

**Regional Energy Resource Council (RERC) Minutes  
Tennessee Valley Authority  
May 23 and 24, 2022**

**Meeting location:  
Oak Ridge National Laboratory  
Oak Ridge, Tennessee**

The Tennessee Valley Authority (TVA) Regional Energy Resource Council (RERC or Council) convened for the 2<sup>nd</sup> meeting of the 5<sup>th</sup> term, beginning at 1 p.m. Eastern on Monday, May 23, 2022.

**Council members attending in-person:**

Erin Gill (Chair), Dan Miller, Pete Mattheis, Doug Peters, Patrice Robinson, Lloyd Webb

**Council members attending virtually:**

Mike Butler, Rodney Goodman, Chrissy Heard, Dana Jeanes, Candy Johnson, Jonathan Levenshus, Sen. Steve Livingston, Bailey Recktenwald, Kari Babski-Reeves, Alexa Voytek

**Designated Federal Officer:** Melanie Farrell

**Facilitator:** Jo Anne Lavender

- Appendix A – TVA staff and stakeholders who attended the meeting
- Appendix B – Agenda
- Copies of the presentations given at the meeting are available at <http://tva.gov/merc>

**Purpose**

The purpose of the meeting was to present information on TVA's transformative innovation initiatives, regional grid transformation and decarbonization technologies; learn about Oak Ridge National Laboratory's Innovation Crossroads program; and obtain an RERC Advice Statement for the questions, "What factors should TVA consider when investing in emerging technologies? What factors should TVA consider in establishing partnerships and stakeholder coalitions in order to develop emerging technologies?"

**1. Welcome and Introductions**

- A.** Melanie Farrell, the Designated Federal Officer (DFO), welcomed everyone to the meeting and announced that Erin Gill, a long-time member of the Council, is the new RERC chair. Gill offered words of welcome, as did Althea Jones, senior manager of TVA Stakeholder Relations, who also introduced TVA staff members in attendance and talked about the importance TVA places on community and public engagement.
- B.** Jo Anne Lavender, meeting facilitator, noted it was the RERC's 2<sup>nd</sup> meeting of the 5<sup>th</sup> term and the meeting was being recorded and the video would be posted on TVA's website ([tva.com/merc](http://tva.com/merc)). She welcomed everyone joining in person and virtually.
- C.** Jennifer Brundige, with TVA's Office of General Counsel, reviewed the meeting requirements, noted that topics for meetings can be submitted by RERC members and non-members to the DFO for consideration, and explained that the Council's advice statement would be delivered to the TVA Board of Directors' External Stakeholders and Regulation Committee. RERC member Lloyd Webb wanted new Council members to know that in developing the advice statement, all members have

a chance to offer their opinions during back-and-forth discussion before the draft statement is written and again when it is refined by the Council.

**2. Designated Federal Officer Briefing — Melanie Farrell**  
(Presentation can be found at [www.tva.gov/rerc](http://www.tva.gov/rerc))

Melanie Farrell provided an update on the TVA Board of Directors. Three TVA Board nominees — Beth Geer, Robert Klein, and L. Michelle Moore — appeared at a hearing of the U.S. Senate Committee on Environment and Public Works Subcommittee on Clean Air, Climate and Nuclear Safety on April 6. Next, the nominees' names will move to the full Senate. RERC member Lloyd Webb asked if all three needed to pass through the nomination process at the same time. Farrell followed up that nominees move through the nomination process individually.

Highlights of the Board's May 2022 meeting in Young Harris, Georgia, included:

- The release of TVA's FY 2021 Sustainability Report, which documents TVA's performance in decarbonization and describes TVA's latest work in energy, environmental stewardship and economic development
- A presentation on TVA's commitment and work to keep energy rates low and reduce energy burden for lower-income individuals in the Tennessee Valley.

Farrell also reported that:

- TVA's New Nuclear program was a key focus at the February Board meeting. TVA has established a program focused on new nuclear research and development, and at its Clinch River Nuclear Site in Oak Ridge, Tennessee, it will be working with partners to explore potential small modular reactors (SMRs).
- TVA is continuing to be supportive of Memphis Light, Gas and Water (MLGW) as the power company evaluates alternative power supply providers. TVA provided information for MLGW's RFP process.
  - Dana Jeanes, a Council member and with MLGW, said the power company plans to present its analysis and work with the RFP to its Board and Memphis City Council on June 9.
- TVA provided support in communities that experienced severe weather events in the past year. TVA is proactively looking for ways to strengthen and expand its partnerships with local power companies to respond to communities in need.
- TVA is a member of the Southeast Energy Exchange Market (SEEM), which is looking to establish an intra-hour energy exchange. FERC has approved the exchange platform. SEEM plans to go live in the fourth quarter of 2022 but may face legal challenges.
  - RERC member Lloyd Webb recommended that TVA invite someone with knowledge of how TVA handles its supply/demand balance to speak at an RERC meeting.
  - Farrell said that may be possible for the Fall RERC meeting, which will include information on TVA's new System Operations Center and how TVA plans to manage its system as it transitions to more renewables.

As a lead-in to the day's presentations, Farrell highlighted TVA's *Strategic Intent and Guiding Principles* document, which was published in May 2021, approved by the Board of Directors and outlines key activities TVA is undertaking to advance its position and goals around decarbonization.

### 3. **Transformative Innovation Initiatives** (Presentation can be found at [www.tva.gov/merc](http://www.tva.gov/merc)) — Amy Henry, Director, Transformative Innovation, TVA

Amy Henry provided a comprehensive overview of TVA's transformative innovation initiatives and the role they will play in reducing carbon emissions. TVA has reduced its carbon emissions about 60% since 2005. It sees a path forward to reducing its carbon emissions ~80% by 2035, and it aspires to achieve net-zero carbon emissions by 2050. Reaching the last 20% will require research and development, because this advanced technology is not available today at the scale and cost needed to reach net-zero.

Henry explained that decarbonization is important for many reasons, including that it protects and preserves the environment; helps attract major businesses to the Tennessee Valley; meets consumer and investor demand for clean energy; and will help companies meet possible climate legislation or regulations in the future.

TVA projects that the demand for electricity will continue to increase, and it is considering innovation in five key areas — its fleet (power generation system); how it delivers energy; natural resources stewardship such as soil sequestration; Valley innovation such as improving energy efficiency; and new energy technologies. Henry said all of the areas have exciting possibilities, and all require work with the federal government to develop these solutions.

Henry described TVA's six signature transformative innovation initiatives, all of which include working with partners to invest in new technologies and new business practices that support the energy system of the future. The initiatives are:

- **Storage integration:** Developing the mechanisms to store energy for long durations and discharge it when needed
- **Advanced Nuclear Solutions:** Working with partners to develop small modular reactors and other technologies for reliable, affordable, flexible nuclear energy
- **Decarbonization Options:** Pursuing techniques such as carbon capture and sequestration as well as the development of alternative fuels
- **Regional Grid Transformation:** Partnering with local power companies to develop an interconnected, intelligent grid able to reliably deliver power as it evolves
- **Electric Vehicle Evolution:** Working closely with local power companies and other organizations to remove barriers to electric vehicle use, including developing a Fast Charge Network with charging stations every 50 miles throughout the TVA service territory
- **Connected Communities:** Expanding smart technologies with communities to manage energy and services.

TVA can't transform its system alone. Henry emphasized that partnerships with local power companies and other organizations are critical in maintaining the public power model and building the energy system of the future. She explained that these innovative partnerships provide benefits to every organization involved. Partners such as the Electric Power Research Institute (EPRI) and U.S. Department of Energy National Labs provide TVA with expertise, solutions, research and peer exchange, while TVA offers them real-world applications, feedback and information on customer expectations. Achieving decarbonization solutions will require everyone working together toward a carbon-free economy.

### QUESTIONS/ANSWERS

RERC members asked a number of questions about TVA's innovation priorities, funding and how it plans to stay true to its mission — which is to improve lives by providing low-cost, reliable, safe, clean energy; encouraging economic development that attracts jobs and investment to the region; and being an environmental steward that protects and preserves natural resources.

Henry said the priority is to decarbonize and create cleaner (while also reliable and low-cost) energy. To that end, TVA considers all options and evaluates: What are the affordable solutions? What else is changing in the world? How can we be agile to focus next year's plans and funding around the best opportunities? Henry said TVA incorporates innovation and a long-range view into its annual business planning and makes early investment in smaller-scale projects so it knows it is making reasonable decisions when the projects expand into large-scale projects. She said TVA also works closely with partners to address common challenges, leverage expertise and invest together to reduce risks for all organizations involved. TVA connects economic development opportunities to each of its signature transformative innovation initiatives. Melanie Farrell noted that TVA's *Strategic Intent and Guiding Principles* document is intended to help TVA stay true to its mission as it considers innovative technologies.

RERC members said TVA is a leader in carbon reduction and has many opportunities to bring improvement and help residential and business end-users as well as the entire region. They noted that the responsibility also brings challenges and wondered how these challenges might influence the long-term transformative innovation initiatives. Henry said while there are day-to-day challenges such as supply chain shortages, the biggest challenge is planning ahead and relying on technology that is still being developed. TVA checks assumptions and considers if there is something better that should be added to the vision. There are a lot of moving parts, and TVA is always scouting for new possibilities and partners — in the federal government, state governments and organizations throughout the TVA service area.

One RERC member asked how TVA is partnering with private sector groups. Henry said TVA is partnering with the private sector in a couple ways, including working with partners to establish initiatives such as Connected Communities and working with entrepreneurs to advance their visions and develop solutions that advance TVA's mission.

Other RERC questions/comments and TVA answers included:

- Whether TVA's decarbonization goals consider scope 1 (direct emissions), scope 2 (indirect emissions) and scope 3 (other emissions.)
  - TVA's goals consider all scopes.
- A suggestion that home energy management systems must include automatic metering infrastructure.
  - Henry said TVA agrees that interconnectedness is important and will continue to work with local power companies and community partners to ensure the whole system works together.
- It will be important for TVA to partner with utilities on innovation projects.
  - TVA is working with local power companies on pilot demonstrations for different technologies.
- As TVA considers energy storage, it should consider water heaters, which act as thermal batteries.
  - Henry said TVA is looking for any kinds of solutions that can make energy more efficient to deliver, use, distribute.

- Sometimes people think solar energy will solve all carbon issues, but it is helpful to hear the other side — about these new technologies and the challenges TVA is considering.

#### **4. Regional Grid Transformation (Presentation can be found at [www.tva.gov/merc](http://www.tva.gov/merc)) — Jason Krupp, Senior Project Manager, TVA Enterprise Research & Technology Innovation**

Jason Krupp introduced the topic of grid modernization by discussing how megatrends such as digitalization, distributed energy resources and people's interest in clean energy are prompting utilities to look differently at their systems. TVA and utilities across the country are establishing aggressive carbon reduction goals, and nearly all U.S. states took actions related to grid modernization in 2020. "Grid transformation" covers an umbrella of technologies, including energy storage, distributed energy resources, smart grids and micro grids, to name a few.

Krupp noted that an integrated grid is one that is flexible, resilient and interconnected. An integrated grid requires two-way power flow and distribution with the right sensors, systems and fiber-optic networks for real-time communications. More distributed energy resources on the system will require close communication between TVA and local power companies, so that TVA is familiar with local power companies' forecasts and how to best meet their needs.

Related to transformative innovation, TVA is conducting strategic road mapping and planning that looks out five years, 10 years and beyond 10 years. TVA established a steering committee and working team with nine of its 153 local power company partners to understand their needs and identify the path to achieve their goals. The vision is to align stakeholders and determine common strategic needs, because collaboration reduces risk for everyone involved. In addition to visioning, the committee will work on research and engagement, determining roles and formalizing initiatives, aligning interests and forming future visions, identifying common strategic gaps and allocating resources, executing actions and implementing change management plans, tracking and reporting progress, and refining the process.

Krupp noted that TVA is building a resilient, flexible and integrated electric system that meets Valley customer needs of the future. As TVA plans for the future, it is considering how to leverage automatic metering infrastructure data; evolving customer needs; Valley-wide integrated planning; transmission and distribution level situational awareness; and common standards and architecture. All of the considerations are related to helping the end-use customer, and together, local power companies and TVA need to understand what electricity growth and distributed energy resources will look like and how systems will communicate and share information. Regional grid transformation capabilities must include exceptional end-user experience, integrated planning, enhanced transmission and distribution operations, regional policy guidelines, and grid transformation enabling.

The vision of the future is a grid that is integrated, reliable, resilient, safe and sustainable. It touches everyone — utility end-use customers, energy solution providers, regional stakeholders. TVA plans to share its best practices as well as learn from others' best practices. There is a lot of value to an integrated grid, including improved efficiency, resiliency, reliability, clean energy and affordability.

#### **QUESTIONS/ANSWERS**

One RERC member pointed out that the slide about Grid Transformation Drivers might imply that areas of the country are not aggressive about emission reductions or renewable energy targets, when in fact they are aggressive in certain markets or with certain policies.

A Council member commented that perhaps the discussion of stakeholder engagement centers more around risk than engagement, and noted that when sharing risks, venture capitalists are a critical stakeholder category. Krupp said TVA asks itself, who do we need to bring in? It has been focused on working with local power companies and is aligning with current stakeholders to determine where there are distributed energy resources on the system, then will look at venture capitalists and their investments. Asked about where the U.S. Department of Energy (DOE) fits in, Krupp said TVA is working with the Electric Power Research Institute, DOE and local power companies on pilots with multiple distribution storage devices, and that to his knowledge, other entities are not working on distributed energy resources with venture capitalists at this point. Amy Henry said stakeholders have a role in the process. Local power companies have a role on the grid, and the purpose of stakeholder engagement is to find representatives who are seeing the same issues and figure out mutual descriptions of where they want to go and how they will get there. The road map helps the broader group, because when making investments, the partners are working to achieve a new shared vision.

One member expressed caution that if a company adds distributed energy resources to the grid, it should not be charged for them as well. Krupp said TVA and local power companies will be sure the cost isn't shifted.

#### **5. Decarbonization Technologies (Presentation can be found at [www.tva.gov/erc](http://www.tva.gov/erc)) — Andrew Campbell, Senior Project Manager, TVA Enterprise Research & Technology Innovation**

Andrew Campbell described TVA's decarbonization journey and the innovation it is pursuing to balance reliability and low rates while working toward net-zero. TVA has reduced its carbon emissions about 60% since 2005. It sees a path forward to reduce its carbon emissions ~80% by 2035, and it aspires to achieve net-zero carbon emissions by 2050. Campbell's work is with innovations that will help TVA move from 80% reduction to net-zero. TVA's Enterprise Research & Technology Innovation is advancing a suite of technologies — carbon capture, sequestration and utilization; alternative fuels; renewables and storage; electrification; and advanced nuclear — to cost-effectively reduce TVA's carbon footprint to net-zero.

Campbell explained that research is being done to determine ways that, in the future, carbon dioxide could be captured and potentially used to make something else or liquified and moved to a long-term storage location. He acknowledged that it is a complex and expensive problem to solve. Campbell also talked about a self-sustaining hydrogen economy, which is estimated to be at least 15 years away. Research and development are being done to evaluate ways that hydrogen could be used in chemical processes in different business sectors in the future. Campbell said there is research being done on synthetic-carbon fuels in which the carbon dioxide could be recycled and reused, but it will be a long time until that technology is fully developed.

TVA is actively pursuing advanced nuclear technology, which provides reliable, affordable, flexible and clean generation options. TVA is partnering on small modular reactor (SMR) technologies that offer zero carbon emissions. Campbell noted that TVA has a permit for SMR research at its Clinch River site. SMRs are different from traditional nuclear plants because they are smaller in size and easier to manage; have simpler designs and fewer components to

operate and maintain; are easier to integrate onto the grid; and enhance safety because they have less risk and more passive safety features. As they develop, SMRs might add additional load to the system and help in TVA's decarbonization efforts. TVA started working with partners on advanced nuclear technologies in 2009. Today, it is in a detailed planning phase. Pending multiple decision gates, construction of the first project at Clinch River could begin as early as FY 2026 — with licensing of additional sites to follow.

TVA's goal is to have a reliable, affordable, flexible and clean advanced reactor option available by 2032, without adversely affecting its customers. It is partnering with utilities and government agencies to mitigate costs and risks associated with a first-of-a-kind deployment, and it is working with universities and research institutions to leverage technology innovations and lessons learned.

## **QUESTIONS/ANSWERS**

RERC members asked about partnerships TVA is developing as it pursues innovative technology initiatives. Amy Henry said TVA is developing a lot of different partnerships within industry consortiums as well as with universities' academic departments and the U.S. Department of Energy. She said TVA also is engaging startups and venture capitalists, from entrepreneurs to scientists to businesses developing new technologies for removing carbon. TVA also is working with business accelerators in which an entrepreneur has an idea and receives assistance to speed up development. TVA invited Dan Miller, an RERC member and staff member at Oak Ridge National Laboratory, to make a presentation on the laboratory's work with startups and venture capitalists.

A Council member asked if future costs are based on the front end for cleaning aspects of direct air capture. Campbell said the industry is trying to figure that out. Flue gas capture is only getting 95 to 97 percent, and researchers are trying to determine how to supplement capture to achieve 100 percent equivalent. Technologies that have it are expensive right now. Industry currently is modeling different versions.

Another RERC member noted that companies are engaged with the Department of Energy and others on gas using hydrogen, noting that a couple car companies have products with 30% hydrogen and industry uses natural gas in products. In today's industry, this is not the way product is delivered; need investment in hydrogen pipelines. If looking to produce hydrogen, have a long way to go. Campbell noted that TVA and partners are looking into hydrogen blending, but he believes a lot still needs to happen and that it will be 10-plus years until it is worked out.

A Council member asked if TVA commented to the Council on Environmental Quality's (CEQ's) interim guidance on Carbon Capture and Sequestration (CCS) and if those comments would be available. Amy Henry said she would let them know if comments were provided. The Council member said the technology is in its infancy, so there should be careful consideration for advancing CCS technology, especially on coal plant retrofits.

Another Council member asked if the waste profile is any different for SMRs, and Campbell said he believes they are more fuel efficient.

**6. Innovation Crossroads Overview** (Presentation can be found at [www.tva.gov/lerc](http://www.tva.gov/lerc)) — **Dan Miller, Director, Innovation Crossroads, Oak Ridge National Laboratory**

Dan Miller explained that Innovation Crossroads is a program that recruits entrepreneurs to work with Oak Ridge National Laboratory staff to develop technology that goes into early-stage businesses. Entrepreneurs have an idea and sometimes have product sales, and they are able to work at the laboratory and utilize resources to help them grow their businesses. Organized with the Oak Ridge Institute for Science and Education, the program offers fellows research and development funding, a stipend and benefits. While in the program, fellows are surrounded with mentors and resources and receive a lot of support. The first cohort was in 2017. The program is sponsored by Oak Ridge National Laboratory (ORNL), the Department of Energy, and TVA.

TVA has been a mentor since the program started in 2017. Since its inception, Innovation Crossroads has supported 26 startups, awarded \$33 million in funding, created 84 jobs, raised \$21.9 million in venture capital, launched eight products and created \$1.7 million in sales. Miller said that follow-on funding is increasing exponentially.

ORNL believes it is important to recruit people from across the country and encourages them to work in the Tennessee Valley after they complete the program, because it grows the entrepreneurial ecosystem in the region. The program connects innovators to as many resources as possible. Miller offered examples of innovators who have gone on to create products and companies such as one that reclaims elements in used batteries and another that turns food waste into hydrogen.

## **QUESTIONS/ANSWERS**

A Council member asked Miller to describe the goal of the program. Miller said DOE's goal when it started the program was to leverage the laboratory to help entrepreneurs create commercial, high-impact technology to affect the U.S. economy. The spirit of the program is to direct technically talented people toward entrepreneurship. The Council member said scalability is important. Miller said Innovation Crossroads is an early-stage program with a rigorous down-select process. Applicants must demonstrate they can work in a national laboratory, and a criterion is that the entrepreneur hasn't raised more \$2 million of private money.

### **7. Advice Questions and Thank You**

In wrapping up Day 1 of the meeting, TVA reviewed the Advice Questions again, with the idea that the Council would have discussion about the questions on Day 2 of the meeting.

Melanie Farrell thanked the RERC for its engagement and commented that she hopes they see how much TVA is focused on the future and committed to finding the right balance, which ensures reliable, low-cost, clean, safe energy while also paying attention to evolution in the industry.

### **8. Welcome Back and Review of Day 1**

TVA welcomed the RERC members back for Day 2, reviewed the information discussed during Day 1, and noted that there is often a public listening session during RERC meetings, but no one signed up to speak at this meeting. TVA encourages the public to sign up to speak to the Council and also to send in comments. Facilitator Jo Anne Lavender reviewed the advice questions and opened the floor for comments from RERC members.

### **9. Advice Questions and Discussion**



The advice questions were “What factors should TVA consider when investing in emerging technologies?” and “What factors should TVA consider in establishing partnerships and stakeholder collaborations in order to develop emerging technologies?”

Council members were asked to weigh in on the topics before a draft advice statement was prepared. Comments and suggestions included:

- As TVA moves forward on innovation, the most important consideration of each initiative will be ensuring that it serves TVA's mission of service.
- TVA should consider commercial viability prior to making decisions on new technologies to minimize risk to ratepayers.
- This work will require the rigorous scrutinization of financial and economic prospects of innovative technologies to avoid wasted capital and stranded costs.
- TVA needs to consider energy burden, and equity should shape policy decisions.
- It will be good for TVA to focus on distribution as well as transmission and generation, and to invest in technology that better integrates the grid and manipulates the load to lower emissions without having to move into riskier technologies.
- Having the right partners at the table is key to creating synergy, minimizing risk and leveraging funding sources.
- As TVA transforms its system, goals at the corporate level will help set priorities and inform technology decisions. Setting priorities in partnership with local power companies and direct-serve customers will be important, too.
- It is important for TVA to describe these technologies and future plans in ways that the public will understand. Communicate in easy-to-understand ways about spending and how these new technologies will make their utilities more effective and efficient.
- Advanced metering infrastructure (AMI) will be critical in transforming the system. How will TVA handle it when a local power company does not have funds to invest in AMI? How will TVA deal with fairness issues since some companies might make the investment but not others?
- Financial feasibility is important. Investing in a resilient grid should be the first focus, and energy burden — environmental justice — should be a priority. It will be important to make sure community members have a stake at the table.
- Think of readiness levels like a ladder. TVA has done a good job and is continuing to invest at every level. Investments get bigger the higher you get on the ladder. But there are also investments at the bottom of the ladder in time and mentoring, and those investments can pay dividends as you move up the ladder. It is important to stay involved at every step of the ladder.
- On the industrial side, companies need an environment that encourages demand response. It may be worth having a session with industrials to see what they could offer.
- With everything going on in the world, TVA should bear in mind its role to work with domestic partners to protect the energy independence of the United States.
- Power quality is important. There needs to be policy support and a framework, so all customers and stakeholders integrate, understand, use them.
- The methodical way TVA is approaching the technology gap between 2022 and 2050 is striking. The ability to ground the truth and science with individual applications holds a huge amount of opportunity.
- The ability of TVA to stay focused and narrow down initiatives now versus well into the future is important.
- A lot of companies have their own sustainability goals. How can TVA, industry and other partners collaborate? Valley Vision 2035 is a newer initiative having similar

conversations and thinking about the future of the energy sector. It would be good to bring that conversation to the RERC.

- These topics are complex, and TVA could use artificial intelligence resources to gain approaches to process these massive amounts of information.
- There should be a distribution integrated resource plan (IRP) that could be woven into TVA's overall IRP to develop even better data.
- TVA needs to remain competitive and meet the requirements of the TVA Act. All utilities are going through the same thing — conversations are the same, drivers are the same — but as a public power company, TVA can't just set its own agenda and raise prices. TVA is doing everything it can to keep base rates flat for the next 10 years.

After the Council's comments, RERC Chair Erin Gill and TVA staff met to draft a preliminary advice statement. The Council discussed the draft and made tweaks, and a minority opinion was provided. Then, the Council voted unanimously on the Advice Statement below.

## **10. Closing Comments**

Erin Gill, Chair, thanked everyone in person and online for their participation.

Melanie Farrell thanked the Council on behalf of TVA and its Board of Directors for its dialogue and said TVA welcomes topics for discussion. The next RERC meeting is scheduled for Oct. 3<sup>rd</sup> and 4<sup>th</sup> in Chattanooga and a joint meeting with the Regional Resource Stewardship Council (RRSC) is slated for Nov. 3<sup>rd</sup> in Nashville.

## **RERC Advice Statement regarding TVA's Six Transformative Innovation Initiatives**

**May 24, 2022**

The Regional Energy Resource Council (RERC) recognizes and supports the building of a strategic, resilient, flexible and clean integrated electric system. The Six Transformative Innovation Initiatives support TVA's mission because they meet Valley customer needs. The six initiatives are: *Decarbonization Options, Advanced Nuclear Solutions, Storage Integration, Connected Communities, Electric Vehicle Evolution and Regional Grid Transformation.*

The RERC also recognizes the importance of strategic partnerships and stakeholder coalitions to implement these transformative initiatives. Carbon-free electricity is a national and global challenge that TVA cannot solve on its own. The Council supports and expects TVA's continued leadership in advancing these Transformative Initiatives.

In pursuing both technology and partnerships, TVA should stay true to its mission and focused on the six initiatives that exist on the transformation pathway. TVA should adopt a consistent approach and articulate clear commitments toward research & development that is defined and steady across leadership transitions.

Technology initiatives and partnerships will need to stay focused while remaining agile to respond to factors like cost, commercial viability and applicability in the Valley.

### Factors critical for technology investments and initiatives include:

Affordability – What are the net costs to ratepayers? Do they consider TVA's social equity objectives? Can it be accommodated within the near-term commitment on base rates?

Applicability – Can they be deployed effectively within the Valley to achieve intended result?

Reliability -- Can they effectively integrate into the grid while ensuring reliable, high quality power?

Resilience – Does it support the grid in incorporating additional technologies and maximizing their positive impact?

Carbon reduction – Does it support TVA's carbon reduction goals?

### When pursuing partnerships, our recommendations include:

- Partners must share the vision as well as costs and risks of advancing technologies.
- TVA should strengthen relationships and iteratively reinforce alignment with LPCs and Industrial/Commercial customers and Valley entrepreneurs. Commercial and Industry partners potentially have special relevance in helping identify and prove out applications in technology transfer.
- Investments in LPC or Industry partnerships must be made equitably and only after careful and transparent consideration.
- Strategic public communication and engagement is needed to help our region's residents visualize the transformation pathway and understand short term relevance and impact of longer-term efforts.

**Minority Opinion:** Jonathan Levenshus, Sierra Club representative, is supportive of TVA being a leader in innovation and decarbonization solutions. The Sierra Club supports five of TVA's signature transformative innovation initiatives: storage integration, regional grid transformation, electric vehicle evolution, connected communities, and decarbonization options. The Sierra Club does not endorse TVA pursuing the Advanced Nuclear Innovation Initiative.

**Appendix A  
Non-Council Meeting Attendees**

<b>TVA Staff Members (In person)</b>	
Rebecca Brinkley	Amy Henry (presenter)
Jennifer Brundige (OGC)	Althea Jones
Andrew Campbell (presenter)	Jason Krupp (presenter)
Cathy Coffey	Jo Anne Lavender
Ashley Farless	Barbie Perdue
Melanie Farrell	Marylee Sauder (contractor)
Trina Gallman	Andrew Scaf
Bekim Haliti	Lauren Turner
<b>TVA Staff Members (Virtually)</b>	
Pamela Anderson	Latricia Lloyd
Caitlin Baird	Khurshid Mehta (OGC)
Jennifer Bogus (TVA OIG)	Jessica Monroe (TVA OIG)
Maria Gillen	Elizabeth Upchurch
Leslie Golden	McKenzie Whitten
Cynthia Herron	

<b>Stakeholders (Virtually)</b>	
Al Berrong	Ken Neal
Martha Diezemann	Kevin Palmer
Joe Farless	Maggie Shober
Chase Hively	Brady Watson

**Appendix B**  
**Regional Energy Resource Council (RERC) Agenda**

**RERC Meeting – Day 1 May 23, 2022** All times are ET

1:00	<b>Welcome –Designated Federal Officer Melanie Farrell &amp; Chair Erin Gill Safety, Introductions, Meeting Protocols Agenda, Advice Questions</b>
1:35	<b>DFO Briefing</b>
1:55	<b>Transformative Innovation Initiatives</b>
2:30	<b>Break</b>
2:45	<b>Regional Grid Transformation</b>
3:15	<b>Decarbonization Technologies</b>
3:45	<b>Innovation Crossroads</b>
4:15	<b>Summary</b>
4:30	<b>Adjourn RERC Meeting</b>

**RERC Meeting – Day 2 May 24, 2022** All times are ET

8:15 am	<b>Welcome Day 1 Review</b>
8:30	<b>Public Listening Session</b>
9:00	<b>Discuss Advice Questions</b>
10:00	<b>Break</b>
10:30	<b>Finalize Advice Statement</b>
11:45	<b>Summary</b>
noon	<b>Adjourn RERC Meeting</b>