

Regional Energy Resource Council Minutes June 14, 2018

Tennessee Valley Authority Regional Energy Resource Council June 14, 2018 Meeting Minutes

The Tennessee Valley Authority (TVA) Regional Energy Resource Council (RERC or Council) convened for the third meeting of its third term at 8:30 a.m. EDT on Thursday, June 14, 2018, at the Chattanooga Hotel, 1201 Broad Street, Chattanooga, Tennessee 37402.

Council members attending:

Wayne Davis, Chair	Michael Butler	Rodney Goodman
Wes Kelley	Doug Lawyer	Peter J. Mattheis
Jennifer Mundt	Jeremy Nails	Alice Perry
Doug Peters	Stephen Smith	Charles Snavelly
Lloyd Webb		

Designated Federal Officer: Dr. Joe Hoagland

Facilitator: Jo Anne Lavender

Appendix A identifies the TVA staff, members of the public, and others who attended the meeting.

Appendix B is the agenda for the meeting.

Appendix C contains the consensus advice provided by the Council.

Copies of the presentations given at the meeting can be found at <http://tva.gov/lerc>.

1. Welcome

Dr. Joe Hoagland, TVA Vice President (Enterprise Relations and Innovations) and Dr. Wayne Davis (Chair of the Council) opened the meeting by welcoming everyone. Dr. Davis introduced the new Council member, Charles Snavelly (Secretary, Kentucky Energy and Environment Cabinet), to the group.

2. Safety Moment, Overview of Agenda, Meeting Protocols

Ms. Lavender, Facilitator, covered these items in her presentation (see Slide 8).

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3. FACA/RERC Orientation

Khurshid Mehta, Senior Attorney, TVA Office of the General Counsel, provided an overview of the Federal Advisory Committee Act, and the key provisions of the RERC Charter (Slides 10-15).

4. DFO Update

Dr. Hoagland provided a recap of two meetings held for Term 3 of the RERC, a TVA update, and the purpose for today's meeting (See Slides 16 to 21).

- At the two meetings of the Council's third term (held in November and December 2017), the RERC provided advice on the principles that TVA should consider when designing wholesale rate changes and the mechanisms to use to engage Valley stakeholders when making those changes.
- TVA continued on a trajectory to reduce its operating expenses by about \$800 million.
- The 1995 IRP focused on the vision, the 2011 IRP on meeting load through a balanced portfolio, and the 2015 IRP on increasing energy efficiency and renewable in the portfolio. By contrast, the 2019 IRP will focus on Distributed Energy Resources (DER), system flexibility, and portfolio diversity.
- Mr. Snavely asked whether the IRP is required under law and whether it has to be approved. Dr. Hoagland replied that the Federal Power Act requires TVA to use a least-cost planning program to evaluate the full range of existing and incremental energy resources in order to provide adequate and reliable service to its customers at the lowest system cost. TVA engages in the least-cost planning process through the development of an IRP. The IRPs developed by TVA are submitted to the TVA Board of Directors for approval.

5. 2019 IRP

Brian Child (Director, Enterprise Forecasting and Financial Planning) provided an overview of the IRP process, covering the 2015 IRP recommendations, the current portfolio, the TVA carbon story, and the goals of an optimal resource plan (Slides 22-27)

- In going over the goals for an optimal resource plan, Brian Child explained that "low cost" (one of the goals) does not amount to the selection of the cheapest option. Rather, it includes a number of factors such as the cost of a resource over its available life, including the cost of waste management and environmental compliance.

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- Brian Child explained the concepts of scenarios and strategies used in the development of the IRP, and how the two are combined to obtain portfolios that are assessed in the IRP.
- Stephen Smith asked whether TVA could provide the actual delta (i.e. changes since 2014) in the use of certain resources shown on Slide 23. Jane Elliott answered this question:
 - Energy Efficiency and Demand Response
 - + 500 MW growth in market Energy Efficiency
 - Natural Gas: + 2,900 MW (acquisitions, builds and PPAs)
 - Renewables: + 100 MW (Solar PPAs, TVA Programs)
 - Nuclear Upgrades: +450 MW by 2019 (all at Browns Ferry Nuclear)
 - Coal: - 4,000 MW
 - No new base load after Watts Bar 2 (1000 MW)

6. IRP EIS and Public Scoping Summary

Ashley Pilakowski (NEPA Specialist) discussed the purpose and approach for the Environmental Impact Statement, as well as the scoping effort, for the 2019 IRP (Slides 28-34).

- The 2019 IRP EIS will assess broad region-wide impacts on resources such as air quality, water resources, fuel requirements, waste production, land requirements, and socioeconomics and environmental justice.
- The period for public scoping for the 2019 IRP spanned from February 15, 2018 to April 16, 2018.
- TVA expects to finalize the scoping report by the end of July 2018.
- The major themes raised by the public in the scoping process: environmental justice impacts on low income households; interest in energy efficiency measures and energy storage alternatives; options for fuel diversification.
- Ashley Pilakowski clarified that the scoping report is different from the Draft EIS, which TVA expects to release for public comments in February 2019.
- Solicitation for scoping comments was disseminated through 7 member outlets and 2500 scoping notices.
- Liz Upchurch (Senior Program Manager, Stakeholder Relations) showed the Council the various locations on the TVA website where the IRP materials are located.

7. IRP Focus Area: System Flexibility

Aaron Melda (Vice President, Transmission Operations and Power Supply) provided an overview of the TVA transmission system; described the role of baseload, intermediate and peaking resources; explained winter and summer load shapes on the TVA system; and provided comparisons between a traditional power grid and a smart grid (Slides 40-45). His presentation also covered locational values for the Compound Annual Growth Rate (CAGR) for sub-regions within the Tennessee Valley.

- Stephen Smith sought clarifications for the 5000 MW solar penetration assumption (Slide 43) and for the storage assumptions (Slides 42 and 43).
- Charles Snavelly asked what TVA was doing about electric vehicles (EV) in the Tennessee Valley. Dr. Hoagland indicated that discussions are currently taking place between TDOT, TDEC and TVA to come up with a roadmap to make the EV infrastructure work. The agencies will be working on this initiative for the next 12 months.
- Stephen Smith asked how the EV roadmap would fit with the work being done by the DGIX. Dr. Hoagland replied that the EV consortium was part of the DGIX.
- Lloyd Webb commented that notwithstanding its benefits, the EV infrastructure initiative can also be disruptive for TVA as shown by the experience of other utilities.
- In regard to locational values (Slide 45), Aaron Melda indicated that non-traditional solutions (e.g. use of batteries in strategic places) can be used to avoid large capital expenditures.
- Stephen Smith pointed out that creation of the locational values (Slide 45) is based on 3 factors: net migration, per capita energy consumption, and industrial growth. He also pointed out that the first two factors (net migration and per capita energy consumption) create offsetting impacts.
- Michael Butler asked whether TVA is giving consideration to transmission line losses. Aaron Melda replied that transmission losses are minimized through optimization of congestion by trying to match generation point with usage point to the greatest extent possible.

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8. IRP Focus Area: DER

Dr. Hoagland provided TVA's perspective on why DER is one of the focus areas of the 2019 IRP (Slides 47 to 54).

- Customer demographics are rapidly changing resulting in change in preferences on engaging with the utility. Despite change in preferences, customers still expect reliable, resilient and reasonably-priced electricity.
- New players (RE 400, Google, Walmart, Nike, etc.) and new opportunities (cheaper technology) play a role in greater penetration of DER.
- The utility of the future is expected to be customer-centric, diverse and flexible, and have a low carbon footprint.
- The strategic response to meet such a future is to have a more flexible grid system and the creation of a "smarter" distribution system.
- Dr. Wayne Davis raised questions about the efficiency of candidate resource technologies in such a future.

9. IRP Focus Area: Portfolio Diversity

Melanie Farrell (Director, Resource Strategy and Planning) presented on portfolio diversity, covering areas such as load profiles, generating unit characteristics, seasonal solar and wind shapes, and the importance of selecting appropriate resource types (Slides 55- 72). A diverse asset mix helps meet load economically and reliably over the long run.

- The current load distribution indicates that the load is 15,000 MW or more about 80 percent of the time. The peak on a typical winter day is 29,824 MW.
- There was some discussion around the need to increase summer and winter reserve margins.
- Stephen Smith questioned the need to raise reserve margins here in the Tennessee Valley.
- Dr. Wayne Davis indicated that reserves may need to be higher in future due to climate change.
- Lloyd Webb stated that the higher the nuclear component of a utility's portfolio, the higher would be the expected reserve margins.
- Stephen Smith inquired about TVA's commitment to low-income Energy Efficiency (EE) programs. Dr. Hoagland responded by stating that what is important is leveraging with others to advance EE, not just TVA's direct expenditures on EE.

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- Stephen Smith asked what metrics TVA used (if not dollars) to gauge progress on advancing EE. Dr. Hoagland replied that TVA was working on the metrics, but currently allocates around \$5 million in the DER budget for low income EE.
- Wes Kelly discussed the implementation of the Whole Home Upgrades program in the Huntsville area. The program is jointly implemented by TVA, Huntsville Utilities (HU), and the Housing Authority. About 50% of the funding for the home efficiency projects comes from TVA while the remaining funds are provided by the Housing Authority. HU personnel perform inspections on the homes that have been upgraded.

10. Public Engagement in the IRP

Amy Henry discussed the different avenues for public input and outreach throughout the IRP process. Engagement is taking place at multiple levels: IRP Working Group, RERC, and general public (meetings, webinars, listening sessions and social media) (Slides 74-83).

- The DGIX was formed in October 2017 and the IRPWG in February 2018. In addition, RERC will provide advice on the IRP to the TVA Board.
- TVA has 87,000 followers on Facebook. A monthly update on the IRP would be provided through this medium.
- Michael Butler suggested that TVA consider: (1) peer-to-peer testing and (2) working with the LPCs, for greater public outreach.
- Jennifer Mundt suggested that meetings should be held after workhours to foster greater participation.
- Doug Lawyer encouraged TVA to provide opportunities on the web for public listening sessions.

11. Public Comment Session

Members of the public did not provide any comments at this Council meeting.

12. RERC Discussion on Advisory Questions

A discussion ensued among the Council members on two questions: (1) what aspects of the focus areas (DER, System Flexibility, and Portfolio Diversity) are most important for TVA to consider and why? (2) what advice do you have for engaging broader diversity and segments of the public in the IRP?

The salient features of the discussion on the first question are recounted below.

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- Jennifer Mundt: All three areas are important, but system flexibility should be given the highest priority.
- Doug Peters: System flexibility is paramount since TVPPA members need the ability to respond to changes in their local areas. We would leave a lot of capability disaggregated on the grid if we do not focus on flexibility.
- Stephen Smith: Flexibility and portfolio diversity are important. However, my concern is that TVA is developing a hostile posture towards DER as indicated by the recent rate changes made before the IRP. Solar program has come to a halt and the EE program has dropped off.
- Charles Snavelly: We cannot move backwards on cost or reliability. All three areas imply that reliability is not important. There is a limit to how much focus we can provide on flexibility.
- Lloyd Webb: The most important area is diversity. We cannot accommodate flexibility in a cost-effective manner. DER will grow, but at its own pace.
- Mike Butler: There is a difference between what customers are demanding and what TVA is ready to provide. It is important that TVA lead the discussion so that it does not get pulled in direct directions by its customers.
- Alice Perry: Things are changing very fast. System flexibility is important to respond to demand, and to make reliable, low cost power.
- Wes Kelly: The application of DER in the Valley is still unknown. The IRP should provide illumination on DER and the mechanisms to use to support DER.
- Rodney Goodman: We should lessen the gap between the DER technologies and the low income community.
- Doug Lawyer: Low cost and reliable power are important. At the same time, flexibility is also important as it translates to jobs.
- Pete Mathias: I need to understand how all of these concepts fit into reality. We are already sufficiently diverse.
- Jeremy Nails: We should do what is necessary to facilitate the use of DER through our distributors. However, flexibility is the most important area.
- Wayne Davis: We can't separate flexibility from the other components. There is probably more to EE than meets the eye. We should facilitate storage to help DER. The accommodation of DER should be seen as something positive.
- Wes Kelly: Grid stability is related to DER and flexibility. Non-variable DER (such as CHP) might help with grid stability.
- Charles Snavelly: Customers desire renewables, but no one discusses the fact that renewables cost more.
- Stephen Smith: The "all requirements" provision in TVA's contracts does not allow the LPCs to be truly flexible. We should look into modeling into the IRP the effect of giving LPCs this flexibility so that they can engage with their customers directly. Dr. Hoagland indicated that the IRP will consider the maximum DER

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penetration scenario and that the manner in which this will be done has not been worked out yet.

The salient features of the discussion on the second question are provided below:

- Mike Butler: We should have metrics for gauging success in meeting the goal of engaging the public.
- Wayne Davis: It is hard for TVA to engage the general public since the public works with LPCs, not directly with TVA.
- Wes Kelly: Not many would understand the purpose and process for developing an IRP. TVA would make its message generic and funnel it through the LPCs.
- Rodney Goodman: It would be good to have a roundtable at IRP public meetings since going to a podium can be intimidating. Alternatively, tables can be set up for groups with each table's leader reporting back the results of that group.
- Stephen Smith: TVA may have conveyed in past meetings that only the comments of LPCs are important. This sends mixed signals to the general public.
- Lloyd Webb: It must be recognized that the people involved in the IRP discussions have special interests. It might not be possible to get to the general population without forming focus groups.
- Doug Peters: We should use the LPC communication channels to interact with the general public. The LPCs should, then, bring the feedback to TVA.
- Mike Butler: Reach out to the grassroots through the LPCs, but separate out the LPCs issues from the TVA issues.

13. Formulation of Advice Statement

Based on discussions among the Council members, the Council prepared an advice statement for adoption by the Council through a formal vote. The advice statement is included in Appendix C.

Under the RERC Bylaws and Operating Procedures, eleven voting members constitute a quorum for the conduct of business. The Bylaws also provide that any recommendation by the Council to TVA requires an affirmative vote of at least a simple majority of the total membership present on that date. Most of the aforementioned discussion on issues occurred with a quorum of eleven members present. Ten members voted in favor of the advice statement in Appendix C, while one member abstained from the vote.

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Dr. Davis and Dr. Hoagland thanked members for their input and for a great discussion on the IRP. The meeting adjourned at 3:30 p.m. EDT.

Minutes approved:



Wayne T. Davis, Council Chair

Date: ____08/29/2018____

Appendix A Non-Council Meeting Attendees

TVA Staff			
Jane Elliott	Hunter Hydas	Melanie Farrell	Jessica Coleman
Joe Hoagland	Jo Anne Lavender	Cathy Coffey	Khurshid Mehta
Barbie Perdue	Michael Scalf	Liz Upchurch	Brian Child
Amy Henry	Ashley Pilakowski	Aaron Melda	Laura Dutton
Althea Jones	Malinda Hunter		

Members of the Public In Attendance
Jenn Galler

Other
TVA Office of the Inspector General - Jennifer Torregiano
TVA Police - Kenrick Short, Scott Stone

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Appendix B Meeting Agenda

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Meeting Location: Chattanooga Hotel, 1201 Broad Street, Chattanooga, TN

June 14, 2018 All Times EDT	
7:30	Breakfast for meeting participants at Hotel Restaurant
8:30	Welcome - TVA Designated Federal Officer (DFO) / Joe Hoagland Welcome - RERC Chair / Wayne Davis
8:40	Introductions - Council Members, Facilitator, Jo Anne Lavender <ul style="list-style-type: none">• Safety Moment• Overview of Agenda• Meeting Protocols
8:50	FACA Review - Office of the General Counsel, Khurshid Mehta
8:55	Today's Meeting Purpose; Recap of Term 3 Meetings of the RERC; TVA Update - Joe Hoagland
9:10	<u>The 2019 IRP --</u> Overview of the 2019 IRP Brian Child EIS -- Ashley Pilakowski
9:45	Break
10:00	Intro to IRP Focus Areas - Brian Child
10:10	IRP Focus Area: System Flexibility - Aaron Melda
10:35	IRP Focus Area: Distributed Energy Resources (DER) Joe Hoagland
11:00	Break
11:10	IRP Focus Area: Portfolio Diversity - Melanie Farrell
11:45	Lunch
12:40	Public Engagement in the IRP - Amy Henry

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12:55	Brief Break to Prepare for Listening Session
1:00	Public Listening Session
2:00	Brief Break
2:10	RERC Discussion Discussion Question: 1. What aspects fo these focus areas are most important to you that TVA consider and why? Advice Questions: 2. Given our focus areas for the 2019 IRP of DER, System Flexibility and Portfolio Diversity, is anything missing? 3. What advice do you have for engaging broader diversity and segments of the public in the IRP?
2:45	Break
3:00	Review Discussion Information and Form Advice Statement
3:25	Wrap up
3:30	Adjourn RERC Meeting

Appendix C

Advice Statement Adopted by the TVA Regional Energy Resource Council by a Formal Vote

The TVA Regional Energy Resource Council (RERC) has reviewed the focus areas defined for the 2019 Integrated Resource Plan (IRP): Distributed Energy Resources; System Flexibility; Portfolio Diversity; and agrees with the focus areas that TVA has identified. However, the RERC recommends that TVA incorporate other features such as grid stability and low income energy efficiency in the overall analysis.

The RERC recognizes that it is difficult to engage the general public in the IRP without the assistance of the Local Power Companies (LPCs) and recommends that TVA directly involve the LPCs to interact with and gain input from the public.