member of the board of directors of solar energy Business Association of New England in.

Our mission is to protect and promote

02:24:41 [W] New England, solar industry through informed policy, intervention Coalition building, and stakeholder education. And I think we're covering all of that here today. So I'm excited to be a part of this really amazing panel and this this

02:24:56 [W] Like great opportunity to collaborate with everyone.

02:24:59 [W] Why do organizations invest in solar?

02:25:02 [W] Fortunately, I think it's become cool to invest in solar and clean, local renewable energy, which is great because it wasn't always that way. And our state has been extremely Progressive and helping that happen here in Massachusetts.

02:25:17 [W] If a project is structured correctly, there is a way to extract all the benefits. Such that you can actually profitably invest in Seoul

02:25:26 [W] Fleur.

02:25:27 [W] And these things have a very long life.

02:25:29 [W] So there's an eight and a half to 11 percent return that can be achieved on a solar investment if you do it, right?

02:25:35 [W] Some of our other clothes clients do look to secure their power pricing long term so that they have predictable power pricing, and we have all know what that how valuable that can be after seeing Energy prices

02:25:51 [W] Is increased to 41 cents a kilowatt hour for some of us last November there back down again but they're having that kind of a steep increase. Really does re havoc on a company's bottom line and so solar helps them with

02:26:06 [W] Hedge against that and creating, you know, the ability to create a 25 year, Revenue stream, these projects have a 25 to 35 year life so somebody can put solar in place and look to benefit from it for that kind of a

02:26:20 [W] I'm frame.

02:26:21 [W] The other thing that I see in my industry is that I mostly do commercial and Industrial Solar Development.

02:26:28 [W] Lots of that is roof-mounted.

02:26:30 [W] So those those graphs that that commissioner mahaney Manny, if you lie was showing a very exciting for us in my industry, when a company needs to do something with their roof.

02:26:45 [W] It's usually a really good time to couple that with solar investment, so we help them do that. In a way that helped that basically gets them involved in solar at the perfect time.

02:27:00 [W] For solar in Massachusetts.

02:27:02 [W] We've already talked about the federal government has the 30% federal tax credit and something called accelerated depreciation, which basically allows a company that makes a big expensive investment in solar to take the expense over five years instead

02:27:17 [W] The Divided across 30 years or just about.

02:27:21 [W] And then the new, the really new valuable element of the inflation reduction act for lots of our clients here in Massachusetts, is that nonprofit while they can't, they don't pay taxes.

02:27:35 [W] So they can't use the tax credit.

02:27:36 [W] They now can receive a payment in lieu of a tax credit and that's a real game changer for a lot of the nonprofit organizations, who wanted to integrate solar in the past,

02:27:48 [W] We've already heard about the renewable portfolio standard, which really requires utilities to purchase, you know, this much power this year from

renewable sources and we keep increasing the percentage of power that our utilities need to get for renewable energy.

02:28:03 [W] Gee every year.

02:28:04 [W] So it creates a demand for this kind of Renewable Power either from wind or solar or biofuels net metering.

02:28:13 [W] Laws are also really important and that would be an area.

02:28:16 [W] I would see for an opportunity for let's say an improvement because net metering allows someone to create a kilowatt hour of electricity in one place and apply the credit somewhere else.

02:28:28 [W] while there are net metering opportunities here in masscec,

02:28:33 [W] Massachusetts, there are large swaths of the state that don't have any further capacity for net metering and we're working on that as a group and hopefully, the next time we meet we'll be able to share some progress

02:28:49 [W] And the solar Massachusetts renewable Target.

02:28:52 [W] Our latest incentive program for the state.

02:28:54 [W] What it did was smart allowed developers and investors and solar to go to a bank and say, hey, look, I've got this. I've got this ability to show you that I'm going to get certain for the next 20 years

02:29:09 [W] for this power that I'm investing in, with the loan, I would like you to give me, can you please lend me x x, thousands of dollars on the basis of this opportunity and and said, oh, it released it

02:29:24 [W] Really did create the opportunity for projects to get financed much more simply and directly.

02:29:31 [W] So, we're grateful that we have those programs.

02:29:35 [W] I think some of these statistics have already been covered, but Massachusetts is 11th in the whole nation.

02:29:40 [W] in terms of solar capacity installed and we're a very small state.

Clearly. So that we I started in this business in 2008 and we had five megawatts of installed capacity and the entire state in 2008.

02:29:54 [W] Eight and today we have 4236 megawatts. So well, all these projections of what we have to do to get X number of gigawatts installed by 2050.

02:30:08 [W] Look daunting.

02:30:10 [W] We can look at our past experience here in Massachusetts and you can say Hey you know from 20 2008 to now we added a significant number of megawatts installed.

02:30:21 [W] We have growth projections right now.

02:30:24 [W] I think these are a little different than some others have presented, so my apologies, but I think that our growth projections are a little bit more.

Conservative, I want to go back and check on those but that's what I have.

02:30:39 [W] Have a growing, an additional 1815, megawatts for the next five years, and then the solar jobs.

02:30:49 [W] We've talked about as well. Our state ranks, ranked third in the nation for the number of solar jobs in the state at ten thousand five hundred and Forty-Eight. And and we have we need lots more electricians and everyone in the

02:31:04 [W] She will talk about that.

02:31:05 [W] This is the Mac. This is a mix of residential commercial Community, solar and utility scale solar which is typically above five megawatts and you can see early in the smart program think that was smart.

02:31:20 [W] Might have been srec, we had mostly commercial solar, you know, being the majority of what was installed and now we're seeing Community solar. Take a

much bigger piece of that and utility is getting on board.

02:31:35 [W] I said I can take you till he's getting old but utility-scale Solar Development is increasing as well. And what is community solar? IT project can be developed in your own Community or in a community where there

02:31:50 [W] Our kilowatt-hours generated and there are people who use the value of those killer kilowatt hours to pay their electricity bills.

02:32:00 [W] That's in essence, what community solar is, so the subscribers to community, so and receive a credit on their utility bill and the developers have a host of subscribers who sign up for the power that is invested in

02:32:15 [W] Generated.

02:32:16 [W] And this is how it goes.

02:32:17 [W] Here's a community solar developer. Here are the sole ownership subscribers and here's the solar project and the project produces electricity.

02:32:25 [W] The electricity gets credited to the subscribers and the developer who has done The Upfront work to put the project together, Finance it and build. It will continue to maintain it over the over the life of the project

02:32:40 [W] Liver every month. All the solar credits that are created by that project to that project subscribers.

02:32:48 [W] Why is it unique?

02:32:51 [W] It's kind of mixing up a whole host of different

02:32:57 [W] different sized projects or different types of projects.

02:32:59 [W] You see here utility scale is greater than 5 megawatts and Community solar is sort of between one and five on average. I do mostly commercial and Industrial which is, you know, up to a megawatt and then there's residential which is

02:33:15 [W] To 10 kilowatts, so Community, solar fits right in between this community commercial and Industrial and utility and it can be small enough that it can be placed. Strategically closer to where either the the most advantageous place

02:33:30 [W] Develop it, vis-à-vis the grid is or placed where it might be used closer to where my view so it does allow for Community participation.

02:33:42 [W] It there's all kinds of opportunities for people who can't otherwise site solar on their own facilities to get into the game.

02:33:51 [W] And that also allows for places like public housing and low-income housing to

02:34:00 [W] Dissipate without having to come out of pocket with an investment in the community solar market across the u.s.

02:34:07 [W] 22 States, plus DC have this kind of community solar program and my understanding is they're about 5 gigawatts, that were installed.

02:34:15 [W] We reach 5, gigawatts and 2022. Even though in 2022, there was a decline in solar overall solar installation. So a bigger portion of it was Community solar in 2022, and we're anticipating

02:34:30 [W] Eating that that growth is going to continue. This is what the trajectory looks like.

02:34:35 [W] sorry to slide little murky, but at the end of 2020, to we had 5270 gigawatts.

02:34:42 [W] excuse me megawatts of installed capacity and we're anticipating that will see a moderate climb from 2022, 20, 23 or 24 and then kind of leveling off.

02:34:55 [W] But as you can see Total Community solar by 2027 is looking like about eleven and a half megawatts.

02:35:03 [W] Massachusetts was one of the very first States and that's just has

been Progressive in incentivizing all solar across the u.s.

02:35:13 [W] and communities told her we were one of the first states that integrated it right into the early programs under solar renewable energy certificate program which was the precursor to the solar masscec.

02:35:24 [W] Massachusetts.

02:35:25 [W] renewable Target, smart program.

02:35:29 [W] It basically allows the energy value to be recognized by somebody on their electricity bill.

02:35:38 [W] So it made it a little bit simpler and I say a little bit because we have a way to go to make it simpler still, so that people won't be afraid to participate and that the people who do community solar won't have the administrative burden that

02:35:53 [W] This right now on trying to sort out all these credits and how they got credited among the users in the utilities and the developers.

02:36:01 [W] So there's there is work to do but in general the idea is have a developer invest have the developer to maintain some subscribers to that project who can benefit from, what is being produced, the

02:36:17 [W] Two batters in smart, don't just fall to community shared solar. They also, there are also added benefits to low-income Community shares so low income property, and

02:36:31 [W] And public entities.

02:36:32 [W] So all kinds of parts of this smart program has helped manage and develop the kind of solar that the state is looking to develop.

02:36:42 [W] And I anticipate that that's going to continue in the next program for your info. And incite a typical four hundred kilowatt roof mounted system. Right now would be about a 1.4 million for 43 million dollar

02:36:57 [W] Investment that would qualify for about a four hundred thirty three thousand dollar tax credit, the day, this system was turned on and that would have to be extracted from the project in a way that would maximize the value to be

02:37:12 [W] 433,000.

02:37:14 [W] so, net.

02:37:16 [W] the investment would be about a million dollars for a four hundred kilowatt system. The way that usually has financed is that the developer has some Equity that 360,000 they have some ten or twenty year debt at

02:37:31 [W] 50,000 and then they have principal and interest payments of, you know, X over that.

02:37:35 [W] I think I modeled this at about seven and a half percent. So there is a way to get a cash on cash, return on a solar investment and that's my message to people who are looking at it is, it doesn't have to it's not, you know, it doesn't have to

02:37:51 [W] Money or be an investment that you wait for years and years.

02:37:54 [W] There's a way to do it profitably if you structure your projects, right? So, as you know, the mass Market took off after the smart program in 2018 and we anticipate that bill

02:38:09 [W] Will be continued growth, but not quite at the level of the, you know, early smart program in 2020 2021. We'll see a little bit more modest growth. One of the things that we talked about earlier, which were going to talk about again, interconnection,

02:38:24 [W] Strengths and that's really holding projects up. I used to be able to the same size project is now literally taking double the time frame to do.

02:38:31 [W] So what are the opportunities we've heard Lots from this Administration Haley, Driscoll Administration on their clean energy, and climate priorities.

02:38:40 [W] And that's going to help solar all the way along the smart program, and its successor would wherever that will come from. I will say that my experience with the mass Cee Cee intern program, which is trying to get

02:38:54 [W] college students involved in the industry and it affords businesses like mine and opportunity to hire interns to train them and get them involved in the industry at with with a little bit of help from the state and that

02:39:10 [W] Has been really successful in every single one of my interns is in the industry and continues to work in solar. So I'm excited about that. The grid modernization console, the sighting commission, the potential, the technical potential is still, has her all about these.

02:39:25 [W] All these are really awesome opportunities for solar in Massachusetts.

02:39:30 [W] The challenges are interconnection timelines, interconnection timelines, and that's a really tough one. And there's something that's happening.

02:39:37 [W] That is unique here in the state called Capital Improvement projects which I'll go into in a minute.

02:39:42 [W] But instead of the way it works right now is if you want to connect a solar project to the grid and there's in capacity at that location of the grid, then you are the next guy in and you are responsible.

02:39:54 [W] Possible for all the costs associated with that additional interconnection cost, which really close the economics of the next project out of the water. So there's this idea is less project. A whole bunch is more unless project, more capacity

02:40:09 [W] And let's add a cost to each kilowatt.

02:40:14 [W] That want each one that wants to connect to the grid rather than just hitting the next person in that project, never getting built.

02:40:21 [W] We also see inflation and supply chain issues. Like everybody we are seeing the banking industry. Pull back on solar financing which is the Big Challenge.

02:40:31 [W] We're seeing Federal terrorist come in and go out and so it leads to uncertainty in modeling projects and that's always

02:40:39 [W] Is difficult.

02:40:40 [W] We talked about citing challenges and there are some state code issues.

02:40:45 [W] Here we have, you know, the smart program saying, you have to you have to pair every project done over 500, kilowatts with storage. And then we have a number of municipalities of our 351 in the state.

02:40:58 [W] Let's say, well no not here.

02:41:00 [W] You can't put batteries anywhere next to the solar in this city or this town. So we have challenges and one of the things

02:41:09 [W] I mentioned earlier, lack of friction, free mechanism to deliver access to low income, how low income customers, it's not as easy as it needs to be, to sign someone up to get the benefits or even when someone else is investing.

02:41:25 [W] And the timing updates for the smart program, I mentioned Capital Improvement projects.

02:41:30 [W] So in these colored areas of our state, there are the grid that cannot support additional solar until there is, there are upgrades.

02:41:40 [W] And so those upgrades are going to do have to take place. This this

plan is for, you know, about four years. I think we might be about 80 and less than a year into it. So three more years. If I want to do a project in any one of these, 02:41:53 [W] These areas that are colored.

02:41:55 [W] I can't get it financed because I can't go to the bank and say, I'm pretty sure this is going to happen in three years.

02:42:02 [W] I can only go get financing when it done.

02:42:05 [W] So, that's a huge swath of the state on. Only one of the utilities is there.

02:42:10 [W] this is happening with both eversource in National Grid. So I'm not going to go through the wish list because some of these things we've talked about, I did want to bring up Northeast Community. Solar said, what makes it successful program are the following things.

02:42:24 [W] You know, and ambitious but achievable goal for renewable energy.

02:42:29 [W] sufficient capacity targets and invested Partners. We have all these things known in predictable Revenue. Now that's really something that as we defined the next set of programs we want to be able to do that in a way that

02:42:45 [W] Aboard everybody who's going to be financing solar and building solar to know.

02:42:50 [W] You know I'm investing X and I'm getting why back. And right now in parts of the state, there isn't an easy way to do that or if we know it doesn't support the development of solar in some parts of the State under the program.

02:43:05 [W] We have to since we have to balance subscriber savings against ratepayers other repair impacts and we have to you know, have the ability to course-correct when we need to as the program is mature. We talked about a lot of these

02:43:21 [W] Things grid planning in modern modernization And Timely and connection is going to be key.

02:43:26 [W] The cost allocation for extensive upgrades is going to really impact where and how solar is going to be developed and implementing course Corrections.

02:43:36 [W] I'm just going to say one more time, I've lived through, you know, srec 1s strict too smart, you know phase one smart 2.0.

02:43:45 [W] All of these programs are amazing and they're very helpful to get the soul.

02:43:50 [W] Solar capacity targets we want, but in between the end of one in the beginning of another, we run Solar Development investment Consulting.

02:44:02 [W] Companies have had to kind of sit on the sideline before we could do our next project because there wasn't another one yet designed and in the pipeline. So, my wish list, our wish list might be trying to figure out how to smooth that out a little bit.

02:44:15 [W] So we don't have the fits and starts that come with changing one in

02:44:20 [W] the program to another.

02:44:22 [W] We want to be able to figure out how to address billing and crediting issues. I could go on for years on that one and utilizing lessons learned from our neighbors.

02:44:32 [W] They all have I would say Connecticut probably has the best solar green bag.

02:44:38 [W] so I'd love to see that as I love to see some more ways for us to collaborate on financing projects that want to be built but that might not be able to be built yet because of some of these uncertainties

02:44:53 [W] And I thank you very much.

02:44:55 [W] I'm Kathy dual fire flower, alternative energy and I am here as a volunteer on the board of Cee.

02:45:03 [W] solar energy Business Association of New England.

02:45:06 [W] Thank you.

02:45:12 [W] Fantastic.

02:45:13 [W] So thank you so much, Kathy that was really helpful to hear the perspective of a solar developer and financier, which obviously is a critical business need for bringing this older

02:45:28 [W] To to Massachusetts.

02:45:30 [W] oh thank you for your work in that area and for the presentation here, let me ask if we can pin. I think it's called myself with Elizabeth and Kathy

02:45:46 [W] As well as any other speakers that are still around from the earlier, part of the session.

02:45:55 [W] I'm not sure that there are many had to go.

02:45:57 [W] So thank you, Kathy and commissioner for joining us and for your presentations, we do have about ten minutes for some Q&A. If you're so willing and then we'll wrap up the session and get

02:46:12 [W] Prepared for next week.

02:46:13 [W] Next week's session.

02:46:17 [W] So great, thanks for thanks for your your time again. And so, these are questions that have been provided to us by attendees over the attendee Hub with some crackpot

02:46:34 [W] Work on those to sort of bring bring those questions together into a few questions that we have time for again, for all attendees. All the questions that have been submitted will be recorded read through

02:46:49 [W] By the organizers of the Forum and used productively but we only have time for a few, so great.

02:46:58 [W] Let me ask and this came up actually in two questions which all kind of combined and this is may be primarily for you commissioner and that is

02:47:14 [W] For the,

02:47:27 [W] Work that you identification of and assessment of solar potential on each parcel.

02:47:35 [W] And this is an issue.

02:47:37 [W] I think that resonates in a question that may raise resonate with Municipal officials to who are looking at their own towns, maybe parcel by parcel and looking at where solder might be best

02:47:52 [W] Go and develop zoning zoning rules around around around that to try to move solar where its desired.

02:48:01 [W] But the same time, you're sort of working as a government official being local, local level or state level looking at private property. And and so the question really is, if the properties that scored high

02:48:16 [W] In the, in your skin, the solar potential study our private properties which I'm sure many of them are because you look at all properties are, do you have a sense or do you know anything about how developers are targeting these landowners for

02:48:31 [W] Agile development and how landowners are reacting to having their Parcels identified as having high high potential.

02:48:39 [W] Maybe it's too early to tell, but appreciate any thoughts on that?

02:48:43 [W] Yeah, I think it's for us, it's, you know, I think it's an important question to ask.

02:48:48 [W] It's one of the reasons that we wanted to develop.

02:48:51 [W] This was so that everybody especially, Municipal officials who don't have access to a lot of expensive gadgets and tools that they have.

02:49:00 [W] Some of this information.

02:49:01 [W] I think we all are pretty familiar with the fact that you can, there's, there are available tools out there that I assume, you know, any number of entities used to approach, landowners for solar.

02:49:17 [W] We so I don't know if we've heard much information to directly respond to that question because we only put this study out in July.

02:49:29 [W] But I think, what, where we are seeing it being useful. For me, this palette, he's is sort of the flip of that is that these municipalities can actually use the map to start thinking about how they want to

02:49:44 [W] Plan for their community. And maybe if they want to set up some some solar districts or what, not to really try and encourage solar in certain parts of town versus others and we so

02:49:59 [W] it's really helpful there and I will note that we are seeking Federal funding to help us actually look at you make Dwayne probably remembers this because I think he created it but we did

02:50:14 [W] Back in the day, establish a solar attack, a solar model by law and so we'd like to actually update that solar model by law.

02:50:24 [W] So we're looking for funding to do that.

02:50:26 [W] We're also looking for federal funding to create a similar solar, similar model by law for storage. So, you know, again, we're trying to create these these tools, but yet, you know, it is devised for for anybody

02:50:42 [W] So I would assume that certain developers will take advantage of this information, and we'll use it to try and craft some new new development opportunities.

02:50:54 [W] But we also hope that municipalities and quite frankly, the state will use it to figure out where we should be building solar and how we should if we're going to do it in a certain way.

02:51:05 [W] what other mechanisms do we need to help communities developers residents businesses, actually develop that

02:51:11 [W] That we know that canopy solar is very expensive to build and parking. Lots have a lot of other uses being sought for them, so we want to think through

02:51:26 [W] Those things and try and make more of that kind of development happen.

02:51:31 [W] Perfect. Thank you.

02:51:32 [W] Thank you.

02:51:33 [W] commissioner Kathy anything. It wasn't directed to you. But anything to add to that, I do have another question for coming to you.

02:51:40 [W] I would, I would add that the good news is I think with we're trying to do direct people to do roof-mounted solar that really is in turn from an investment standpoint that that is

02:51:55 [W] The result. If you put roof-mounted solar on a building, you're leveraging an asset that isn't being leveraged yet, right?

02:52:02 [W] So there is a roof.

02:52:03 [W] it's sitting there either.

02:52:05 [W] Someone will pay you rent for it and put their solar project on or where you yourselves. Can invest in solar on a roof and make power for your own use. It's really kind of the there are three Lynch pins to develop

02:52:22 [W] Successful financially, successful commercial solar project.

02:52:25 [W] One is, you know, to have site control that the landlord has that the second is to have on-site consumption in the third is to have attacked appetite. If you can put all three of those together, then you have kind of a home run of a project and I think there are lots of

02:52:40 [W] Roots in our state that could do that.

02:52:44 [W] We thank you another question which I is trying to reckon reconcile a point that you make Kathy in your presentation which I think was sort of sea beans projection.

02:53:00 [W] That's older growth in the foreseeable. Future will actually be a bit depressed compared to solder growth that we have seen at the early days of the smart program or maybe s right to program.

02:53:14 [W] yet we heard from the secretary and under Secretary of the tremendous acceleration of solar growth that we that we need to have to reach our 2050.

02:53:29 [W] It's and intermediate targets.

02:53:31 [W] So what is the reconciliation here?

02:53:35 [W] Are there are there are there, barriers there in the marketplace? Kathy that you anticipate if Unleashed will allow for the growth that we need.

02:53:46 [W] And is there, what is your, what is your thought in terms of how the solar industry can? In fact, start accelerating again the the

02:54:00 [W] The development of solar, I think, I think a big thing is, how do we extract uncertainty from this Solar Development Pipeline and the uncertainty that exists right now can be coming either from the interconnection process, which is

02:54:15 [W] Stalled in a lot of places.

02:54:17 [W] I personally, I don't work with a single solar vendor to build my project.

02:54:25 [W] I actually did the job to a number of different vendors each time. And there have been three vendors recently who operate in New England who are not fitting jobs in Massachusetts because they are fearful of

02:54:40 [W] Timeline associated with interconnection.

02:54:43 [W] That's not a good thing for our state and it's worrisome for me that these are very experienced developers who I've worked on projects with in the past and they say solar contractors, I should say and

02:54:58 [W] Say, I really, I have a lot in the pipeline in Massachusetts and it's not going anywhere right now, so I'm not going to put some more projects in the pipeline.

02:55:08 [W] Great Elizabeth.

02:55:10 [W] Anything to add to that in terms of where you see solar markets to be able to start accelerating again.

02:55:17 [W] Yeah, you know, I think picking up on someone of what Kathy was saying, you know, I think one of the biggest challenges is that the interconnection piece. And I think that's because right now, with everything that's changed at the federal government, the potential

02:55:32 [W] - I could come into the state from solar for all of Grant funds that will help unlock some things certainly the tax credit expansion of the tax credits.

02:55:41 [W] There's we've really unlocked a lot of the channel the previous challenges but in Massachusetts we are a victim of our own success and we have built out this this grid to you know what the utilities feels their maximum capacity.

02:55:56 [W] Absolutely.

02:55:56 [W] So one of the things the administration is really trying to hone in on

is understanding through either the set process or this, the grid modernization advisory Council.

02:56:09 [W] How do we optimize what we have so that we don't have to wait for five years to build. Every substation new again. And also, you know, we can't withstand every subject, you know, there's gonna be a lot of construction in

02:56:24 [W] Field. We know this is going to be a lot of upgrades to our system. Our distribution and transmission systems but how do we use what we have.

02:56:31 [W] How do we be smarter? How do we use the the brains of our state through MIT and UMass and everywhere else in between to actually put forth technologies that use solar and storage in a better way so that we don't have to do five years

02:56:47 [W] Construction for one little geographic area.

02:56:52 [W] Perfect.

02:56:52 [W] Thank you.

02:56:53 [W] I think Kathy appreciates that response as well to my ears.

02:56:58 [W] Okay, let me ask you another question that I'll try to summarize, and it seems like the Commonwealth through the great work of EA and climate Chief is really expressing

02:57:13 [W] Two objectives on our climate policy and clean energy future is really to substantially increase.

02:57:24 [W] The rate of solar build out along with other Renewables, but solar build out to meet our needs for 2050. While also tend to do so at a reasonable cost and at an accelerated rate,

02:57:39 [W] While at the same time, same time, maintaining protections of our natural working lands with the with the understanding and correct me. If we have this wrong that

02:57:55 [W] generally, the cost of solar on the built environment on parking, lots, as you mentioned, but the built environment is both tends to be costlier, which ratepayers generally pay

02:58:11 [W] And second at least a date has been slower. The market development that of that has been slower. And so how is the state sort of working with

02:58:26 [W] These dual objectives and sort of looking to build out the solder that we need effectively Quickly cost as cost effectively as we can, unleashing the built environment markets that have been

02:58:40 [W] A little bit harder in the past so that we can protect more of our natural working lands.

02:58:45 [W] But at the same time, you know, what is the sort of sense of the of the Commonwealth with regard to the need to use some of our natural working lands for solar to accelerate the solder that we need.

02:59:00 [W] I'm over this time period.

02:59:03 [W] Yeah, I mean that's other than interconnection perhaps as our greatest challenge when it comes to Solar Development and in our study, the technical potential study, does look at the costs associated in the

02:59:18 [W] Category.

02:59:19 [W] So, you know, it's true, rooftop solar individual, rooftop solar is that the most expensive but you know we're trying to attack it from a variety of places and you know again seeking federal funds to bring that money in

02:59:35 [W] Um, and and maximizing kind of shouting, again, for the rooftops, the use of tax incentives, the other piece that, you know, at deal we are we connect this with is through our building

02:59:50 [W] And through our the Mastiff program. So we want to make sure that as we're building and our or remodeling homes and businesses that we are using less energy

03:00:05 [W] On a building. But also either preparing for solar panels or actually including them. So do any of, you know, about our specialized stretch code, so that the building code that many communities are adopting that has the highest standards of

03:00:20 [W] Energy Efficiency if you want to have any sort of gas or fossil fuel in your building, in the specialized code Community, you have to have solar panels installed.

03:00:31 [W] So we're trying to maximize those other opportunities but we are going to have to blend the repair cost and the development types.

03:00:40 [W] But I I'm hopeful that this technical potential study really does show the industry and building owners the real.

03:00:49 [W] The potential that they have. And the real policy drivers that we have to actually turn to the rooftops and roofs, have a lot of competing interests as well.

03:01:02 [W] HVAC equipment, certainly heat pumps and whatnot.

03:01:05 [W] store it as storage batteries.

03:01:07 [W] So, we have some challenges, but we know that there's got to be some balance, but a shift towards building on the built environment.

03:01:18 [W] Thank you, Kathy.

03:01:19 [W] Do you have any thoughts on that topic in terms of how this balance between natural working lands, protection soldier in the cellar and on the built environment cost rate Market rates of adoption and accelerating the

03:01:34 [W] It's sort of plays and from the business angle.

03:01:36 [W] Well, first he being, I think one of the wish list items is try to figure out a good balance there for not taking not you know, about extracting a huge portion of the state from the potential for Solar Development.

03:01:51 [W] I mean, if we can find a way to do it in conjunction, with the goals of, you know, maintaining our built environment.

03:01:59 [W] The maintaining the, the carbon capture that is being done in the land use that's currently underway I will one. Other comment is I I do meet with a number of owners of properties

03:02:14 [W] We're trying to figure out how to satisfy the new upcoming building code and they're rolling their eyes saying, oh gosh, I have to put solar on my roof.

03:02:24 [W] But when I go in and I say, you know, it's not, it isn't the end of the world.

03:02:29 [W] Let me show you the financials on it.

03:02:31 [W] It will paddle out. And by the way, if you don't want to do it, I will rent your roof and do it, and then they kind of sit up and go up, okay? Maybe I should listen to this.

03:02:41 [W] So it isn't, they start out being very wary of

03:02:44 [W] going to invest additional money because it's not their budget, but if I, if one can show them how that will work to benefit the project, and there are times it will work, there are times, I can't do it for one reason or another, but there are times that it will

03:02:59 [W] They're surprised and kind of delighted actually because when they're trying to, you know, get a designation, let's say a leed-certified building and

they only get X number of points for the league, lead points for this or that and it just seems like to them.

03:03:14 [W] It just cost them money. This is a, this is an opportunity where they invest money and get a return. They make power for 25 years and they're not really thinking about that.

03:03:24 [W] They're thinking about it in terms of Leed certification expenditures. So

03:03:29 [W] it's a good when it's a good way to educate people who would otherwise not want to participate in the Solar industry that.

03:03:38 [W] Oh, yeah. This this will work for you. Just hang on a second.

03:03:42 [W] Great.

03:03:42 [W] Thank you.

03:03:43 [W] One more question and then we'll wrap up and this may be first to Elizabeth.

03:03:49 [W] So you had mentioned in your, in your presentation, the, the potential for a new model sold over by law that could be offered by

03:04:04 [W] We do know in western Mass and elsewhere in Massachusetts.

03:04:08 [W] There are a lot of communities that are working on solder. Bylaws zoning, bylaws for their communities.

03:04:15 [W] And to some extent, I think it was maybe one of the undersecretary or secretary had sort of indicated that that municipalities can really determine and plan out where solder can

03:04:30 [W] Can be built in their communities but as we know statute does not allow for restrictions on Solar Development except unless in the case of concerns about public health, welfare and safety.

03:04:45 [W] D, so wondering how your model by not that you've done it yet, but how you might be thinking about this statute and how mean that's municipalities might make

03:05:00 [W] It's older by law, a model by law and how these issues with regard to, you know, not any undue restrictions except for these situations of Defense justifiable, restrict concerns about

03:05:15 [W] Public health, safety and Welfare.

03:05:18 [W] Yeah, so we're very early in the process and I just, I want to pretend that I'm not a lawyer so I don't have to really answer this. But you did say that it was General Counsel here till we are, so I can't hide it.

03:05:32 [W] You know, there's been a lot of Court decisions in the last couple of years that are instructive on this.

03:05:38 [W] Think a lot of communities didn't want to.

03:05:41 [W] There was just a hesitancy maybe a decade ago, to actually ask some of those questions of a court. And, and now

03:05:48 [W] They've been asked, so we do have a lot more information, I try and flip it. And think, rather than restrictions, what can we do to encourage in certain places? And that's, you know, some of my answers today sort of are

03:06:03 [W] Above that. Is that? Where are we?

03:06:06 [W] How are we devising programs?

03:06:08 [W] How could we devised by bylaws to encourage development in certain places rather than restrict?

03:06:17 [W] So you know I think we're going to take that view, we're going to really certainly look at the Court decisions and and Cee you know what we can put together that's useful to communities

03:06:32 [W] And isn't update, it's not going to be easy, but we think it's a valuable use of our time.

03:06:40 [W] Fantastic.

03:06:41 [W] Thank you. Elizabeth anything to add to that Cathy before we wrap up.

03:06:47 [W] No, I'm I'm that's not my yeah, exactly.

03:06:50 [W] Ok just wondering and I dunno. Go ahead of Kathy sorry no no I said I defer.

03:06:56 [W] defer. Okay. And do know commissioner, they there are a lot of communities as I'm sure you're aware of grappling with these issues and any items in model language around. This would be quite helpful from

03:07:11 [W] The state which can I ask one. One asked, there would be the fire code issues that we're we're really facing a lot of issues and 351 cities and towns, 351 different

03:07:26 [W] Interpretations of how the battery has to be attached to the solar and where it has to be.

03:07:32 [W] And how many rooms have to be built around it. It's really challenging the beauty of our state and local control and What Makes Us Massachusetts. Sometimes is the challenge of our state.

03:07:45 [W] But we've been engaging with the fire marshal, there's a new fire marshal now. So there's been a little bit of progress made, but it's important to to understand that and we've been

03:07:55 [W] Obviously talking with the industry as well and making some suggestions about what education efforts they can put in to help us in those efforts.

03:08:05 [W] Great.

03:08:05 [W] Thank you.

03:08:06 [W] Commissioner, thank you, Kathy, for your presentations.

03:08:12 [W] Thank you to all our speakers from earlier today, who may not be with us anymore.

03:08:17 [W] But this was really a great way to start this forum.

03:08:20 [W] I believe we have a great deal of information. New information for a lot of people. For sure, we do understand that we have great leadership within the state we have

03:08:33 [W] Great resources. The federal level and we have a strong industry in Massachusetts.

03:08:38 [W] We two things in terms of wrap up. First, is that, as I mentioned before, there is a post-session survey that is available on the attendee Hub on the right hand side.

03:08:53 [W] I'd please, we encourage you to take some time. Now, that should be available now and you can return to the attendee Hub anytime in the next 48 hours to fill out that survey that will be another opportunity

03:09:08 [W] Along with the questions that were eight, we've received another opportunity for you to give us pretty much open responses to a number of important questions that we're trying to solicit from the from the, from

03:09:23 [W] Attendees and from the community.

03:09:25 [W] So please take your time to do that.

03:09:28 [W] we appreciate that.

03:09:29 [W] that will be a survey that is open and applicable for each of the four session, so fill out one. Now if you attend the other sessions, you can fill out another one pertaining to the information that you receive you heard in the in the

other sessions.

03:09:44 [W] To prepare for the next sessions. Do know that this was only the first of four sessions on this interesting and valuable discussion on solar in Western, Massachusetts session to

03:09:59 [W] Will be next week at noon, on Tuesday, September 12. That will focus on solar and land use in Massachusetts.

03:10:09 [W] we obviously touched on that today.

03:10:11 [W] very important issue may be the Crux of the lot of what we're working on and struggling within our communities.

03:10:18 [W] So please attend we look forward to your attendance in that session session 3, which will be the following Tuesday.

03:10:27 [W] Also at noon September,

03:10:29 [W] 19th will be on solar equity and Community benefits.

03:10:32 [W] How can we use this energy transition?

03:10:35 [W] And this build out of solar, to also create more Equitable outcomes for all of our communities and more economic benefits for our local communities as well.

03:10:47 [W] And then the fourth session which will be the wrap-up also on Tuesday in later.

03:10:53 [W] September September 26, will be perspectives on solar where we'll hear from a broad range.

03:10:59 [W] Ange of stakeholders in solder to gain a understanding and a respect for the various different large, breadth of stakeholders and breadth of perspectives, on these issues.

03:11:13 [W] So, for all of that, we look forward to your attendance. We thank you for your participation, your attention, and for your learning today, and we look forward to seeing you all

03:11:28 [W] Next Tuesday as well at noon again a final. Thank you to all of our speakers. My personal. Thank you to our clean energy, extension staff River, Mary and Zara on pulling this all together

03:11:44 [W] With the clean energy extension again to our partners, Senator commerford representative. Domb their staff that really worked with us to pull this off and to this event staff.

03:11:56 [W] technical staff for the platform that we have used today, okay?

03:12:01 [W] With that, we will close session, one of the Western Massachusetts older forum and we look forward to your seeing you again next Tuesday at noon.

03:12:12 [W] Thank you everybody.

03:12:20 [W] Recording stopped.