

**Regional Energy Resource Council
Regional Resource Stewardship Council**

Joint Meeting

January 18, 2024

Virtual

8:30 a.m. Eastern

The Tennessee Valley Authority (TVA) Regional Energy Resource Council (RERC) and Regional Resource Stewardship Council (RRSC) convened a joint meeting on Thursday, January 18, 2024. The meeting was held virtually, after the in-person meeting was canceled due to a snowstorm in Knoxville, Tennessee, where the meeting was scheduled to take place. Meeting presentations are available at www.tva.gov/merc and www.tva.gov/rrsc.

RERC Council members

Jan Berry, Marquita Bradshaw, Monte Cooper, Erin Gill (Chair), Rebecca Goodman, Chelsea Jenkins, Candy Johnson, Pete Mattheis, Dan Miller, Doug Peters, Boyd Pettit, Erik Schmidt, Alexa Voytek and Julie Woosley.

RRSC Council members

RaeLynn Butler, Keith Carnahan, Richard Holland, Cline Jones, Kim Klinker, Whitney Lipscomb, Tom Littlepage, Ron Robertson, Danette Scudder, Bob Sneed, Stacey White and Randy Wiggins.

Designated Federal Officer for Joint Session: Melanie Farrell

Designated Federal Officer for RERC Breakout: Melanie Farrell

Designated Federal Officer for RRSC Breakout: Althea Jones

Facilitator: Jo Anne Lavender

- Appendix A – TVA staff and stakeholders who attended the meeting
- Appendix B – Agenda

Purpose

The purpose of the meeting was to present information on the Valley Pathways Study and to obtain RERC and RRSC Advice Statements related to the Valley Pathways Study.

1. Welcome and Introductions

- A. Melanie Farrell welcomed everyone to the meeting and explained that the Councils' Advice Statements will be given to the TVA Board of Directors, which takes the advice from the Councils very seriously. The Board is committed to engaging and listening to stakeholders. The Council members represent diverse viewpoints. Farrell said the discussion will focus on the Valley Pathways Study, which is a partnership with the University of Tennessee Baker School of Public Policy and Public Affairs and other stakeholders.
- B. Erin Gill, RERC Chair, welcomed everyone and said she was looking forward to engaging with both Councils on the Valley Pathways Study and having an informative discussion on how to think about energy resources in the Valley.
- C. Tom Littlepage, RRSC Chair, thanked everyone for taking the time to meet and said he looked forward to the discussion.

2. Designated Federal Officer Briefing — Melanie Farrell

(Presentation can be found at www.tva.gov/merc and www.tva.gov/rrsc)

Melanie Farrell highlighted TVA's relationship with the two Federal Advisory Councils – the RERC and the RRSC. The RRSC was created in 1999 and focuses on TVA's stewardship of natural resources within the region. The RERC was created in 2013 and focuses on helping TVA position itself to meet the Valley's energy needs effectively and efficiently.

She noted that TVA has embarked on its next Integrated Resource Plan (IRP), a comprehensive study that evaluates possible futures TVA could find itself operating in between now and 2050 and the business strategies it could use to meet energy demands. After the draft IRP and accompanying Environmental Impact Statement publish, there will be a comment period during which TVA seeks public input.

Farrell explained that TVA hit historic energy demand peaks this week, and she invited Greg Henrich, vice president, TVA Transmission Operations & Power Supply, to describe the ways TVA prepared for – and met – the energy demand.

Henrich said that on January 17, 2024, TVA hit its highest recorded peak in TVA history – hitting 34,524 megawatts at 8 a.m. CT. That peak broke the TVA record by more than 1,000 megawatts. Henrich described highlights of the work to meet the demand, including that:

- It was an agency-wide effort, with all TVA generating units online, including two new fast-start natural gas units that added about 1,400 megawatts, and contracted assets that were lined up ahead of the storm;
- TVA saw outstanding performance from its fleet, illustrating that the mitigation efforts developed after Winter Storm Elliott in December 2022 improved performance;
- The reduction of power use through the Interruptible Power demand response program lowered the peak by about 800 megawatts;
- Strategic, proactive communications went out to TVA generating sites the week before the storm to alert them to the anticipated power needs;
- TVA did a public appeal through social media and other communications to increase public awareness of the importance of conserving energy during the storm;
- TVA was able to maintain operating reserves and did not need to escalate into emergency procedures.

An RRSC member complimented TVA from a local power company (LPC) standpoint for giving the LPCs information and load forecasts that helped them plan. He complimented TVA for taking steps to move forward after Winter Storm Elliott, and he said the public appeal was impactful. Henrich said TVA could not have done it without its local power company partners.

3. Valley Pathways Study (Presentation can be found at www.tva.gov/rerc and www.tva.gov/rrsc)
— **Laura Duncan, TVA Senior Project Manager, Environment and Energy Policy, and Dr. Charles Sims, TVA Distinguished Professor of Energy & Environment Policy, University of Tennessee Baker School of Public Policy and Public Affairs**

TVA and the University of Tennessee Baker School of Public Policy & Public Affairs kicked off the Valley Pathways Study in February 2023. The objective of the study was to quantify sources of greenhouse gas (GHG) emissions from all sectors of the economy across the Tennessee Valley region and to evaluate pathways for the region to reach net-zero GHG emissions by 2050. Technical modeling was executed in parallel with stakeholder engagement, driving support and ownership of the study and its results across all economic sectors and diverse perspectives.

A stakeholder group with representatives from 24 organizations in different sectors of the economy met monthly with TVA, the Baker School, Guidehouse and VEIC. The collaboration provided a shared understanding of ways that organizations across the region can work together toward emission reductions.

Charles Sims reviewed how the Valley Pathways Study was initiated; the natural alignment between TVA and the Baker School, given their similar missions; the key topics discussed; the stakeholders involved; and the plans for continuing to expand stakeholder engagement will continue to branch out.

A pathways study uses scenario-based analysis to compare several possible visions of the future to help determine the timing, scale and effects of achieving greenhouse gas targets. The Valley Pathways Study evaluated what all economic sectors can do to reduce carbon emissions and grow the economy in the region. The findings will help provide the region with critical information to weigh options in future planning and actions across the economy.

Duncan noted that key insights from the study related to the GHG 2019 baseline for the region include:

- The region produces 200 million metric tons of carbon dioxide equivalent (MMR_{CO2e}), which is about 3% of U.S. GHG emissions. The Tennessee Valley is home to about 10 million people, or about 3% of the U.S. population.
- Transportation is, by far, the largest source of greenhouse gas emissions in the Valley.
- Emissions by Buildings and Industry look small, but these sectors demand nearly 100% of the electricity that is generated for the Valley.
- Agriculture represents only energy consumed; methane emissions related to agriculture are in non-Energy alongside refrigerants and flame retardants.

Sims reviewed the development of pathways scenarios, or “futures,” the region could find itself in. He explained that the initial pathways scenarios focused on three critical strategies, often referred to as “pillars of decarbonization” – efficiency, electrification and low-carbon fuels. A fourth pathway tests the synergies of combining those levers. The scenarios are Community Resiliency, Accelerated Electrification, Low-Carbon Breakthrough and a Combined Scenario that takes an “all of the above” approach that matches decarbonization strategies to their most impactful sectors.

Duncan discussed the Valley Pathways Study’s preliminary findings. She noted that between 2005 and 2019, the region achieved a 30% reduction in GHG emissions throughout the Valley, including a more than 50% reduction in the electricity sector as well as in the agriculture and non-energy sector. She explained that to achieve net-zero, the Valley region must reduce GHG emissions by 70 to 80% compared to 2005, then the rest of the emissions would need to be net out via carbon sequestration. In the study, there is a placeholder range for the electricity sector given the 2024 IRP is underway, the high end of the range of electricity emissions is based on the 2019 IRP, and the low end is based on if the electricity sector achieved net-zero. The study’s preliminary findings demonstrate that all of the sectors will need to work together to achieve net-zero.

Duncan highlighted critical actions and transitions that will be core building blocks for a net-zero economy in five key areas:

- **Electric Vehicles.** Electrifying light-duty vehicles is the single larger GHG reduction opportunity in the Valley.
- **Efficient Homes.** High-efficiency heat pumps can abate GHGs, reduce utility bills and relieve stress on the grid.
- **Low-Carbon Fuels.** Research and investments into low-carbon fuels can unlock deep reductions for aviation, trucks and industry.
- **2050-Ready Communities.** Integrated planning can drive sustainable growth and enable low-carbon transportation.
- **Education & Innovation.** Support every facet of a net-zero economy, from workforce training to R&D for carbon capture.

Sims said the work completed by the stakeholder group is just the beginning, and that next steps include the sectors working together on coordination and planning; policies and programs; dialogue and education; additional studies, tracking and reporting; and key resources. The preliminary findings report will be published in February, and a webinar will be held to share information with the public.

QUESTIONS/ANSWERS

A Council member asked how this work is different from TVA's Integrated Resource Plan and its net-zero aspiration. Duncan explained that TVA's Integrated Resource Plan is looking at the region's electricity needs through 2050 and how TVA can continue to provide affordable, reliable, resilient and cleaner electricity through that time period. TVA also has the aspiration for the electricity sector to achieve net-zero by 2050. The Valley Pathways Study is looking across all sectors of the economy and asking what it would take to achieve net-zero in the region. Sims noted that locations across the region and different sectors of the economy may take different paths to achieve net-zero. The Valley Pathways Study highlights coordination between the pathways.

Other questions and answers included:

- Did you include solid waste in the analysis?
 - Duncan: Yes. It is included in the non-energy sector.
- Will the assumptions be detailed in the preliminary report?
 - Duncan: Yes. There are references to the sources we used to develop the baseline.
- Does the methodology prevent you from having statewide numbers?
 - Duncan: We have the numbers down to a county level. You could look at the statewide numbers as well.
- How does this tie into the Valley Vision 2035 effort?
 - Farrell: Valley Pathways is looking outward across industry and other sectors. Valley Vision 2035 is honing in on TVA's relationship with local power companies and how to evolve and support those customers' needs.

- In the GHG emissions for the Valley, your pie chart says that 7% of the region's emissions are from residential and commercial buildings and that 14% is from industry. How would those numbers be affected if the region were carbon free?
 - Duncan: At a high level, if the region is carbon free, it would reduce total emissions across the board, and those numbers would be part of the bigger picture of reduced emissions.
- How will the Valley Pathways Study inform the Integrated Resource Plan?
 - Duncan: Information from the Valley Pathways Study can help inform the Integrated Resource Plan. For example, changes in one economic sector could cause increased or decreased electricity demand. That is information that could help the IRP.
- From an environmental justice standpoint, it would be good to help people understand what is included before the final report is published. It is important for transparency and accountability and building trust, especially for EJ communities that carry the burden of energy poverty and pollution.
 - Duncan: We are going to release preliminary findings next month. The stakeholders would like to share it with their groups and gather feedback, but that is just the beginning. We will have a feedback process and collect that feedback, and we will put that into a more final report in the future.
- Does the study analyze what the path would look like if carbon capture and sequestration is not available?
 - Sims: We considered several different scenarios associated with those technologies. We don't know what those technologies are going to look like. The purpose of the pathway is to say, if I am very, very ambitious about those technologies, here is how much emission reductions we need to hit net-zero. That helps you plug in technology assumptions and let them tell you what gap you need to fill in terms of emissions reductions elsewhere.
- What does the report's analysis of carbon capture and sequestration look like?
 - Sims: What we show is, with this amount of net emissions left, this is how much you'd need to sequester. The report shows best guesses on how we would make up the gap. The assumptions and the methodology will be on the Baker School website, and it will have a point of contact as well.
- Can you help us pinpoint emissions to natural gas that is used with buildings? Where do the emissions get accounted for?
 - Duncan: For any gas used in building heating or industrial processes, greenhouse gases are captured in Buildings and Industry. Gas from electricity is pulled out separately. Gas leaks are under Non-Energy and Refrigerants.
- It seems like a lot is consumer-driven adoption in transportation. As companies electrify their fleets, a barrier will be battery technology and recycling. They're left with batteries to dispose of or be recycled. As those challenges identified?
 - Duncan: I don't believe we did life cycle analysis, like batteries from electric vehicles.
 - Sims: I agree that a lot of the challenges are consumer-related. The challenges for consumers differ. We are thinking through those challenges. I agree that there is a lot of consumer-driven work. The Baker School can help. That is a hallmark of our research, and we can blend with what TVA is doing.
- Related to sustainability, are there bleed-off effects that we can foresee?
 - Sims: Related to customer-driven adoption, we are looking for unintentional consequences.

- It looks like there are close comparisons between the scenarios and strategies in the IRP and the pathways to net-zero in the Valley Pathways Study.
 - Sims: The scenarios are different, although there will be overlap. The projects have different scopes and different objectives. If you are just looking at IRP, they might look similar, but the study's assumptions are different than the IRP. We want to keep them similar so they can talk to one another, but we don't want them to be exactly like the IRP.
 - Duncan: The Valley Pathways Study is saying this is what could happen, and these are things we can do now to get the economy to net-zero. The IRP is looking at what may happen and what it would take for TVA to meet the region's electricity demands.
- There are things like electric vehicles that are cost prohibitive for people to implement in my community. What about things like public transportation and action items that include better transportation across the state to reduce transportation and get us close to net-zero? Also, how do we increase and expand energy efficiency programs that help low-income and middle-income families? How can we create a region where the cost is not prohibitive to implementing a program that makes sure low-income and middle-income families get things like heat pumps? This report shows how achieving net-zero is driven by consumer adoption and by updating and buying things. How can we look at things like increasing public transportation and EE programs across the Valley?
 - Duncan: The study looks at how we can identify and focus deeper on ensuring opportunities in our communities. We are looking at how to identify gaps and determine are there are steps we can take to address these gaps.
 - Sims: We need to pay attention to the economics of why people are or aren't adopting, then we can make better cases on how to supply these things. We need to think about the potential with public transportation. We have to understand the co-benefits to be able to make those cases for public policy. When we talk about consumer behavior, there are private actions as well as some public policy.
- Don't exacerbate environmental racism. In Shelby County, the energy burden of what it costs to run households has been cost-prohibitive to some people. It is a catalyst to homelessness. People can't afford to run energy in their homes. We should implement programs in a way that people on lower incomes and who experience energy burden are not the last ones to be able to get these solutions that get us to net-zero.
- In denser communities, how could we partner with the Department of Transportation to reduce gridlock situations so vehicles could move without traffic? This is heavily consumer driven. As we look at community development, maybe infrastructure development is another avenue to pursue.
- Regarding light-duty and medium- and heavy-duty vehicles, can you say more about the things that were discussed or the key barriers?
 - Duncan: Light-duty are the cars we drive every day. That's where we see the greatest opportunity for electrification. For commercial trucks and tractor trucks, those don't have as much opportunity. They are harder to electrify. This is where we see low-carbon fuels helping with the reduction of emissions.
- How does that translate into modeling? I would have expected a bigger drop in low-carbon fuel.
 - Duncan: It looks at electrifying all passenger vehicles. With low-carbon breakthrough, it is only looking at the impact of low carbon on medium- and heavy-duty vehicles.
 - Sims: Decarbonizing light-duty is more feasible but more socially difficult. It will take a big tech breakthrough to electrify medium- and heavy-duty vehicles.

4. Advice Questions and Discussion

Advice Questions

1. What feedback or suggestions, including additional analysis, do you have to ensure the Valley Pathways Initiative moves toward actionable results?
2. Are there certain types of programs or initiatives in your communities that have been effective in greenhouse gas emission reductions and that the Valley Pathways Initiative should consider coordinating with in the future?
3. How can the Valley Pathways Initiative encourage focus on partnerships and investments in innovative technologies?

RERC and RRSC members were asked to weigh in on the topics before each Council's draft Advice Statement was prepared.

RERC members' comments and suggestions included:

- One solution to creating more efficient homes is to offer new incentives for shifting household economics. TVA could offer low-interest rate loans and the cost of improvements could be paid back in the electricity bill.
- Thanks for leading this effort. It is aspirational, ambitious and helpful to broaden the conversation between the public and private sectors. One comment is to think outside the world of incentives toward actionable results. Continue to do the interaction among all organizations and increase the coordination. Maybe there can be strategic alignment between cities and counties. It would look different in different locations. Continue to lean into the ongoing effort and keep these types of things happening.
- I am thinking of financial tools. In North Carolina, Green Bank is getting set up and we're working with them to figure out what the needs are in the state. There might be things like bridge loans for individuals or entities who are eligible for those federal tax incentives or other program incentives. Think about what it means for local governments and other entities and how that need can be filled. Also, regarding carbon sinks, in North Carolina we estimate that about one-fourth of our carbon emissions are offset by natural working lands and carbon sinks. Mapping could help you figure out what might be in your area. You could have an incentive program to figure out where those areas are and how to preserve them. Finally, bulk efficiencies can be found in programs. We've seen success in a program in the mountains in North Carolina that focuses specifically on getting electric heat pumps in bulk and putting them in homes, including in low-income and EJ communities. They use a sliding scale system. We also look for additional efficiencies in installation, advertising and savings for homes. And we met with industry across the state. They are ready to go on energy efficiency projects, but they can't find the workers to

do the work. We made sure we were reaching out to different sectors so we understood their needs.

- Thank you to TVA and the University of Tennessee for their work here. The leadership is catalyzing these conversations. I have been thinking through the parallel initiatives going on at various levels. The coordination piece among organizations will be key. For the methodology piece, it is critical to understand how this was pulled together and what inputs and assumptions were made, because that can inform ongoing studies and initiatives. For the advice questions, #1 – I think it could be helpful to take inventory of those parallel programs or funding opportunities that we know exist or are coming. There are so many programs coming out of the new federal acts. Where are the remaining funding gaps? It will be helpful to take a better assessment of the costs associated with these pathways so we understand what that looks like from an economic standpoint. Lastly, with all these different scenarios, who has the authority to implement each of these different measures? Who has the different kind of levers to pull to integrate some of these solutions?
- As part of #2, ask for programs in your communities, like Home Uplift. We always take the opportunity to plug that program. With Home Uplift, we are three years in and have been able to improve 60 or 70 homes. Across the Valley, how many LPCs are participating in that? Could it be part of Valley Pathways initiative to expand the program and make it easier for people to play a role in? How do we encourage more LPCs to be involved? We have seen energy usage going down with that program from one season to the next. Also, going back to additional analysis – the concept of public transportation. I have been more intrigued by interstate high-speed rail. How would a system like that help? For people across the board, to get from one portion of the state to another. Public transportation could help at a place like BlueOval City.
- A lot of questions today about the relationship between Pathways and the IRP and Valley Vision 2035. And there are other efforts that TVPPA is involved with as well. They are all interrelated. To me, Valley Pathways should be the overarching plan or start of a plan that TVA and our members can fit within. Below that would be the IRP. Then Valley Vision 2035. Regarding the pillars of decarbonization, those to me are high level, and take it across seven states. So, state energy departments and other entities will have to embrace Valley Pathways. I do believe TVA plans to address what it can address in partnership with my members to balance decarbonization and electrification with reliability. That is what the IRP is trying to do between now and 2050, and Valley Vision between now and 2035. I don't know how to provide advice to those three questions. They go beyond what TVA and my members can do together to address only a portion of what Valley Pathways reveals. It goes beyond just the electric sector. TVA and TVPPA have a lot underway to address what we can. I would need a little clearer understanding of what the TVA Board believes it needs to do or wants to do in this space. We would be very careful that TVA funding stays within the reasonable scope that already exists all the way down to EnergyRight and the energy efficiency programs that TVA has in place.
- It is important to understand the gaps and address supply chain issues and the inventory of skilled workers. Recreation is important to environmental justice. When people look at TVA, they talk about electricity. But in the beginning, it was about eliminating poverty in the region. When we look at a just transition to net-zero, what does that look like for people on lower- and middle-income scale? One advice question I would like to see added would look at the co-benefits of these initiatives and the economic impact in the region in terms of reducing poverty and increasing opportunities of people and regions to generate income with certain things put in

place. Electrification of the region through transportation and public transportation; how would they economically impact the region? I want to be able to capture the co-benefits and also the economic impact of implementing these things.

- I would like to see if the Valley Pathways Study could identify the technologies that are needed. You hear about technologies like carbon sequestration, and yet there is a gas buildout. The decisions being made about capacity seem to be let's build more gas power plants, and if we're going to decarbonize by 2050, that seems inconsistent to build gas power plants and then have a 20- to 30-year life of that plant. I assume that TVA is relying on carbon capture and sequestration. This seems like a disconnect to me in terms of the objective to decarbonize while plans on the ground are different. My second comment has to do with decarbonizing industry. If you used nuclear power plants to generate hydrogen while renewables were operating full capacity, you would have a source of hydrogen that could help decarbonize industry. You have a good nuclear base and could consider using excess capacity in your nuclear fleet to generate hydrogen. My third comment is about modeling. There has been discussion about EJ and not enough money to make improvements. Citizens Climate Education supports a price on carbon. If you do carbon pricing with cash back, all of the money goes back to the people. Then, they are incentivized to make changes and have the money to make those changes. It's a policy issue.
- There is a lot of change that will impact citizens. With EVs, people are aware of what that means. There are other issues they might not understand. Education will be important so they understand options and what we want to achieve here.

RRSC members' comments and suggestions included:

- My viewpoint is from the recreational side. I want to mention that through TVA, there is the Camp-Right program. It is a great initiative. The public sees it directly. TVA does have a method for campgrounds and marinas in program that reduces GHG effects, and the public sees that. We advertise that. You can directly reach tens of thousands of people through the campgrounds and marinas and through the Camp-Right program by getting the information out there. Our campers come from different sectors. It is a great way to communicate and reach out.
- We are trying to get a designation with the mayor through the Department of Transportation to designate the Tennessee and Cumberland as American marine highways. It's a grant program that aids ports and terminals on the river systems to invest in their infrastructure to assist and mitigate congestion. One barge carries the equivalent of 70 tractor-trailers. There are ways to incentivize investment to assist in traffic mitigation. TVA might be able to incentivize moving traffic off the highways and onto the river system. You possibly could coordinate with the larger federal government.
- Where we have identified barriers to implementation, there needs to be an expansion of that effort to further clarify barriers, maybe even sector-specific barriers based on the areas that have been identified. Also, given what we've talked about, there is a need for consumer and business adoption of these technologies to achieve the net-zero goal.
- TVA could consider supporting Ag Launch, an organization in Tennessee that works with companies that are startups working on various new technologies for agriculture. Some of those

relate to use of electric vehicles in agriculture. That is something TVA could consider supporting. There are always people looking for grants to support their ideas and their technologies.

After the Councils' discussion and the public listening session (see no. 5 below), the RERC and RRSC met in separate breakout groups to discuss and finalize the advice statements. Jennifer Brundige, TVA Office of General Counsel, explained the voting requirements for the Councils and noted that the advice is a group Advice Statement, which may include a minority perspective. Each voted unanimously on their subsequent advice statements.

The Councils got back together later as a large group, and Erin Gill read the RERC Advice Statement and Tom Littlepage read the RRSC Advice Statement.

5. Public Listening Session

Amy Kelly

Thank you for the opportunity to comment today. I work across state chapters in the TVA service. Sierra Club completes an annual review and report about utility climate pledges, and finds that TVA has the largest planned gas build-out of any other utility by 2030. Other utilities are transitioning from coal and going straight to renewable energy and storage options, but TVA is falling behind with its planning.

The Valley Pathways Study shows that we are relying on the electric sector to decarbonize the rest of the economy, particularly the light-duty transportation sector. The study estimated TVA's 2050 greenhouse gas emissions at the high end using the 2019 IRP. TVA did not have an aspirational net-zero carbon goal until 2021, and that goal certainly is not reflected in the 2019 IRP.

Yet TVA is building all of its new gas based on that outdated 2019 plan. TVA will not be able to meet its own electric sector decarbonization goals, let alone support economy-wide decarbonization with the nation's largest planned gas build-out unless it adds extremely costly carbon capture technology to the gas plants. We have already seen TVA increase rates to build more fossil generation. That doesn't even account for the impact to residents with additional fuel cost adjustments on their electric bill when gas prices increase. I hope that the federal stakeholder groups can really signal to the Board of Directors that TVA needs to build more renewable energy now, rather than gas plants, to stay on track for the decarbonization we need and the service area to align with the study.

In turn, I think it is important that the Regional Energy Resource Council and the Regional Resource Stewardship Council have the draft of the Valley Pathways Study to be able to fully engage with the methodology being used. This is the opportunity to give a statement of advice to the Board of Directors, yet not all of the information is available to you.

Last year, the RERC and RRSC created an environmental justice statement of advice to the TVA Board of Directors. I wanted to raise this again, because communities are still having difficulty fully participating in TVA's limited public input processes. TVA holds open houses, and these are like poster board presentations that make it difficult for people to ascertain the same information. There is no central speaker. A lot of times, no one speaks at all. TVA should conduct meetings like the Tennessee Department of Environment and Conservation and other agencies, and hold presentations with question and answer sessions and then comment periods. TVA says in its public input process for the November and December IRP webinars that there will be local meetings with IRP experts before the draft IRP is released. But where are those local events happening? Why aren't they published on the IRP website?

There is now a people's IRP hearing being held in Nashville on January 25th with a former public utility commissioner hosting an expert witness, so that there will be a hearing like other utilities would hold if they were regulated by a public utility commission. TVA could do so much more to engage and learn from the public, especially those directly affected by its decisions. For example, TVA could hold a real public hearing for the IRP. Thank you for listening to my comments today.

Richard Shaffer

I live on the Jackson Putnam County line, midway between Gainesboro and Cookeville. I am a stakeholder, as I have been a ratepayer for 19-plus years. I am a high school graduate with technical school certificates. I have numerous associations with professional and community organizations. I paid union dues to the International Brotherhood of Carpenters and Joiners for 25 years. I was a foreman.

I served as a subject matter expert, GSA rated to Headquarters USAF, reporting to the air staff for 15 of those years. Though I do not have an education, that rating is equivalent to those who have a PhD with five years of experience. I gained it through 25 years of experience with zero failures. I am disabled and live on Social Security level income.

I am here to propose that the Valley Pathways Study focus on moving away from fossil fuel fired power generation to full-on use of solar, wind and storage power generation by any and all methods and technologies. I'm here to argue against the Tennessee Valley Authority building new gas fired generating plants and/or infrastructure. My purpose is to engage with TVA and the Baker Center to provide input from one directly affected in a positive sense by the existing Kingston Ridgeline pipeline and one who would be directly affected in negative ways by any parallel larger gas pipeline trenched alongside that 1940s / 1950s pipeline.

I have been involved with attempting to avert the building of this pipeline since 2022, and as of the end of the year 2023, and working toward no TVA pipeline, I have put in 2,000 hours of my time and \$1,000 of my money. I traveled to Florence and Norris in-person and Chattanooga and Tupelo virtually last year

for board meetings. My 2024 itinerary is February in Johnson City, then on to Nashville, Huntsville and Murray. I'd like to speak to 25 miles along the Kingston Ridgeline gas pipeline. I have lived in Dry Creek Meadows since 1993. It's a very early development on the county line, built out of Owens farms along Time Farm going back almost to settler days.

A plumber who came here early in our stay remarked that when I was a boy, my daddy cut trees here. The Owens were always careful about the trees we call our homestead. It is 17 acres – 15½ on two lots in Putnam County with no hog farms being an only effective restriction and 2½ acres in Jackson County without restrictions for use. We have been here since 2004. Eight acres have not been logged or altered since at least 1993 and probably into the early '80s.

It is our home and work place. We have access to Cummins Mills Road off the parcel that sits in Jackson County less than a mile and a half from the entrance to Cummins Falls State Park. Where I'm standing now is about two miles from Cummins Falls and about two miles from Flynn Creek. The increase in property value since the state park opened has been phenomenal. I have been using that park since 2004, when to get there you parked by the side of the road and hiked or slid down a steep embankment. It was used by students from the local university to a large extent.

Cummins Falls is a historic site with two mills dating back to 1803. Blend Creek is a geological and natural treasure. Its history goes back from the Paleocene to 1803, where it was an intensely inhabited indigenous area and transportation link with the adjacent Flynn Lick, containing numerous mounds that have been looted in the past century.

The year 2024 is TVA decision time. A trench across the Cumberland Plateau, Kingston Ridgeline Extension pipeline proposal. I have a list of waterways and the effects, and I'd like to forward all this. I'd like to know when baseline data will be available. I notice in the organizations that make up the study, deficiencies in faith based and individual ratepayer input. Please open this process to the Unitarian Universalist Congregation of Cookeville and me. For all carbon producing sectors, TVA has the most control over power generation – i.e., transportation can be influenced but not controlled. Please may I submit my personal collections and others' writings, documents and the like for stakeholders review. The copyrighted field guide is a good example of what I'd be happy to prepare for you.

Dr. Nikki Luke

Thanks. I am a faculty member in the Department of Geography and Sustainability at the University of Tennessee, and I'm here today because I was a member of the Stakeholder Working Group for the Valley Pathways Study. I want to extend thanks to Laura Duncan and the rest of the TVA and Guidehouse teams and to Dr. Charles Sims and everyone at the Baker School for all of the work that went into this.

I also want to highlight what I think are a few outstanding questions as TVA works to develop a roadmap that aligns the goals of the Valley Pathways Study with the work that's already being done in the IRP and through other efforts that we've heard about today already led by industry, state and local governments in the Valley. I value the collective wisdom of people on these advisory boards and considering how the Valley Pathways Study moves forward with actionable steps, and particularly how it does so in ways that keep low- and fixed-income customers in mind, especially given the importance of consumer action to meet some of these goals.

So if the Valley Pathways is a starting point to understand where we are and an end point for where we want to go, aligning with the IRP and other steps is important to understand how we get there. So, I would just echo some of the questions that we've heard already today.

First, how are demand response, energy efficiency and distributed energy technologies integrated into a road map to net-zero and how is TVA helping to make this available to low- and fixed- income customers? Also include planning for net-zero utilizing existing federal incentives, tax credits and programs through the Inflation Reduction Act and bipartisan infrastructure law that state energy offices and industry are working to tap into. How can TVA coordinate with local power companies to meet these targets? And how can clean energy technologies offset the need for the gas build out that TVA has proposed?

The study is one of many that indicates load demand is anticipated to increase with industry and vehicle electrification across the Valley between now and 2050. And so how we choose to meet that demand has very significant consequences for how close we can get to net-zero on this timeline. The final point I would say is how can public participation be expanded to hear from a range of stakeholders in this process?

So really, again, thank you for all the work that's gone into this study so far and the opportunity to be here today. I look forward to seeing the advice comment that you put together and the continuing work that follows on from the Valley Pathways Study to work toward net-zero for the Tennessee Valley.

6. Closing Comments

Melanie Farrell thanked the Councils for their work in developing robust, informative Advice Statements. She said TVA and the TVA Board appreciate the Councils' work.

Tom Littlepage and Erin Gill thanked TVA staff for their work behind the scenes to make the meeting happen, and they thanked the Council members for their contributions in making it a productive meeting.

RERC VALLEY PATHWAYS STUDY ADVICE STATEMENT – JANUARY 18, 2024

The RERC appreciates TVA and UT for initiating and leading the Valley Pathways Study (VPS) and its focus beyond the traditional electricity realm toward broader economic decarbonization. While recognizing that the VPS is separate from the 2024 Integrated Resource Plan (IRP), the RERC encourages TVA to closely integrate these efforts, specifically by reflecting final IRP emission ranges in the VPS decarbonization pathway and accounting for resultant emission gaps. At a minimum, the VPS highlights the importance of TVA decarbonizing the electricity sector and will serve as an important baseline to measure progress against that goal as it maintains an affordable and reliable electricity system.

Additional points of analysis by the Valley Pathways partnership may include:

- Cost analysis of the four pathways
- Supply chain constraints, including market barriers and worker/education needs
- Inventory/Analysis of stakeholder/decision maker engagement, including funding, authority, and other variables needed to implement recommended actions
- Potential strategies to address identified emission gaps

Further analysis of co-benefits and impacts will be particularly important and instructive. Some carbon reduction strategies may create significant non-greenhouse gas emission impacts for Valley residents, especially environmental justice (EJ) communities (for example, other pollutant emissions, mobility, resilience to extreme temperatures, financial stability, etc.).

In looking toward the future of the VPS and its influence in the valley, TVA is one of numerous stakeholders that will play a critical role in determining whether the Valley achieves a decarbonized economy. TVA should leverage its role as an energy, recreation, and economic development partner to promote (and lead where needed) coordination and alignment among stakeholders and decision-makers whose actions will determine success of varying aspects of economy-wide decarbonization pathways. No-regrets actions should be amplified and coordinated among implementation partners in pursuit of funding (i.e., Climate Pollution Reduction Grants and other grants) and policy opportunities. Transparency of methodology will be important to supporting this coordination and alignment.

Consumer engagement is a significant opportunity and also a challenge. To promote widespread deployment of decarbonization technologies, TVA should continue to broadly educate and build

awareness of opportunities and benefits, as well as implement and promote programs that increase financial accessibility to a wide variety of consumer groups, with extra emphasis on low-/median-income consumers. Several particular programs demonstrate proven track records and warrant further exploration:

- Low Interest financing, with on-bill repayment
- Expansion of Home Uplift
- Commercial Property Assessed Clean Energy and Resiliency (CPACER)
- Bulk high-efficiency equipment purchases and deployment

Several ideas for how the Valley Pathway partnership can promote innovation needed to achieve decarbonization pathways include:

- Engagement around Carbon Sinks/ Natural Working Lands, which can be a major source for offset and displacement.
- Specific engagement with industry stakeholders to understand specific barriers and opportunities toward viable decarbonization efforts.
- Continued support of technology R&D partnerships (including with UTK, ORNL, and others) in hard-to-decarbonize sectors.
- Convene and coordinate stakeholders around actionable activities within particular sectors (Drive Electric TN is one successful example).



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RRSC Valley Pathways Study Advice Statement – January 18, 2024

The RRSC provided advice to these questions during their joint meeting, held virtually, with the RERC on January 18, 2024.

- 1) What feedback or suggestions, including additional analysis, do you have to ensure the Valley Pathways Initiative moves toward actionable results?
- 2) Are there certain types of programs or initiatives in your communities that have been effective in encouraging greenhouse gas emission reductions and that the Valley Pathways Initiative should consider coordinating with in the future?
- 3) How can the Valley Pathways Initiative encourage focus on partnerships and investments in innovative technologies?

The RRSC held a discussion following a summary presentation and preliminary findings of the Valley Pathways Study (VPS), a joint initiative between TVA and the University of Tennessee Baker School of Public Policy & Public Affairs, based on the premise that a collaborative, economy-wide effort is needed to achieve net-zero emissions Valley-wide by 2050.

The objective of the VPS is to quantify sources of greenhouse gas (GHG) emissions across the entire Valley and evaluate pathways for the Valley to reach Net Zero GHG emissions by 2050. The initiative involved economy-wide stakeholders representing a variety of interests and perspectives to provide feedback on the analysis of GHG impacts of the transportation, electricity, manufacturing & industry, buildings and agriculture sectors. The Study's preliminary findings identified critical components needed to build a competitive, clean economy.

The RRSC recognizes TVA's aspiration to be a clean energy leader and the agency's commitment to reducing carbon emissions to support a thriving clean energy economy. In addition, the RRSC acknowledges the merit of the VPS initiative in its effort to evaluate cross-sector contributions to GHG emissions and the role each sector can play in achieving net zero targets.

The RRSC noted that it is important to acknowledge the impact of consumer behavior and adoption on VPS outcomes. The RRSC recommends additional analysis to clarify sector specific barriers to adoption and quantify the resulting scope of hindrance to adoption of technologies. In particular, environmental justice factors and the socioeconomic feasibility of achieving targets should be reviewed.

To maximize intended results, the RRSC suggests further analysis of factors such as the impact of the life cycle of batteries and other byproducts of the electrification of the economy. This could contribute to a more comprehensive understanding of the unintended consequences of the scenarios in the VPS that could potentially have negative impacts on TVA's environmental stewardship commitments and obligations.

Objectives of the VPS should not be pursued at the expense of TVA's obligation to provide reliable and affordable electricity and should seek to balance those factors.

Additionally, further analysis of infrastructure and technology requirements to facilitate the successful implementation of programs that encourage efficiencies and reduction of GHG emissions should be included to assist in the development of pragmatic and actionable programs and policies.

Members of the RRSC identified programs and initiatives that exist which support the goals of

Valley Pathways, including the TVA Camp-Right program, U.S. Department of Transportation's MARAD Marine Highway program - an infrastructure investment incentivization program, and potential partnership with the agriculture innovation company, AgLaunch. These offer opportunities to take advantage of funding mechanisms and develop strategic partnerships to maximize resources across the recreation, transportation and agriculture sectors.

In addition, the RRSC recommends consideration of programs that level the playing field across socioeconomic levels, in particular as they relate to accessibility to energy efficiency and transportation solutions.

The RRSC strongly encourages an ongoing emphasis on coordination and collaboration among a variety of stakeholders and contributors to achieve the intended outcomes outlined in the Study.

Appendix A

Non-Council Meeting Attendees

TVA Staff Members	
Tom Barnett	Susan Lauver
Clifford Beach	Michael Kitzman
Jennifer Bogus	Heather Kulisek
Jennifer Brundige	Jo Anne Lavender
Cathy Coffey	Sarah Mawhinney
Laura Duncan	Michael McCall
Amy Edge	Jeannette Mills
Ashley Farless	Barbara Perdue
Melanie Farrell	Doug Perry
Bekim Haliti	Aurora Pulliam
Rebecca Hayden	Marylee Sauder
Gregory Henrich	Logan Stephens
Althea Jones	Liz Upchurch

Stakeholders (Virtually)	
Bill Accola	Grace Levin
Francine Baggi	David Liffrig
Curtis Baysinger	Nikki Luke
Al Berrong	Rachael Maitland
Trey Bussey	Lauren McCarty
Kari Elkins	JoAnn McIntosh
Dawn Michelle Foster	Levi Phillips

Amanda Garcia	Cody Rife
Jane George	Tony Russo
Daniel Joranko	Gabriela Sarri-Tobar
Amy Kelly	Richard Shaffer
Jefferson King	Maggie Shober
Paul Klein	Charles Sims

**Regional Resource Stewardship Council and Regional Energy Resource Council
Combined Meeting Agenda
January 18, 2024**

January 18

8:30 – 9:00	Welcome Call Meeting to Order Introductions and Agenda Review
9:00 – 9:15	DFO Briefing
9:15 – 10:00	Valley Pathways Study Presentation
10:00 – 10:15	Break
10:15 – 11:00	Valley Pathways Study Presentation continued
11:00 – 12:00	Advice Question Discussion
12:00 – 1:30	Lunch Break Council Chair Development of Draft Advice Statements
1:30 – 1:45	Public Listening Session
1:45 – 2:45	Finalize Advice Statements with Councils in Separate Rooms
2:45 – 3:00	Read Final Advice Statements to Combined Group
3:00	Closing Remarks and Adjourn Meeting