Regional Energy Resource Council Minutes
December 8, 2021
Tennessee Valley Authority
Virtual Meeting

The Tennessee Valley Authority (TVA) Regional Energy Resource Council (RERC or Council) convened for the first meeting of the 5th term at 9 a.m. EST on Wednesday, December 8, 2021. The meeting was held virtually in keeping with public health guidance during the coronavirus pandemic. Meeting presentations are available at **www.tva.gov/rerc.**

Council members attending:

Michael Butler, Erin Gill, Rebecca Goodman, Dana Jeanes, Jonathan Levenshus, Dan Miller, Senator Steve Livingston, Pete Mattheis, Jennifer Mundt, Doug Peters, Patrice Robinson, Alexa Voytek and Lloyd Webb

Designated Federal Officer: Melanie Farrell
Facilitator: Jo Anne Lavender

- Appendix A - TVA staff and members of the public who attended the meeting
- Appendix B - Agenda

Purpose

The purpose of the meeting was to present an overview of, and discuss plans for, the 5th term and give updates on TVA and projects related to Extreme Weather Preparedness, Long-Term Resource Planning and Pricing Fundamentals. The meeting was an information-only session and therefore does not include an advice statement. Time was scheduled for questions following the end of each presentation. The meeting was available to the public in listening mode and no one from the public registered to make any comments during the public listening session.

1. Welcome and Introductions

A. RERC Chair Jennifer Mundt welcomed attendees and reviewed the role and the responsibilities of the Council.

B. Althea Jones, Senior Manager of Public and Community Engagement and TVA Committee Management Officer (CMO) announced Ashley Farless in her new role as manager of Public and Community Engagement, leading TVA's efforts with both the RERC and the Regional Resource Stewardship Council (RRSC).

C. Melanie Farrell, Vice President of External Strategy & Regulatory Oversight and the RERC's Designated Federal Officer (DFO), welcomed everyone and shared her excitement for the start of the 5th term.

D. Member Introductions

2. Fifth Term Overview — Althea Jones & Jennifer Brundige, Attorney of Regulatory Law in TVA's Office of the General Counsel

Jennifer Brundige outlined the roles and responsibilities of the RERC for the 5th term, explained meeting requirements, and summarized key provisions of the Charter.

Althea Jones provided an overview of the tentative schedule and meeting topics for 2022. TVA would like to hold future meetings in person if possible. For the last meeting of 2022, TVA is tentatively planning to have a joint meeting of the RERC and RRSC in Nashville.

3. TVA Update – DFO Melanie Farrell

Melanie Farrell provided the Council with updates from the November 2021 TVA Board of Directors Meeting, TVA Board Nominations and a FERC Filing.

- The TVA Board officially adopted its first Biodiversity Policy Statement reflecting TVA's commitment to sustainability. The Policy extends across all TVA organizations to implement cost-effective conservation in new and inventive ways. These biodiversity-related activities will help reduce TVA's impacts on biodiversity and ecosystems while enhancing ecosystem services that benefit surrounding communities. The RRSC previously reviewed and recommended the policy be adopted by Board.

- The TVA Fiscal Year 21 (FY21) Annual Report is published online. The communications team has enhanced many of the report's interactive features. (The Report can be found **here**).

- The Board approved the continuation of the Pandemic Recovery Credit, a wholesale non-fuel rate credit previously known as the Relief Credit begun in August 2021 to extend through FY22 and into FY23. The initial terms of the FY21 Credit were at a wholesale non-fuel rate of 2.5 percent, valuing $221 million in Pandemic Relief Credits to customers. These credits have benefited the end-user directly. In FY22, the credit renewal rate will continue at 2.5 percent, with a predicted value of $220 million. Customers will receive an expected total of $133 million in Pandemic Recovery Credit in FY23 at a wholesale non-fuel credit rate of 1.5 percent.

- Following the 2019 IRP, TVA conducted end-of-life evaluations of its coal fleet. Of the remaining coal assets, the decision was made for Cumberland and Kingston Plants to be considered for retirement. The National Environmental Policy Act (NEPA) Environmental Impact Statement process began in spring 2021 in accordance with TVA's 2021 Strategic Intent and Guiding Principles. This process evaluates both assets and reasonable alternatives for replacement generation. TVA expects to publish the Draft Environmental Impact Statements for both projects for public review during the first half of CY 2022.

- FY21 was a banner year in Economic Development. TVA had a record year for job creation; 80,900 jobs were created and retained. In addition, TVA had its third-highest year in capital investments, amounting to $8.8 billion. Farrell highlighted three separate projects with GM, Ultium Cells and Oracle with a combined value surpassing $1 billion. For the 16th consecutive year, Site Selection magazine named TVA a Top Utility in Economic Development; 270 projects were won – a 43 percent increase over the previous year; TVA is actively working on 26 EV projects; 463 research requests were

fulfilled; 73 training and development services were provided; and 324 Technical Services offerings were provided.

- TVA's and Tennessee's largest capital investment in history with Ford Motor Company totaling $5.6 billion. Ford will begin EV and battery production at a plant mega-site outside of Memphis around the summer of 2023 which is expected to create nearly 6,000 jobs.

- Congress has yet to approved nominations to fill TVA Board vacancies.

- Farrell reported that in early 2021, four local power companies (LPCs) petitioned FERC to compel TVA to transmit power to them from non-TVA suppliers. This request violates a provision in the TVA Act that safeguards TVA from such attempts that would negatively impact TVA customers. FERC denied the petition 3 to 1 in October 2021. One of the four LPCs withdrew before the decision was issued and has since become a long-term TVA partner. Two of the remaining three LPCs requested that FERC rehear the case. TVA filed a response on December 7, 2021, supporting FERC's position and urging FERC to deny the motion.

QUESTIONS/ANSWERS

Jennifer Mundt expressed an interest in whether there was tracking for LPCs direct issuances of Pandemic Relief Credits to end-user customers.

4. Transmission Planning – Kristin Spearman, Vice President, Transmission Planning & Projects

Kristin Spearman described the TVA transmission planning process as having three distinct time horizons: real-time, which is the planning space for reliable everyday power as well as in extreme weather events; near-term, which is linked with planning in response to TVA's evolving asset strategy plan; and long-term, which is associated with plans for shaping the Valley's energy future and building the Grid of Tomorrow.

Spearman discussed the winter preparedness of TVA's fleet. In Transmission Planning, it is standard practice to do post-analysis assessments after extreme weather events to determine the likelihood of TVA having a similar event in the future. Transmission Planning closely studied the FY21 extreme event involving ERCOT's massive widespread outage across Texas. In comparing the TVA and ERCOT models, TVA noted strengths that protect TVA against such a likelihood. Planning processes ensure that reserve capacity meets peak demands, and the IRP process assures that a diverse generating fleet will meet those peaks.

Because the TVA public power model focuses on dependable power, it helps mitigate associated risks with such a crisis. Spearman pointed out that TVA is unique among utilities in its requirement for a robust weatherization program. Most utilities use market-based models, in which pricing strategy and incentives drive both generation and investment. TVA plants must winterize their equipment and invest in generators that will be available during TVA's peak load periods.

The assessment found that TVA's geographical landscape facilitates connection capabilities with other utility systems, allowing for the delivery of quick, reliable and affordable power during

extreme weather events. Unlike deregulated market models, which rely on profit-driven competition to encourage reliability, the TVA public power model ensures reliability.

Spearman outlined the information in the Winter Outlook for FY22. Temperatures for this winter season are within the normal range. Peak-load growth is increasing, which she attributed to economic and demographic factors affecting customers in the industrial sector and pandemic recovery factors that affect TVA's direct served customers. Additionally, the review of the ERCOT event resulted in actions taken to reinforce and improve TVA's System.

In addition to TVA's continued investments in its gas plants, including a $2.4 million planned investment in its gas fleet to build on prior winterization efforts, TVA is strengthening its gas contracts and a coal conservation strategy has been adopted for winter reliability. Further, many of the procedural improvements suggested by TVA employees have been executed. In addition, operator training and customer education on emergency load curtailment programs have increased.

Spearman elaborated on the planning process' time horizons. Near-term planning considers five evolving industry drivers for their impacts on TVA's asset strategy execution:

- New and advanced technology is considered for projects to improve plant efficiencies. TVA remains heavily invested in advanced data and data analytics essential for transmitting information that gives TVA more visibility across its operations. Spearman noted the projects to modernize TVA's grid.
- System performance and requirements are fundamental drivers to the system's reliability. Operational flexibility is essential for confronting and supporting potential maintenance outages and unexpected interruptions to TVA's system. Spearman said planning is considering capacity strategies in response to the Valley's upward population growth. She noted that the Transmission and the Economic Development teams are working together to ensure the system meets the emerging requirements attributing to the growth, particularly in the industrial sector.
- Environmental regulations, reviews and goals are closely monitored by the NEPA process. Transmission Planning practices accountability by keeping engaged with the Environmental team to ensure environmentally responsible decisions.
- Supporting infrastructure drivers is the physical build-out of the supporting projects needed to meet system goals, both from a power delivery and communications standpoint. Additionally, construction and associated operations and the long-term maintenance of transmission assets are also drivers.
- External element drivers necessitate Transmission Planning to practice adaptability and flexibility in their responses. Spearman cited several examples, including new regulations over infrastructure, changing customer and partner needs, and supply chain and material challenges.

Transmission planning on a long-term horizon encompasses the long-term grid and modernization projects that will shape the Valley's energy future. Big projects are in the works that will help lead TVA into the future. The System Operations Center in Georgetown, Tennessee, is expected to be constructed by spring 2023. It comes with new software and a new, state-of-the-art Energy Management System that should be up and running by Winter 2025. This software will give system operators more control over and visibility into the power systems and more flexibility and control over the equipment.

Spearman highlighted the Strategic Fiber Program, which aims to improve TVA's existing fiber-optic network expanding the reach of communications for supporting operations across the

Valley. In 2017, the Board approved the initiative, adding 2,700 miles of new fiber to meet future operational requirements. In addition, the program will connect all of TVA's networks and run the new Energy Management System. It will allow and support remote monitoring of the power system and operating equipment. Overall, these activities modernize TVA communications, significantly impacting all TVA operations. Today, 875 miles of the optical ground wire has been installed, and the project is expected to be finished by Fall 2027.

Spearman concluded that while TVA's focus on reliability remains its priority, investing in future planning ensures that TVA has a reliable and resilient system in the years to come.

QUESTIONS/ANSWERS

Lloyd Webb highlighted a key distinction between the TVA and ERCOT models, emphasizing that adding more renewable power into the portfolio involves additional considerations. Jonathan Levenshus asked about TVA's efforts to promote local resilience and reduce reliance on the overall grid. Spearman highlighted that Transmission Planning and Innovation & Research have begun collaborating to gather the information to guide these initiatives.

5. Long-Term Resource Planning – Eric Grau, Director of Resource Planning & Strategy

Eric Grau provided the Council with a comprehensive overview of resource planning. In accordance with the TVA Act, resource planning is grounded in six least-cost planning principles, including low cost, risk-informed, environmentally responsible, reliable, diverse and flexible. Resource Planning & Strategy strives to achieve these principles to help guide and inform decisions.

TVA uses a variety of plans to test and implement strategy, including business plans, long-term plans, and the IRP. Planning horizons and methods are defined for each plan to address uncertainty. Grau defined planning as an iterative process and TVA's planning continuum as progressing from tactical to strategic planning.
Resource Planning evolves with signposts and experience operating a changing fleet in the strategic window. Analysis in the strategic window indicates future system needs and risks to guide tactical planning. Resource Planning continues to learn and evolve to harness available information to ensure that the IRP is grounded on the six least-cost principles.

The initial stages for developing TVA's long-range power supply plans involve thinking about the attributes and elements of the resources. Fundamental to planning is the maximum amount of electricity a generator can produce under certain conditions and over a given period. Therefore, capacity and energy are the two attributes that ensure a system's capacity satisfies peak demands and that the system's resources have enough energy to achieve annual requirements.

Winter, summer and shoulder (spring/fall) season profiles help prepare for the varying power demands caused by the seasonality of system requirements. System demands remain stable throughout the shoulder months and do not peak; therefore, spring and fall have off-peak profiles. Winter and summer seasons have distinct peak periods, as do the system requirements to meet those needs. Grau described the two winter peaks and summer peak to the Council. Planning prioritizes the capacity factors and asset capabilities necessary during peak periods. Additionally, physical and economic descriptors that further characterize the generating units and their operation provide added insight into the model and aid in the direction of TVA's power supply plans.

The presentation included a summary table of the model's options and attributes for reference when planning a future power supply. Grau highlighted the capacity factor attribute, which indicates how much of the year a resource is projected to function, determined chiefly by its operating costs. A profile's daily load shape demonstrates power delivery, which is characterized as peaking, intermediate, or baseload. The daily load shape indicates the power delivery type necessary at various points throughout the day. As TVA moves to use intermediate resources, such as solar during winter and summer peaks, load shapes will appear differently as these resources operate differently. Intermediate resources must backstop throughout the day, which is supported by TVA's reserve margin.

Reserve margins provide reliability in the case of unforeseen weather, load forecast error and system performance events. Last year, TVA revised its reserve margin research, reaffirming TVA's planning reserve targets of 25 percent winter margin and 18 percent summer margin. This action ensures that if there is a forecasting error based on data projected out 20 years, TVA has the resources, or planning reserves, to rectify it. TVA currently operates as a dual peaking system as summer and winter peaks receive shared attention and set the bar for the planning reserve. As TVA moves into the future using more solar, summer peaks will lower, shifting TVA's focus back to winter resources.

Grau provided an overview of the analytical process and outcomes of the 2019 IRP. Stakeholder and public comments informed additional sensitivity analyses to test the impact of changes in key assumptions across six scenarios and five strategies, resulting in the development of 30 portfolios then evaluated. Evaluations are intended to generate a range of solutions for potential future outcomes. Additionally, key signposts were identified to monitor over the next 20 years to validate the accuracy of the current IRP. Grau added that TVA continues to monitor any signpost changes and shared his confidence in TVA's range of future possibilities being within the bounds of what the IRP reported.

TVA's current asset strategy centers on the strategic direction of the 2019 IRP, near-term actions and key signposts. The approach is grounded in least-cost planning and involves several initiatives around TVA assets. Grau informed the Council of actions taken in response to the IRP recommendations. Among these was the evaluation of TVA's current resource models' coal end-of-life dates

In the nuclear space, steps have been taken to enhance TVA's overall performance with its existing fleet as TVA moves toward license renewal. He also emphasized the great effort within the innovation and research space to make advanced nuclear technologies a viable option as another carbon-free resource in the future.

Grau informed the Council of TVA's first pilot storage project, which will provide insight, both operationally and strategically, into how storage might assist TVA achieve more renewables across TVA's portfolio. According to the FY21 resource portfolio, 56 percent of the 160 terawatt-hours of energy provided on TVA's system came from carbon-free sources. Grau said TVA remains on track toward FY30 aiming for almost 65 percent carbon-free energy, nearly a 70 percent carbon reduction from a 2005 baseline. Working through the asset strategy and fleet modernization will enable TVA to continue delivering cleaner, more reliable energy for the next decade.

QUESTIONS/ANSWERS

Erin Gill inquired if there are plans to adjust the asset strategy considering recent or projected changes in dynamics. Grau emphasized from the evaluation of TVA's coal end-of-life dates and subsequent recommendations, planning assumptions for the retirement of the coal fleet are now in place. The most significant change from the 2019 IRP is the discussions and decisions around the coal fleet and its longevity. Because the change is on the output side, he does not consider it a critical driver for initiating a new IRP.

Jonathan Levenshus shared his enthusiasm over the pilot study underway. He asked what lessons the project will provide, and the barriers TVA must overcome for battery storage to be modeled and evaluated in the next IRP. Grau cited the challenge of converting the sites to long-duration storage. He noted that the Innovation and Research team is looking globally for options. Additionally, TVA continues its partnerships to help leverage its sites and infrastructure to be a test partner for gaining further insight. As technologies become more scalable, the aim is to have strong cost information and operational insight at the start of the next IRP planning process.

Mike Butler inquired if TVA would consider collaborating with agencies such as the Department of Agriculture and others to address rural communities' growing concerns about economic development-related issues. He discussed the negative impacts of solar greenfield developments on rural populations. He asked about best practices for solar infrastructure in terms of cost-effectiveness and efficiency.

Responding to Daniel Miller, Grau shared the breakdown of wind and solar as it now stands for FY22 through FY30, showing that TVA's wind contracts are driving the bulk. Moving nearer to the FY30 timeframe, Grau predicted that solar would account for the vast majority of the two. Lloyd Webb asked if the solar supply chain is a reason for concern due to rising costs, to which Grau responded that while he's not worried it's keeping an eye on how it can affect overall solar cost projections.

6. Recent Fuel Market Challenges & Rate Impacts – Brian Child, Vice President of Enterprise Planning

Brian Child presented the Council with an update on fuel market challenges and the potential rate impacts. Due to recent rises in natural gas and coal prices and volatility, TVA has made a concerted effort to convey this information in numerous forums. The immediate priority is to ensure the recent challenges do not compromise TVA's ability to meet power demand for the 21/22 winter season. Child told the Council that TVA's diverse portfolio works well in these times as over half of TVA's power comes from carbon-free sources, which are unaffected by changes in fuel price. In addition, TVA uses hedges to offset the impact of price volatility on susceptible assets. This winter 21/22, Child said, rates will be affected. While hedges help lessen the effects, TVA expects average residential in-use customers to see monthly rates rise by $5 to $10.

Child outlined several factors that led to the industry-wide fuel impacts. The widespread emergence of COVID-19 in early 2020 reduced demand, resulting in record low gas prices and a disruption of the coal industry. He shared that, at one point, TVA's electric loads dropped by around 10 percent. As the economy entered a sharp recession, demand for natural gas fell on several mini fronts. This loss from the beginning of COVID-19 drove record-low natural gas prices, making natural gas power cheaper than coal for many utilities. Although TVA has

reclaimed lost load, a demand spike created price instability and winter fuel supply concerns. The rise in coal demand has caused prices to rise. Child cited the Henry Hub pricing of coal and gas, showing how both appreciated from November 2020 to October 2021. Natural gas was under three dollars for the first nine months of 2021, trading up to six dollars by October 2021. During the same period, coal prices nearly tripled, but without the scale of relief trending with gas costs.

Child said that in 2021, TVA's annual energy sales are on track to be the highest since 2008. The current forecast indicates that the increased loads will continue, suggesting a robust economic recovery is driving commercial and industrial demand. Additionally, he mentioned that Ford's capital investment and the growing number of people moving to the TVA region are driving load growth.

Child updated the Council of TVA's urgent focus on system resilience and actions taken in preparation for the upcoming winter season. Conservation activities have been initiated to rebuild the coal inventory, ensuring TVA has an adequate supply for the winter season. Child emphasized that the coal inventory is contracted, and TVA has extended financial incentives to transportation providers to satisfy the contracted demands. TVA has increased firm transportation for simple cycle CT supply. Regarding gas, TVA's physical supply is expected to be sufficient for the upcoming season; TVA will continue to assess the feasibility of off-system energy and capacity purchase opportunities that may help keep rates even lower.

Child assured the Council that TVA is well-prepared to deal with any rise in volatility. TVA's broad portfolio is 80 percent hedged, 100 percent of the gas requirements for the upcoming winter season are physically contracted, and 40 percent of that is locked in at under three dollars. The coal and natural gas price curves indicate backward dates and collapse toward budget levels in the 2024-2025 timeframe, impacting fuel rates. This suggests a temporary market disruption rather than a fundamental market change. Child noted TVA's physical supply in natural gas, which includes six major pipelines and the East Tennessee Gas pipeline, that pass near or through TVA's service territory, provides access to some of the largest and most liquid markets in the United States. Storage allows TVA to change dispatch options to conserve coal supplies as winter approaches.

Child recounted to the Council that price hikes in recent months and declines in recent weeks indicate a high level of natural gas and coal volatility. While TVA is not immune, having a resilient and diverse portfolio provides numerous structural advantages in securing fuel supply and minimizing the impact of fuel price volatility. TVA hedges a portion of its coal and natural gas needs to insulate TVA customers from further price volatility. With its well-diversified portfolio and a fuel supply position among the most resilient in the industry, TVA currently has top quartile retail rates. TVA's rate competitiveness will remain strong as all utilities with natural gas or coal generation are encountering similar challenges.

QUESTIONS/ANSWERS

Several members asked Child to differentiate between the FY22 Forecast and the FY22 Plan regarding the movement in market fuel prices. Child explained that the FY22 Plan is embedded in the budget and subsequent projections, while the FY22 Forecast contains current data and commodity estimates.

7. Pricing Fundamentals – Cass Larson, Vice President of Pricing & Contracts

Cass Larson described TVA's pricing fundamentals to the Council, noting how the TVA Act defines how rates are determined, differing from other utilities. The TVA Act authorizes the Board to set TVA's power rates. Keeping the system feasible requires that the rates cover the total costs of providing electric service and a margin for reinvestment in new assets. TVA rates are set as "low as feasible" and should not be discriminatory between customers of the same class. The value of hydro assets is intended for residential customers, with industrial sales a secondary objective. Larson added that TVA wholesale power contracts with LPCs often state the retail rates for redistribution.

Larson distinguished between rate adjustments and rate changes. He said TVA adjusts rates uniformly to guarantee that the correct amount of revenue is collected. Rate adjustments will not be in effect until approved by the Board. Adjustments can raise or lower rates across all customer classes and are based on overall requirements rather than effective rate design changes. Rates are often adjusted once a year; however, there have been periods without adjustments lasting years. While there are no plans for rate adjustments through 2030, the Board could decide to make changes if necessary. A rate change is a fundamental change in the structure of the rate. A change is initiated by issuing a letter notifying customers of the need to change the structure, starting a minimum six-month negotiation period, where TVA and LPCs endeavor to reach an agreement. The TVA Board must approve the rate change, and wholesale rate changes should support retail rate changes.

Larson provided an overview of the various customer groups TVA serves. TVA sells power to two main customer groups: LPCs (153) and Directly Served Customers (60). LPCs distribute the power to their diverse customer base ranging from residential to commercial, at one of two rate structures. Collectively, LPC's serve Residential Customers (4 million), Small Commercial & Industrial Customers (GSA) (700,000), Large Commercial Customers (100) and Large Industrial Customers (400). The "Standard Service" rate structure states the retail rate that the LPC distributes power for residential and GSA customers. Rates are set the same across all these purchases. The LPC then works with TVA to allocate customer rates between the Residential and GSA groups. Large Commercial and Large Industrial customers purchase power from LPCs with a Large Customer Classes (BCDs) rate structure. The rate applied to BCD purchases is the same as that assigned to TVA's 60 Directly Served Customers.

Regarding TVA's rate components, TVA's revenue sources include directly served customers and LPCs. Rates are allocated differently across customer groups based on power use; thus, the price must be adjusted proportionally to account for TVA costs. Larson depicted the customer load shapes of four customer groups, emphasizing the necessity of determining which customer groups are driving the winter and summer peaks and knowing how they utilize power differently. He pointed out that TVA's cost to serving customers is determined by how much energy they use over time.

Larson demonstrated how LPC load distribution profiles fluctuate in appearance and cost depending on the customer mix. He cited capacity and energy as significant pricing components. Capacity costs are fixed and derived from TVA assets, but energy costs are variable and mainly determined by fuel and purchased power. Four steps are involved in developing fair rates: revenue requirement, costs of service, revenue allocation and rate design.

Larson presented the Total Monthly Fuel Cost (TMFC) Report to the Council, detailing TVA's wholesale monthly cost history from 2012. The report captures customers' fuel costs by service

class and rate group: 1. Standard Service customers are charged at the system-level rate; 2. Large Manufacturing customers are charged at the two-class rate; and 3. Large General Service customers are charged at the three-class rate. TVA has changed the TMFC across time to improve cost recovery based on cost causation. Larson attributed decreased natural gas prices to TVA's portfolio diversification. He said that buying natural gas while prices were low was part of the diversification strategy. As a result, TVA customers profited from a share of the base rate. By establishing three service classes and rate groups, rates were made more accurate and fairer. According to six industry guiding principles, rates must cover costs, track service costs, send price signals, balance precision with simplicity, be stable, and be competitive and affordable.

The best rate structure, Larson said, balances tensions such as average versus marginal costs and alignment to cost versus customer acceptance. The factors of customer acceptance include the ability to lower bills by shifting load, minimizing bill impacts and reducing the percentage of rate changes month to month. Cost alignment is TVA's driving goal because if costs align with how TVA collects revenue from customers, they can make decisions that minimize costs. In this scenario, the whole System – customers - have lower rates. He mentioned TVA injecting more fixed costs into the rates while lowering variable costs a few years ago. He said that aligning costs well reduces rates for everyone; however, many concerns still exist among customers. He again mentioned the significant difference between a rate adjustment and change. A change in the rate structure always positively or negatively impacts the customer, creating tension for those experiencing an unfavorable change. Larson also explained this effect on low-income residents with the highest energy burden. Balancing all the factors, Larson stressed the need to look at the people whom any changes will impact.

Larson provided the total cost versus marginal cost report to assess price signals and overall costs. Distinctions are outlined between flat rates, marginal cost, and time of use (TOU) pricing. Market fluctuations cause marginal costs to shift above and below the flat rate and often balance simplicity and accuracy. Tensions can arise due to marginal costs falling below the flat rate, as it would not be feasible to adjust rates for this. Larson pointed out that paying the marginal costs helps TVA's system, but he also points out it would be in addition to the flat rate collected. He mentioned TOU pricing as an option for pricing rates. TOU rates intend to provide price signals that encourage customers to shift their power use from those times of peak demand by charging a premium during those peak hours. The most important factor, according to Larson, is the overall total cost versus fluctuating marginal costs.

Larson described TVA's evolution regarding rate changes from 1992 to the current period. He described changes in the industry environment that occurred over time. As TVA's primary focus is to minimize overall rates for all customers, TVA's additional focus also changes and lines up with what's going on in the industry. He said that rates are designed based on both focuses. He highlighted the different points on the timeline, linking the industry environment, TVA's focus and the rates design for each period. As of 2019, the industry environment maintains its focus on clean energy. Larson linked TVA's additional focus to powerful partnerships for driving TVA's actions with the industry's environmental emphasis on clean energy. The associated rate design supports long-term partnerships and flexibility. Under this design, long-term agreements were created with LPC's, enabling them to do more local solar. Larson reiterated that focus changes over time, and therefore he said it's helpful to think about environmental changes and TVA's focus, which ultimately manifests itself in rate design.

TVA offers additional products, including response, operational flexibility and customer-specific credits. Response products include interruptible power, instantaneous response products and

two-part real-time pricing products, all of which help the TVA system and those customers able to respond save money. Operational flexibility credits help customers at initial start-up, understand the rates, and provide flexible onboarding to lessen the high-cost burden. Describing one customer-specific credit, Larson said the investment credit allows TVA to align with the mission and support economic growth in the Valley.

QUESTIONS/ANSWERS

Cass Larson and Council members Erin Gill and Lloyd Webb discussed customer rate classes, the TVA Act in practice, competition and the energy burden in further detail.

8. Closing Comments

Chair Jennifer Mundt expressed her appreciation for everyone's time and attention. She felt it was helpful for the Council to receive this type of information and learning and wished everyone a happy and healthy holiday season.

DFO Melanie Farrell conveyed her appreciation to the Council and her peers. She credited the RERC for assisting TVA in identifying priorities among competing objectives. She is enthusiastic for the next in-person meeting and wished everyone a happy and safe holiday season.

Approved by

Signed March 9, 2022

Melanie Farrell Date
Designated Federal Officer

Appendix A
Non-Council Meeting Attendees

TVA Staff Members	
Pamela Anderson	Khurshid Mehta
Jennifer Brundige	Deborah Murray
Brian Child	Barbara Ann Perdue
Cathy Coffey	Andrew Scalf
Kayla Counts	Spencer Sessions
Ashley Farless	Timothy Smith
Melanie Farrell	Kristin Spearman
Eric Grau	S Stewart
Althea Jones	Lauren Turner
Cass Larson	Liz Upchurch
Jo Anne Lavender	Charlotte Vickers
Clifton Lowry	

Stakeholders	
Claudette Ayanaba	Daniel Metzger
Al Berrong	Bhawramaett Punruckwong Broehm
Trey Bussey	Maggie Shober
Miriam Makhyoun	Brady Watson

RERC Meeting Agenda
December 8, 2021
Virtual
All times are EDT

9:00	**Call to Order –** JoAnne Lavender Facilitator **Welcome –** Jennifer Mundt, RERC Chair; Althea Jones, Senior Manager of Stakeholder Relations and TVA Committee Management Officer (CMO); and Melanie Farrell, VP of External Strategy & Regulatory Oversight and the RERC's Designated Federal Officer (DFO) **Safety, Introductions, Agenda -** JoAnne
9:30	**Public Listening Session -** JoAnne
10:00	**5th Term Overview –** Althea Jones & Jennifer Brundige, Attorney of Regulatory Law and TVA Office of General Counsel
10:15	**TVA Update –** Melanie Farrell
10:35	**Transmission and Planning –** Kristin Spearman, Vice President, Transmission Planning & Projects
11:15	**Break**
11:30	**Long-term Resource Planning –** Brian Child, Vice President of Enterprise Planning & Eric Grau, Director of Resource Planning & Strategy
12:15	**Pricing Fundamentals –** Cass Larson, VP of Pricing & Contracts
12:50	**Closing Remarks and Adjourn**