

[SQUEAKING]

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SPEAKER: Next, we're going to hear from Ania Camargo, who is associate director of Thermal Networks at the Building Decarbonization Coalition to talk about that rapidly-evolving policy landscape.

ANIA And there's a little clicker?

CAMARGO:

SPEAKER: There's a clicker up there, I think.

ANIA All right. OK. Hi. Good afternoon, everyone. So you see I have Geo there in parentheses. And that is because
CAMARGO: most of the legislation that's passed to date uses the term thermal energy network. So you will be hearing me say that. But in general, I'm talking about the broad category of both geothermal energy networks and thermal energy networks. And I'm just going to give you a picture of what's happening nationally.

So here is how a bill becomes law. This is real. It is just never a straight line. It's very messy. And the reason why it's messy is what Delegate Charkoudian was saying. It's about bringing stakeholders together with different interests and making sure that all of their interests are being met. So rarely does the start end up like the finish. But the really good news with thermal networks is that states are learning from each other. So this is becoming a little less muddy. And legislation is moving really fast.

So again, I'm going to start with this one on what's the general journey that we're seeing in legislation? And again, I have the word "utility" up there because the only-- anyone can build a thermal network right now, municipality, lots of colleges and universities, a hospital, anyone, except for a regulated utility. And so we have to pass legislation to allow gas and electric or water companies to build thermal networks.

So the way it starts is exactly like Delegate Charkoudian said. It's on all the states that we're working, or that are passing this legislation, it's really a group of advocates. In her case, she was the legislator who started, but then she worked with all the people here. If you heard this morning from Kelsey, it started with Mothers Out Front. And then the underpinning of this, for the legislation that has passed so far, is that all of the states-- so eight bills have passed.

All of the states have significant climate commitments of at least reducing total emissions by 75% or more and greening the grid-- so RPS commitments. And seven out of the eight that have passed have future of gas proceedings, meaning the regulators have said, hey, gas companies, how are you going to meet these commitments? So this is what's happened to date, not necessarily what will happen in the future. But this is the kind of bills are very attached to our emissions.

Once legislation passes, there's a whole process that kicks off with the regulators, which you will hear after me from Chair Van Nostrand. But it's kind of a negotiation between the utilities and the regulators looking at the legislation that passed, saying, OK. What needs to happen for us to be able to move forward? At the same time, you're going to have to be working on the workforce supply chain, making sure there's community outreach, et cetera.

And then you can get to construction. So, so far, only one project, which is here in Massachusetts has made it through construction. And all of the bills that have passed require data collection and pilot evaluation. So again, every state is different, but this is the broad thing that we're seeing across the state that gets legislation passed. And here are the eight states that have passed. they're listed there on the right. You will notice, 2021, Massachusetts passed the first bill that allowed network geothermal. And just this year, 2024, four bills passed, as well as several states did another round of passing legislation. And then you see there dark blue, considering legislation. Actually, just this month, already five new states have filed legislation. So we are expecting this to continue to grow.

And this you don't need to read this. It's just to give you a sense of what's in these bills. You see the states across the top. And you can see what the provisions are. And the key thing about here is the states are learning from each other. And this is on our website, so you can check it out.

All right. So now I'm going to combine it. What does this all mean? And it's really about how does the technology and the stuff on the ground relate to the legislation and the regulation? So here's a great diagram that HEET put together. It's a gas system, and you can see that very cute little section of green. That's the thermal network. And so this is the demonstration. All eight bills either allow or mandate pilot. So everyone is starting with demonstrations. So what's the kind of work that comes with that?

The bills include a whole series of things that are about these pilots, right? So the definitions, ownership is really interesting. And starting with New York, the legislation actually says gas and electric utilities can own and operate thermal energy networks. And then, several of the states after that implemented the same thing. Massachusetts, we just passed legislation in 2024 that allows the selling of thermal energy by the gas utilities.

So I'm including environmental protections. Labor standards, you just heard from Ryan. In New York, That. Group of advocates, one of the core members of that group of advocates were labor leaders. And so there are very strong labor standards in the New York bill that are about the geothermal workforce in general, but also about the existing workforce and how they're going to be transitioned as part of this.

Consumer protections, I should say also, environmental justice in there. Many of the bills, again, starting with New York, require at least one pilot to be in an environmental justice community. And several of them say that the customer should not have to pay more than what they're currently paying on their bills.

All of them include cost recovery. So the pilots can go through the rates. But the issue is what's included. And so the states vary in that. Here in Massachusetts, everything could go through the rates. In California, for example, all of the behind-the-meter costs, which are pretty significant, all the retrofits cannot. And so they're struggling with how are we going to pay for that/ And then pilot data, collection and reporting, I guess I already said, they're all doing this. Anyway, so this is how this works.

Next step is development. And this is-- now where we're starting here in Massachusetts, it's like you grab what you learned from that first pilot, and now we're expanding. And how is that going to work? And so through that some of these bills are starting to pass, and there's some conversations. Interim rate design, how are we going to design the rates to deal with this? Amending the obligation to serve this is a huge one.

Many states filed legislation to try to change this. And I'm going to explain what that is, which is if any one of those little green houses says no, I want to stay on gas, it means that the gas system has to stay. You can't pull it back. And so amending it so that the gas utilities can expand their service to not just be about gas, but also to be-- or to sell thermal energy allows them to then say, OK. We're going to provide you heating and cooling, but it's not going to be with gas.

And so, so far, two states have touched that, Washington State, four thermal energy networks are allowed to meet the obligation to serve with thermal. And California has a really interesting one where they said if 60% of a street or the segment that they're taking the gas pipe out of says that they want a thermal network, then they're allowed to meet the obligation to serve that way.

Gas-- so then joint electric planning, this is our commissioner. Chair Van Nostrand will talk about this. But basically, one of the biggest benefits of putting in these thermal networks is the impact on the electric grid. And so being able to have that joint planning and prioritizing of where these things should be built is really important. And so we're starting to see that already, and not only in Massachusetts but elsewhere, and thinking of, OK. If you're going to replace a pipe, that's an obvious place. If you're going to build a substation, an electric substation because you're running out of capacity, maybe that's a great place. So that's starting.

And then, of course, the full system transition, which is what we all want, is going to require a lot more. And this really hasn't started. We filed some of this cycle for two years from now here in Massachusetts. But creating a thermal market, allowing folks to buy and sell energy, integrating utilities, gas, electric, and potentially even water-- the water utilities also have a lot of thermal energy. Waste heat recovery, what are the rules going to be around that? Tactical transition plans for whole cities and regions, and so this idea that you can map out you know how old your pipe is. You know what's going to have to be taken down. What's going to make the most sense for everything? And how can we transition the whole system thinking 10 years ahead and not just five or two?

And then the final rate design, still in consideration, and I'm involved in a few dockets across the country, in some places, the combination of the electric-- I'm sorry, of the thermal and geo rate makes a lot of sense. It's being covered by all the customers. Some folks are fighting that and saying no, it should be by itself. And then, in New York, there's one utility who's saying it should be covered by both gas and electric because the electric customers are the ones that are most benefiting.

I talked about allowable cost recovery. And then the big is the avoided cost integration into the thermal networks because what is happening is that that benefit on the electric grid means that we're not going to have to build out the electric grid. But the costs are on the network geothermal installer. So the benefits and the costs are not aligned. And so we have to figure out how to do that.

So that's how the policy and this thing we're hoping it's going to roll out. And I just want to say, remember, only eight states have passed legislation. But this map looks a lot better than that, which is utilities across the country are really interested in doing this, regardless of whether legislation has passed or not. This is a map of the Utility Net Geo Collaborative, and both blue's are actually members of that collaborative. And they are basically exploring what this looks like for them. And the light blue is states where at least one utility has filed a pilot. So far, there's been 22 pilots filed with the Regulatory Commission.

And then I just also want to end with this map, which I hope you'll all check out, because you can click on what type of owners or what the status is and the type of thermal networks and just see that, actually, we have a lot of projects in this country and that there's huge opportunity for learning across projects. And that is everything.

[APPLAUSE]