

Climate Solutions That Go Beyond Carbon: Shaping Georgia's Energy Future

Summary

Were you aware that the Georgia Power Integrated Resource Planning (IRP) process and the decisions the Georgia Public Service Commission (PSC) makes affect the pathway for scaling many Drawdown Georgia climate solutions? In this webinar, recorded as Georgia Power's 2022 IRP got underway, Blair Beasley of the Ray C. Anderson Foundation moderates a conversation with Kevin Kelly of Southface Institute, Dr. Marilyn Brown of Georgia Tech, and Cicely Garrett of Partnership for Southern Equity, unpacking how the IRP process works and what's at stake for climate solutions and equity in Georgia's energy future.

Key Takeaways

- The IRP is Georgia's closest thing to a state energy plan: a 20-year roadmap Georgia Power must file with the PSC every three years, covering everything from power plant retirements to new renewable energy procurement to energy efficiency programs.
- Georgia Power's 2022 IRP proposed retiring 12 coal and oil-fired units while adding 2,300 megawatts of new renewable resources by 2025, mostly utility-scale solar, but Drawdown Georgia's research found that fell short of what was achievable, especially on rooftop solar, where Georgia's uptake trails the national average by a wide margin.
- Several Drawdown Georgia high-impact solutions were largely missing from the 2022 IRP, including cogeneration, heat pumps, and electric vehicles, despite Georgia's status as a highly industrialized state well suited to combined heat and power.
- Cicely Garrett found that the word "equity" appeared only a few times across roughly 1,500 pages of filings, and argued that Georgia Power measures success through total resource cost rather than people-centered outcomes, making it hard to reach equity-driven results.
- Everyday Georgians can get involved in the IRP process by following PSC proceedings online, submitting public comments during scheduled hearings, meeting directly with elected commissioners, or supporting organizations already intervening in the docket.

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Blair Beasley: All right, well, I'm gonna go ahead and get us started, 'cause we just have a great program today. So welcome, everyone, to the latest Drawdown Georgia webinar in our series, Climate Solutions That Go Beyond Carbon. My name is Blair Beasley, and I'm the Director of Climate Strategies for the Ray C. Anderson Foundation. We've been proud to support Drawdown Georgia and its efforts to grow high-impact climate solutions in our state. I'm excited for this discussion about shaping Georgia's energy future — we have some amazing speakers lined up to talk about the latest Georgia Power Integrated Resource Plan, and how Drawdown Georgia climate solutions, like large-scale solar and energy efficiency, are impacted by what comes out of the Georgia Public Service Commission.

The research underpinning Drawdown Georgia identified 20 high-impact solutions for our state that, if scaled to ambitious but achievable levels, could collectively cut our state's greenhouse gas emissions in half by 2030, compared to 2005 levels. The pathway for growing many of these solutions runs in part through the IRP process and decisions made at the Public Service Commission. As we'll talk about today, how climate solutions grow in our state will impact our state's carbon footprint, as well as the communities and individuals who live here.

So, a few quick programming notes before we dive in — I'm going to briefly introduce our panel, and then, following their presentations, we'll open it up to the audience for Q&A, so please add your questions to the chat box as you think of them, and I'll do my best at the end to get to as many as possible.

First, we'll hear from Kevin Kelly. Kevin is an independent policy advisor to Southface Institute and a principal with Kirkwood and Kelly Consulting, where he assists clients with projects in natural resource conservation and utility operations. He's previously held positions at the Georgia Environmental Finance Authority, the Environmental Protection Division of Georgia, as well as the Turner Foundation.

Then we'll hear from Dr. Marilyn Brown. Dr. Brown is a Regents Professor in the School of Public Policy at Georgia Tech, where she created and co-leads the Climate and Energy Policy Lab and the Master of Sustainable Energy and Environmental Management program. She also co-directs the research program supporting Drawdown Georgia, which we're very grateful for — Dr. Brown's research focuses on the design and modeling of energy markets and carbon reduction policies and programs.

And finally, we'll hear from Cicely Garrett. Cicely is the Interim Just Energy Director at Partnership for Southern Equity. She's also a creative strategist and social entrepreneur, providing thought leadership and consulting on strategy, design thinking, racial equity, environmental justice, food sovereignty, and community wealth building. Cicely spearheaded the production of Resilient Atlanta and the transition of the Mayor's Office of Sustainability to the Office of Resilience under the 100 Resilient Cities program.

As I said, this is a really exciting group. So with that, Kevin, I'm going to turn the mic over to you to kick off our program.

Kevin Kelly: All right, thanks, Blair. Can you hear me okay, is my volume all right?

Blair Beasley: Sounds great.

Kevin Kelly: Okay, well, good afternoon, everyone. I appreciate the opportunity to talk to you for a few minutes about the Georgia Power 2022 IRP. I'm gonna start with the acronym, since I'm going to use it extensively — just so everyone keeps in mind what it stands for, it's the Integrated Resource Plan, which I'll keep calling the IRP.

I want to start with why the IRP is important, why we care. It's true the IRP only applies to one of Georgia's 95 electric utilities, but it does chart the energy future of the state's biggest electric utility, Georgia Power, which serves about two-thirds of the electricity demand in the state. In many ways, the IRP is the closest thing Georgia has to a state energy planning process, and it's an inflection point — it only happens every three years, so it's an important moment in the development of where we're going with Georgia's energy resources.

I'd also underscore that most of Georgia's solar development over the last decade has been driven by decisions in past IRPs, and this IRP will continue that trend, shaping Georgia's solar future, both in terms of utility-scale and distributed solar. Georgia Power also proposes to expand its subscription programs, an important part of the conversation about how solar gets done in the state. And finally, Georgia Power operates the largest utility-sponsored energy efficiency program in the state, and the IRP shapes the scope of that program — there's an important equity issue there too, since Georgia Power proposes to expand its low-income energy efficiency programming, and that'll be an important conversation during the 2022 IRP.

So what is the IRP, the Integrated Resource Plan? In the simplest terms, it's a 20-year plan for an investor-owned utility, in this case Georgia Power, to meet its obligation to serve its customers. The IRP starts with, and the heart of it really is, the utility's energy and demand forecast for the coming 20 years, and then the plan describes how the utility will meet that demand. To fulfill this requirement, the utility has to consider a range of questions: what will economic development look like over the next 20 years, and how will load grow as a result? What plants will the utility retire, and what new generating capacity does it need? What transmission improvements are needed to maintain reliable service across the state? And then some of the questions we'll focus on — what are the benefits of adding new renewable energy resources to the system, and how would energy efficiency or demand response help meet the forecasted load? Georgia Power is required every three years to come before the Public Service Commission to refresh this 20-year plan, so this opportunity doesn't come up again until 2025.

I want to highlight the main procedural milestones in this proceeding, which will span roughly five and a half months. The first step has already happened — the IRP docket started with Georgia Power filing its 2022 Integrated Resource Plan at the end of January. Around the same time, the Georgia Public Service Commission, or PSC, approved the procedural and scheduling order, sometimes called the PSO, which lays out the schedule for the proceeding. If you want to review the filing, it's actually pretty easy to do on the Public Service Commission's website, and I'd encourage folks to do that. It's useful to pay attention to the docket numbers — 44160 is the docket number assigned to the 2022 IRP, and 44161 is where they separately filed the demand-side management plan. You can go to the website, use the docket search engine, put in that number, and get all the documents filed in the proceeding.

Next is discovery and data requests — in any PSC docket, the Public Service Commission staff has discovery rights, the only party that does, and they submit a whole number of questions the utility is required to answer. During the 2019 IRP, staff submitted more than 700 detailed questions the company had to answer. Next is testimony pre-filing — there are three rounds of testimony, and before each one, any expert appearing during that set of hearings has to pre-file testimony, so people have a chance, usually a week or more, to look at it before the hearing. The first set of hearings is on the utility's direct testimony, in early April, three consecutive days, during which Georgia Power puts on its case. The second set of hearings, in late May, four consecutive days, is for staff and intervenors, interested stakeholders who become parties to the case, to put on their expert witnesses. And the final set, late June, two consecutive days, is for Georgia Power's rebuttal testimony.

In early July, all parties who want to may file a final brief in the proceeding. Stipulation negotiations can start any time — Georgia Power and PSC staff can enter into those, typically in the wake of the staff and intervenor hearings, though not always, and once the company and staff have hammered out a stipulation, they may invite other parties in the docket to sign on. The near-final step is that advisory staff will make a recommendation to the commission at a

regularly scheduled meeting — this is the last opportunity for parties to speak — and then there's the final decision by the commission. Parties can't speak at that point; it's the commissioners' time to decide, and they may introduce motions to amend the staff's recommendation.

Here's a timeline showing the current dates for the 2022 IRP — I won't go through everything, but it spans until late July, with the three sets of hearings and various deadlines. A couple of notes: the early part of the IRP overlaps with the 2022 legislative session, so those are concurrent, and sometimes there's interplay between what's happening at the commission and the legislature. And I want to flag that, before the IRP is even done, Georgia Power will turn around and file its 2022 rate case — these usually dovetail with each other or follow right on the heels, so that process begins just as the IRP is winding down.

So who decides the IRP? There are five elected Public Service Commissioners in Georgia, serving staggered six-year terms. They're constitutional officers, elected statewide, but there's a rule that they must live in the PSC district corresponding to the seat they hold — a slightly funny system, since they must live in a designated area, but represent all Georgians statewide. A couple of notes: two commissioners are up for election in 2022, Tim Echols and Fitz Johnson. Tim Echols because it's the end of his normal term; Fitz Johnson was recently appointed to the commission by Governor Kemp, so, having assumed the position through appointment, he has to run in the next general election — and if he's successful in 2022, he'll actually have to stand for re-election in '24, at the end of the term started by his predecessor. And Tricia Pridemore, there on the right, was recently elected chair of the PSC by her peers, and will serve in that role for the next two years.

So who gets involved in IRPs, who shows up? I'll describe the organizations that typically intervene in five groups. First is the company, which brings many people into the proceedings, including its lawyers, Troutman Pepper, its regulatory staff, and expert witnesses. Then there's the Public Service Commission staff, divided into two internal teams — the public interest advocacy staff and the advisory staff — I won't go into the distinction now, but happy to discuss it later. The staff sponsors numerous expert witnesses during the proceeding. Then there are user groups or trade associations — examples are the Georgia Industrial Group or the Georgia Association of Manufacturers, which typically represent large Georgia Power customers using a lot of electricity. As more companies focus on sustainability and embrace clean energy goals, I hope trade associations will become more robust advocates for clean energy solutions. The next group is generator groups or trade associations, typically representing third-party generators — in recent IRPs, that's mostly solar providers, though other independent power producers have shown up in past IRPs too. And the final group is advocates and non-governmental organizations — there's a range that intervene, including at least the ones you see in this box.

So we've seen the filing, and I want to give a very high-level summary — you have to understand, I'm summarizing roughly 2,000 pages of filing and nearly 100 different spreadsheets, so this is a very high-level summary. The load and energy forecast is an important first step in the IRP — over the 20-year planning horizon, from 2022 to 2041, Georgia Power projects total energy sales will grow at an average rate of 0.8% year over year, and summer and winter peak demand will increase at an average rate of 0.7% per year. Just so everyone understands, energy sales are the total megawatt-hours sold, while peak demand is that single hour on their system where they'll experience the greatest peak demand — that defines the moment they have to plan the system to meet.

On reliability planning and the target reserve margin — quickly, so people understand, the target reserve margin is the amount of energy resources, measured in capacity, the utility needs to have above and beyond that projected peak demand, helping the utility deal with uncertainty. They're planning a long-term summer reserve margin of 16.25% and a winter reserve margin of 26%. I'll mention briefly, but won't dwell on it, that winter reliability and winter peak is becoming more and more important for Georgia Power, so this issue will get a lot of discussion during the IRP. And just so everyone understands, Georgia Power's first identified capacity need, the year they don't have adequate capacity to meet demand, is 2029, driven by both summer and winter peak demands.

On the supply side, in terms of retirements, Georgia Power actually proposes to retire a number of units — 12 coal and oil-fired units over the next seven years. In addition, they're proposing to certify more than 2,300 megawatts of capacity in power purchase agreements, purchasing power from third-party providers, all from existing natural gas units in Alabama and Georgia. So significant retirements and significant new capacity coming online. On renewable resources, the company proposes procuring 2,300 megawatts of new renewable resources by 2025, over the next three years, broken down as 2,100 megawatts of utility-scale solar and 200 megawatts of distributed generation. They're proposing a number of subscription programs — I mentioned the new Clean and Renewable Energy Subscription program, or CARES, for commercial customers, and they're also proposing an income-qualified community solar program, which I think is an important step toward enhanced solar access. This is one element of the IRP that clearly aligns with Drawdown Georgia's high-impact electricity solution of more large-scale solar.

On energy efficiency, also known as demand-side management in the proceeding — the overall portfolio of seven residential and four commercial energy efficiency programs is really mostly the same as it has been, with a few alterations. They're proposing to expand income-qualified energy efficiency offerings, which I think is an important element of the filing, and this also aligns with Drawdown Georgia's high-impact solution of promoting demand response. And finally, energy storage — there's a big emphasis in this IRP on expanding storage, proposing to develop 1,000 megawatts of energy storage systems, batteries and other systems, to support integrating renewables into the system.

So that's a very high-level summary, and I've glossed over a number of issues — if you didn't hear something from me, we can talk about that in Q&A. I want to close by talking about ways to get involved in the IRP. The most basic is following the docket — all the proceedings are available through the Public Service Commission's YouTube channel, to watch live or on a recorded basis, so anyone can watch and track them. In terms of attending proceedings, things are a little different since the pandemic — they're doing a hybrid approach, and right now the people allowed in the hearing room are usually just lawyers and expert witnesses, because of pandemic restrictions, whereas it used to be open to anybody in the public.

The next thing available is making public comment — at the outset of the first two rounds of hearings, the PSC takes public comment, and those wishing to comment can sign up with PSC staff, typically getting three to five minutes to speak to commissioners. It's important to note this process changed fundamentally during the pandemic, and it's a little uncertain when it'll revert — right now, commissioners are only taking written comment, though that may change in this docket, we haven't heard yet. Those sets of hearings, again, are early April and late May, the two hearings during which the commission takes public comments. Meeting with commissioners — again, they're popularly elected constitutional officers, and anyone can contact their commissioner and request a meeting. One-on-one meetings can be a good way to

make commissioners aware of specific issues — you can contact commissioners directly on the PSC website, there's a "Meet the Commission" page with a function to request a meeting. And finally, there's intervening in the docket, becoming a formal party to the proceeding — if anyone wants to know more about that, we can talk about it later.

I think I'm all done — thank you for the opportunity to talk today, and I'll turn it back over to Blair.

Blair Beasley: Thank you, Kevin, that was great. Before we turn the mic over, I thought I'd ask one quick follow-up question — we've talked about how Georgia Power has filed their plan. I'm curious, historically, how much does that plan change over the course of the IRP process?

Kevin Kelly: That's a great question. I'd say, and I'll make up a number, at least 85% of what goes in the front end largely comes out the back end. IRPs are complicated, there's a lot going on, and there's deference to the company in understanding their own business, so most of what comes in the filing is what's approved at the end. There are certain important changes that can be made — for instance, there's a lot of debate about the scale of solar procurement, and that's actually changed significantly in past IRPs, something commissioners really focus on. There have been, in some past cases, expansions of energy efficiency programming, though that's rarer than expansion in solar. So there are some important changes, but I'd say the vast majority of what goes in the front end is what gets approved in the final proceeding.

Blair Beasley: Thank you. Marilyn, I'm going to turn the mic over to you.

Dr. Marilyn Brown: All right, that was a great overview, Kevin, thank you so much — you covered a lot that will be important context for this comparison of the treatment of Drawdown Georgia's 20 high-impact solutions in the IRP. So, let's go to the next slide. That was what Blair asked me to do — address the question of how consistent the IRP is with the aspirations documented in our various assessments of what could potentially occur in terms of drawing down carbon in Georgia.

We started our work looking at the possibilities in Georgia by creating a Sankey diagram — at Georgia Tech, we like diagrams, we like numbers. The upper left-hand number, 52.1, that's 52.1 million tons of CO₂ emitted from electricity generation in Georgia in 2017. That number's a bit smaller now, but it's still the second-largest source of CO₂, maybe 37 or 38% of the total today, so we can't solve the greenhouse gas problem in Georgia without decarbonizing our electricity sector.

Here's our roll-up of the 20 high-impact solutions in terms of their ability to reduce emissions over the 2017 to 2030 period — remember, we were looking at high-impact solutions targeting significant reductions by 2030, not new technologies that might play out mid-century, we really wanted to look at near-term actions. Other than the carbon sinks shown along the top, worth about 48 million tons of CO₂, very important to the state, the 20 solutions are shown in that colorful rainbow beneath the carbon sinks. The first icon is utility-scale or large-scale solar. If I'd wanted to fit in everything I'm covering today, there'd be four more of them in pink, and one in yellow, retrofitting, and electric vehicles might have been on this chart too, if I'd had room to squeeze in all the icons.

So how might the IRP move the needle on climate change, especially with respect to these seven solutions — I keep wavering between six and seven, because I won't get to talk about electric vehicles, since they're not in the IRP, so we can save time by just erasing that topic

altogether. Here are the five topics, the five solutions that directly address the electricity generation opportunity.

I've piled some statistics here — again, the 2022 IRP calls for 2,100 megawatts of utility-scale solar, by far the biggest opportunity in the IRP for reducing Georgia's CO2 emissions. As Kevin mentioned, the 2,100 megawatts will be subscribed to by consumers, shown here in gray, using the Clean and Renewable Energy Subscription Program, modeled after the current CARES program. I also want to highlight — it includes an income-qualified community solar pilot, with 75% discounted blocks of solar for income-qualified consumers, which is very notable.

So how does this compare to what we thought could be delivered if Drawdown Georgia's achievable scenario were realized through the IRP? The IRP calls for something like 4.1 gigawatts of utility-scale solar by 2030 — I have to qualify that I'm not entirely sure of every date and number, it might be 2035. Our goal was that 5.4 gigawatts of new utility-scale solar could be in place by 2030, compared to the Department of Energy's modeling forecast of 2.6. So clearly, the Georgia Power plan exceeds the Energy Information Administration's forecast, but falls short of what we thought was achievable. What we modeled as achievable would have delivered 11.2 million tons of CO2 reduction by 2030, so we're going to fall short, but still achieve a lot in the solar sphere with the IRP.

I wanted to highlight that, with respect to rooftop solar, the IRP falls way short of what we estimated was possible for Georgia — the plan calls for 200 megawatts of distributed generation. I want to show you this chart comparing how Georgia is doing on utility-scale and rooftop solar relative to the United States. In 2019, Georgia generated 9% of its electricity from renewables, while the U.S. average was 18%, so we fall short on renewables overall — our big renewables are hydro, biomass, and increasingly solar. Looking at the yellow bars, in the United States, 14.9% of renewables are from solar; in Georgia, 18.9% of our renewables are from solar, so we're solar-heavy, which is great, we have a resource other states don't. But comparing the treatment of rooftop solar — in the United States, 5.1% of that 14.9% is from rooftop solar, while in Georgia, only 0.3% of our 18.9% is from rooftop solar. So we're way behind on meeting anything close to what could be achieved by putting solar panels on our rooftops.

All this solar ultimately is going to cause coal to be retired, and I wanted to flag a map of Georgia and Alabama, since we need to consider both states, because we do get significant electricity from generation in Alabama too. This uses our Drawdown tracker, which you can learn more about tomorrow, on a webinar starting at 3:00 — maybe Blair could drop a note on that in the chat. You can see Plant Scherer pointed to with a black arrow, and above Atlanta you see Plant Bowen. Covering Atlanta you see Plant McDonough, a big gas plant, and to the northwest of it is Bowen. But what you don't often think about is that, southeast of Birmingham in Alabama, there's a plant owned by Georgia Power that provides significant coal to us, as well as Plant Miller, the big brown circle, another coal plant outside Birmingham — I don't believe we import from there directly, but just highlighting it.

Here's where our rooftop solar potential resides — of course, it's where populations are, and to date it's significantly moved forward in the several large cities that have solarized projects. When we assessed potential for Drawdown Georgia, we looked at what the current market might deliver, what's achievable, and what's technically possible. The technical potential for rooftop solar is to reduce 12 million tons of CO2 if every rooftop with sun exposure were covered — obviously not viable, but we're not going to achieve even a small fraction of that with the IRP. Here's some of how we modeled potential savings if individuals were provided with net

metering — however, net metering is not part of the IRP. The IRP does not support the resale of excess electricity from customer sites back to the utility at retail rate.

There are a couple other solutions, besides electric vehicles, overlooked in the IRP. One is cogeneration — I have to confess, I only looked at the main document and the technical study of options, and cogeneration, sometimes known as combined heat and power, didn't appear anywhere in my search functions. This is a wonderful option for Georgia — we're a highly industrialized state, and we produce a lot of biomass, which can co-produce electricity, generating excess electricity for uses like military purposes, in the case of Albany Green Energy, as well as sending it back to Georgia Power, which buys the excess from that biomass plant. It can provide a clean platform for integrating green gas, green hydrogen, renewable natural gas, and has an efficiency averaging between 85 and 90%, about 20% more efficient than a state-of-the-art natural gas plant — so just on efficiency grounds alone, this is a winning technology, and I hope it'll be reconsidered. We have a lot of sites where cogeneration could occur — these are the locations of 41 current combined heat and power facilities in Georgia. And, one of the ways I remember what we estimated as our carbon reduction opportunities, can everyone see our cards — we have a Drawdown game — utility-scale solar is the winning card, then retrofitting, and cogeneration is number eight in terms of what it can deliver and at what price, so it's there, we don't want to overlook it.

Now, landfill methane is mentioned in the IRP — the IRP promises 480 megawatts of biomass and landfill gas by the end of 2024, up from 390 currently, so a very small uptick, another underemphasized opportunity, I think. Capped landfills produce methane gas through anaerobic digestion, which can be piped in to create either renewable natural gas or electricity. We've assessed where landfill gas plants are located and their condition — across Georgia, publicly-owned landfills are often not capped, and most don't have any kind of landfill gas collection system, so it seems like an opportunity we should take advantage of, and the EPA agrees there's an advantage to doing that in Georgia. We have some high-potential locations for collecting landfill gas, preventing it from going into the atmosphere and polluting local communities, which, by the way, do tend to be resource-constrained — that's where you find landfills.

Demand response, I'm pleased to say, is prioritized to some extent in the IRP — I think it could be prioritized more, but a number of programs will continue, like the residential thermostat demand response program, and there are a few new tariffs, the demand response credit tariff and the resilience asset service tariff, that I haven't had a chance to dig deep into, but like the sound of and hope to get familiar with. This is a great way to help integrate renewables, combining renewables with demand response, so when you need to bridge the sunny hours to the evening, a little demand response could help. Here's how it works — programmable thermostat, garage, lithium-ion batteries, probably an EV charger, though again, not mentioned in this IRP, and a heat pump water heater, all controlled locally, in this case in a subdivision of Georgia Power's. Solar on the rooftop, all these electric devices in these houses — it's really a sight to be seen, the Pulte homes, I hope you get a chance to view them, we need more of those. This was a Georgia Power pilot.

Buildings and materials — now we're into a new section of Drawdown Georgia's solutions, diverting from electricity generation to how we use electricity, and I wanted to highlight the retrofitting opportunity, which Dan Matisoff led for us. The IRP proposes continuing some demand-side management programs, decertifying a couple, extending some, and certifying one new residential program, the Income-Qualified Residential Investment for Savings Energy, the

RISE pilot. So there's some expansion, but it looks very modest to me. I found an interesting factoid — how Georgia Power compares in terms of savings. In 2019, savings as a percent of sales for Georgia Power were only half a percent, compared to the U.S. average of 1%. So we're behind — we're starting from an insufficient base of support for energy efficiency programs, and we have some of the most inefficient buildings in the country, inefficient homes, some of the biggest energy burden rates, and the opportunity is here to do so much more.

We've also done some geospatial modeling of where we find these solutions — in this case, where heat pumps are, because as we try to electrify more of our homes, buildings, and transportation, heat pumps are going to rise to the top as popular solutions, offering great efficiency and cost-effectiveness. But they're not operating in large numbers in Georgia compared to, say, Tennessee, where I was a regulator of TVA for eight years, and we pushed heat pumps hard. Kevin, you may have heard John Wilson talk about whether Georgia Power is summer-peaking or winter-peaking — Georgia Power is summer-peaking, because it doesn't use a lot of heat pumps in winter, while Tennessee is winter-peaking, because that's when everybody turns their heat pump on. For some reason, our state agencies and utilities haven't been pushing heat pumps, and yet they're an important technology going forward. Heat pumps are not in the IRP — not mentioned anywhere in my scan of it.

So, that's my scan of how the IRP maps onto our 20 high-impact solutions list. Thank you.

Blair Beasley: Well, thank you, Dr. Brown, that was really helpful. One of the things that kind of underpinned your conversation is that Georgia Power is proposing to close a bunch of its coal units — I'm curious, as you look at both their proposal and your research, how would you like to see them replace that capacity?

Dr. Marilyn Brown: One thing I'm glad about is that they're not proposing to build any new natural gas plants — they are planning to procure more natural gas from existing plants, which is probably necessary to some extent, but I think is potentially overdone in the IRP proposal. I'd prefer to see more demand response and more energy efficiency — we saw a half a percent per year opportunity where we could reduce demand, relative to what's happening in other states. I think we need to build a virtual power plant out of energy efficiency and demand response — that's what we did at TVA, we talked about virtual power plants that can be built with different attributes, just like a coal plant or a gas plant. So that's what I'd hope for, more of those.

Blair Beasley: Well, thank you. Cicely, I'm going to turn the floor over to you.

Cicely Garrett: Thank you for that — tough act to follow, Dr. Brown always has really good information. So, I was asked today to come on behalf of Partnership for Southern Equity and talk about some of the equity issues in the IRP. Just to give people a little background, since we've used so many acronyms — I'm from Partnership for Southern Equity, PSE, not to be confused with PSC, the Public Service Commission, we are very different entities. Partnership for Southern Equity advances policies and institutional actions that promote racial equity and shared prosperity and growth, in both metro Atlanta and the American South. Primarily, when it comes to our Just Energy portfolio, we work with Black people, communities of color, marginalized and low-wealth communities, basically the global majority, to understand the sourcing and commodification of power generation, and to take action in support of equity-centered energy, utility, and climate programs and policies. So that's primarily our interest in the Integrated Resource Plan — it affects the communities that are the focus of our work and

beyond, and because it greatly affects those communities, we feel we should have a role and an interest in advocating for changes in the IRP.

So, I was asked to talk about equity — if you go through the IRP, the word "equity" actually only appears, I think, three times, might be two, in the whole 1,500 pages. So it's kind of hard to have a focus and priority on equity if you don't actually use the word through several pages of the document. And the use of the word doesn't even appear in the context most of us would use it — it's used as an explanation for one of their measurements assessing equity in some of the interventions and programs offered within the IRP, so it's only mentioned in context of explaining that definition, not really in layman's terms or usage throughout the document. So that gives you a perspective of where this is coming from.

What they do speak a lot about is energy efficiency — you'll find a lot of this in chapter eight, what Kevin mentioned they'll affectionately describe as their demand-side strategy. In this section, they talk about demand-side management being an important part of their resource mix — a combination of demand response programs, energy efficiency programs, policies, pricing tariffs, and other initiatives, all part of one of their main strategies. As Kevin mentioned, they've offered to extend most of their core programs, as well as some expansion in income-qualified programs. To define income-qualified — for most of the programs, your household income has to be 200% or less of the U.S. federal poverty line. All these programs currently exist, you can find more about them on their website. I highlighted the programs specific to income-qualified populations in green — the other energy efficiency programs are more broadly targeted. The first is education and awareness around energy efficiency in K-through-12, the second is more general public-facing, and then there are some income-specific programs — the Hope Works program is income-qualified and also for seniors. So even out of the full list of programs, only four are specific to those who are income-qualified, the population most likely to be energy-burdened, hence the need for us to talk about equity issues that could be gained or lost with the IRP.

So while I do think it's good they're proposing to expand some programs, expansion is relative — one program they're talking about expanding, or extending, is the RISE pilot. The original program was to reach 500 households for the whole state of Georgia, so how much does expansion really mean, and was 500 even a good place to start, thinking about the full population of Georgians who'd qualify? And how effective are these current programs at reaching their target populations? These are all questions I think need to be answered in greater detail, for us to have greater satisfaction about how the IRP aligns with, and where equity shows up in, our day-to-day lives.

I think there are opportunities going forward for the IRP. One is a movement to prioritize people over profits — I'm not saying, as a for-profit business, they should totally throw the baby out with the bathwater, but it's really hard to reach a place of satisfaction with equity if there isn't some centering of people. What you measure is what matters, and all the ways they measure things like energy efficiency and other indicators don't specifically measure equity, don't talk about it in terms of people — they have what they call total resource cost, TRC in the document, that's how they measure success. If you're measuring success based on that, and not people, it's really hard to ever land somewhere that greatly benefits the public. So I think there's an opportunity there, and also to think about how effective programs are relative to the population they're intended to benefit — a lot of the programs, even on the website, are primarily made for residential single-family homeowners, but a lot of the most energy-burdened people are renters, or live in multifamily housing, so how do we make sure incentives and programs benefit renters

and multifamily residents too, and expand income-qualified programs for them, as part of energy efficiency and a move toward equity.

I also think, if it matters, you need to dedicate adequate resources to income-specific energy efficiency programs, as well as to community partners. I don't think Georgia Power needs to be all things to all people — there are lots of us on the outside who could help make that translation, lots of great ideas, like the 20-plus slides Dr. Brown just gave you on how things could be better. So I don't think they should be making it all up themselves, but before producing this 1,500-page document every three years, why not ask us, and actively include some of us in shaping the programs and policies that come from it, those who know best from the outside, and the people most affected by it.

One thing I think is a barrier, and Kevin mentioned this — there are hundreds of pages of charts and words that took all of us, Dr. Brown has a PhD, I don't, a huge amount of time to comb through, for things that affect the whole population. I think the data and information should be presented in a more palatable format — information that can be interpreted, or at least understood and accessed, by everyone. Just putting it on the website as a PDF you can search for doesn't make it accessible, or therefore useful, to everyone it affects. So I definitely think there needs to be a move in how information is presented, conveyed, described, if it's intended for all of us to participate in this process, especially those most affected. If you're really going to get at the heart of equity, I shouldn't have to be on this webinar to speak on behalf of others — people should be able to speak and advocate for what they need for themselves, and there should be a greater connection between that and how information is presented, even if it's important — I don't know that it needs to require this level of expertise to understand something that affects such a large part of the population.

So these are what I see as opportunities for the IRP going forward. As Kevin said, a good portion of it may not shift, but I don't think that means we accept that and leave — I think we keep pushing, even for incremental change, and eventually it leads to larger-scale change. But I think there are definitely opportunities that don't require a lot to ask, but that would make tremendous strides in what the rest of us would like to see from the outside.

Blair Beasley: Thank you, Cicely. Before we turn to open Q&A, we're getting lots of questions in the chat about people wanting to get involved — what are the pathways and avenues, and what are ways to do that effectively?

Cicely Garrett: Yeah, I mean, I think for one, making this a more commonplace conversation — I think it took a while for climate change and other issues to become mainstream, and I think we keep pushing this forward, because most people, regardless of socioeconomic status or background, aren't aware of the IRP, or how it affects them, or how to get involved. So I think people who are aware invite others into the conversation — most people aren't aware of the Public Service Commission, and how they can vote for who sits in that office and helps influence these decisions. Almost all of us are Georgia Power customers, so ways for people to amplify the message and make others aware is a way to get involved. Also, on the links I dropped in the chat when Kevin was talking, you can see the docket on the Public Service Commission's website, and it lists which other organizations are intervening on different parts of the IRP — if you happen to know or support those organizations, get involved with one that's intervening, and see how you could best support their work. And continue to work in those ways, advocate, and leverage whatever social capital you have to get the word out about the IRP.

Blair Beasley: Great, I'm gonna try to get to some of the questions we've received through the Q&A box — if others come to mind, feel free to add them. Kevin, I'll kick it off with an overall question about who the PSC actually regulates — there were questions about how EMCs are involved, as well as gas utilities like Atlanta Gas Light.

Kevin Kelly: Sure — the role of the Public Service Commission is to regulate investor-owned utilities, both in the electric and gas space. There's only one investor-owned electric utility in the state, Georgia Power — some people may remember Savannah Electric, a second one that was subsumed into Georgia Power, so just one electric investor-owned utility now. On the gas side, it's a little different — Atlanta Gas Light is the regulated provider in a deregulated market, so they are regulated. They're the pipes-only company that delivers gas up to the meter at your house, and then there's a series of marketers who sell gas to individuals in the deregulated portions of the state — the marketers are also regulated, but differently. Atlanta Gas Light is a fully regulated investor-owned utility on the gas side, and there's one other, used to be Atmos Gas, now I believe Liberty Gas, serving Gainesville and maybe Columbus — so one other investor-owned gas utility. They also have other responsibilities, like regulating underground facilities protection statewide — call-before-you-dig rules, and any violations of GUHPA, the law governing that.

Going back to electric utilities — there are 94 other utilities in the state, electric membership cooperatives, and the cities that serve as utilities, often called munis. They're not regulated, except in very small ways, by the Public Service Commission. The PSC does regulate all territorial disputes, no matter who's involved, EMC, muni, or Georgia Power, and on the gas side, between a city and Atlanta Gas Light, over who serves a particular area — the PSC has jurisdiction over that. But they don't regulate rates for EMCs, and they don't run an integrated resource planning process for EMCs or munis. So if you're an EMC member, the entity to appeal to for how the EMC is operated is the board of directors — you're a member of that company, and can attend those meetings. On the city side, it would be your city commission that really regulates the utility — the utility might have an associated authority, which should also hold public meetings.

Blair Beasley: Thank you, that's really helpful. We're gonna dig into questions about two specific technologies — first rooftop solar, then heat pumps. We had a few questions on rooftop solar — Marilyn, maybe you can start, about why uptake is so low, since you showed how little of our solar generation comes from rooftop solar. And then, for either you or Kevin, if net metering isn't covered in the IRP, where can people get involved in that process, when will it come up as an issue?

Dr. Marilyn Brown: All right — yep, we don't have a lot of rooftop solar in Georgia, unlike, as I showed, the rest of the U.S., particularly California, the Southwest, more in Florida. But there's a movement causing some retrenchment even in states that have been leaders in rooftop solar — the past few months have seen a lot of reconsideration by regulators of net metering and other programs that have promoted rooftop solar, and the argument has been one of equity. To offer a net metering option, the utility argues it has to raise rates to provide the extra revenue to those with solar on their rooftop, to cover the net metering, and that extra revenue has to come from somewhere, so rates rise, and everyone pays the differential. So the people paying the differential are all ratepayers, but those benefiting are only those with solar rooftops, and that's not everybody, that's the affluent. So there's an equity concern, and as a result, Georgia Power is proposing to pull the plug on net metering, and not continue or expand the one pilot program they had for the first 5,000 rooftops that asked for net metering. That ended, I think, last

summer, maybe six months ago or so — they hit the 5,000 mark, and it came to an end. So it's interesting that equity is used as the reason not to do the environmentally best thing. There's a lot of research on the value of solar — if it's displacing fossil fuels, it offers a lot of value in terms of clean air, and we don't have the water pollution that comes from a lot of power plants. That's not factored into the benefits solar can provide, so taking a very narrow view of benefits and an expanded concern for equity has led, from Florida to California to New England, to reconsideration of net metering. I fear it's going to dial back in many places over the next while.

Blair Beasley: So, Kevin or Cicely, where will the net metering conversation emerge, if anywhere, when it comes to the IRP and the Public Service Commission?

Kevin Kelly: I can respond to that — just so everybody's on board, historically Georgia Power used to do what was called instantaneous netting. When you sold your excess power back to the grid, they'd pay you avoided cost — let's call it 3 cents a kilowatt-hour, even though you were buying retail electricity from the company at roughly an average of 13 cents. In the 2019 rate case, the Public Service Commission started the pilot Marilyn mentioned, with the 5,000-customer cap, and under that, they'd net it out at the end of the month — so, at least up to the amount you used, the energy you exported to the grid, you got it at retail value, that 13-cent value, instead of the 3-cent value. And as Marilyn explained, that pilot hit its cap very quickly, maybe more quickly than most people anticipated. It's the position of the commissioners that it's not an IRP issue, it's a rate case issue — Georgia Power has said, very briefly in the IRP, that they don't support an expansion of the net metering program, but that's not really up for debate, at least by their account or the commissioners' account, in the IRP — it'll be taken up in the 2022 rate case.

Blair Beasley: Great, thank you. There was a question responding to Marilyn's slide —

Kevin Kelly: Blair, could I add one thing? Sorry.

Blair Beasley: Oh, sure.

Kevin Kelly: I do want to point out, in the chat, there are a couple mentions — if people are interested in the net metering issue, there's actually a bill active in the legislature right now, you can see Henry Slack's comment on HB 1083. SB 299 was introduced last session, I believe it's being reintroduced right now, so there'll be two bills in the legislature this session addressing net metering. I'd certainly encourage folks to get involved, contact their legislators, and understand what's happening on the legislative front related to net metering.

Blair Beasley: Great, thank you — that answers some questions about the interplay between the legislative session, so thanks for addressing that. There was a question building off Marilyn's slide, about heat pumps — it says, Southern Company owns both Georgia Power and Georgia Natural Gas, so what's their business motivation to promote heat pumps? I don't know who wants to take that one.

Dr. Marilyn Brown: Oh, that's one of my favorite topics, I'll jump in first. Yes, exactly, what's their motivation — that's not the justification for helping provide least-cost energy services, which I believe they're required to do, right, choose the least-cost method of meeting demand. The least-cost method could involve heat pumps, which might jeopardize some natural gas sales, and I think there's probably some trade-off being debated at high levels of corporate leadership in Georgia. At TVA, it was kind of a no-brainer — TVA wanted heat pumps, because that would ensure an electric advantage, since some customers who might have gone to gas water heaters

or gas heating systems could be won over by a credit or incentive for heat pumps. TVA was promoting electrification — I don't think Georgia Power is promoting out-and-out electrification, I don't think that's in their planning specifications.

Blair Beasley: We have time for one more question before we hit our 3:15 mark, and I'm going to lob this over to Cicely — I know you answered it in the Q&A, but I think it's really helpful. Someone flagged that this is really dense information, not always easily accessible — how do you recommend people stay engaged and stay informed?

Cicely Garrett: Yeah, so myself and Kevin have been involved, on behalf of Southface and Vote Solar, in hosting a six-part series on the Integrated Resource Plan, meant to be a training to help bring more people into the fold and be prepared for when it comes out. Our last part of the series is next month, March 9th, Wednesday, 3:30 to 5:00 — I think someone, if not myself, will drop the link in the chat in a moment. It's open to anyone who wants to attend, and you can also go back, if you sign up, and see the previous sessions. Our goal was to make it a more palatable process, and now that the document is out, part of our next session will go over and highlight some important things in it. I also think some of our partners, like Southface and others, will likely produce a CliffsNotes version, for those of us old enough to remember that, just a high-level thing, so you don't have to get through the whole 1,500 pages. But ultimately, those are Band-Aids — in the long term, I think Georgia Power and others like it should have an obligation to the public to produce a document that's palatable to the public, similar to a newspaper, that people can understand and get into, with a deeper document for those of us who want to get into all the numbers. But people should at least be able to understand what's happening with them, what's going on, and I do think that's a charge, not just for Georgia Power, but for anything in this vein — how do you make sure, if it's affecting large groups of people, that those groups can interpret and take in the information.

Blair Beasley: Thank you, and with that, I'm going to close us out. In addition to saying thank you, thank you to our amazing panelists for their presentations and for sharing all your knowledge with us today, I want to thank everyone who joined us. Before I close, I also want to share that we'll have another Drawdown Georgia webinar tomorrow — back-to-back opportunities to engage and learn with us. Tomorrow we'll be joined by experts from Georgia Tech, including Dr. Brown, as well as the University of Georgia, to share about the new Drawdown Georgia Greenhouse Gas Emissions Tracker that's now live on the Drawdown Georgia website. I just got pinged a minute ago that the platform hosting it was temporarily down, so if you click and it doesn't come up, click again in about five minutes — but it's an exciting new resource for our state, so I hope you'll join us again tomorrow to learn more. Thank you again for joining us today.

Dr. Marilyn Brown: Thank you, Blair. Thank you all, thank you all — great to see you.