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# 2024 Integrated Resource Plan (IRP) Update

Public Educational Webinar  
December 14, 2023

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# About Today's Meeting

A recording of this presentation will be available on the TVA 2024 IRP website.

2024 IRP website: [www.tva.gov/IRP](http://www.tva.gov/IRP).

There will be an opportunity for questions at the end of the presentation using either the Q&A functionality of the Teams webinar or by submitting questions to [IRP@tva.gov](mailto:IRP@tva.gov) with the subject line "Public Webinar Q&A".

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# Webinar Agenda

Integrated Resource Plan (IRP) Overview

IRP Process

IRP Scenarios and Strategies

Stakeholder Engagement Opportunities

Q&A

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# Integrated Resource Plan (IRP) Overview

Clifton Lowry; Director, Resource Planning and Strategy

# TVA's Integrated Resource Plan

The IRP is a study of how TVA could meet customer demand for electricity between now and 2050 across a variety of future worlds.

A programmatic Environmental Impact Statement (EIS) accompanies the IRP to address its environmental effects.

An updated IRP is needed to:

- Proactively establish a strong planning foundation for the 2030s and beyond
- Inform TVA's next long-range financial plan

The IRP provides strategic direction on how TVA will continue to provide low-cost, reliable, and increasingly cleaner electricity to the 10 million residents of the Tennessee Valley.



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# What TVA's IRP Does

## The IRP will:

- Use least-cost planning criteria
- Incorporate resource capital, operating, fuel, and environmental compliance costs
- Include Valley economics as key criteria to evaluate strategies
- Evaluate socioeconomic and climate impacts of alternative strategies in the associated EIS

## The IRP will not:

- Establish wholesale or retail electricity rates
- Identify specific sites for new resources
- Be a Distribution Integrated Resource Plan (DIRP)

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# Key Integrated Resource Plan (IRP) Dates

The 2024 IRP study approach is intended to enable stakeholder involvement and ensure transparency

Spring 2023 – Publication of Notice of Intent (NOI) and public scoping initiation

Summer 2023 – IRP Working Group commences

Fall 2023 – Public scoping report published

Fall/Winter 2023 – Modeling and environmental study

Developing scenario forecasts

Running model cases

Spring 2024 – Publish Draft IRP and EIS, public comment period begins

Spring/Summer 2024 – Respond to Draft comments and develop Final documents

Summer 2024 – Publication and TVA Board adoption of Final IRP and EIS

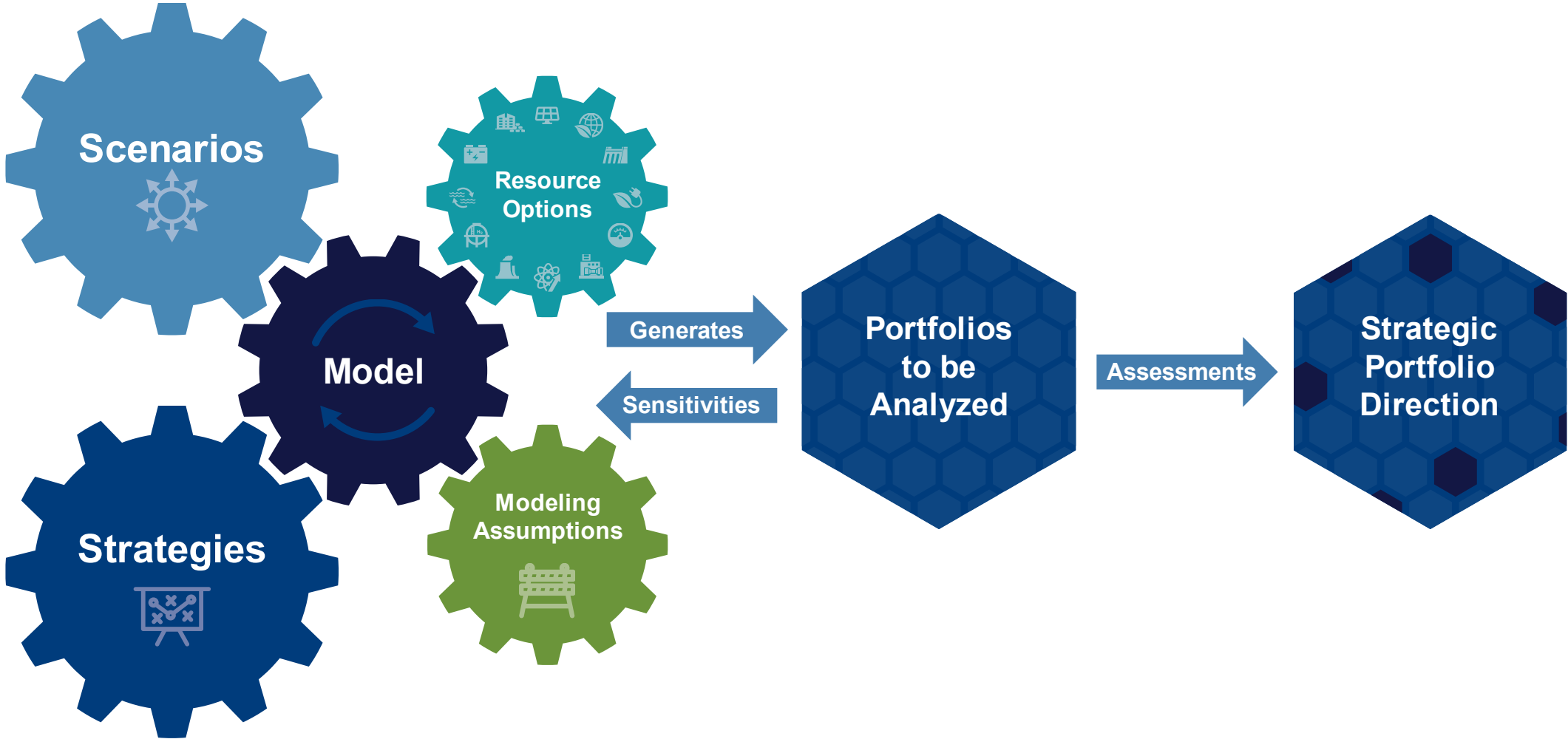
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# IRP Process

Candy Kelly; Sr. Manager, Resource Strategy



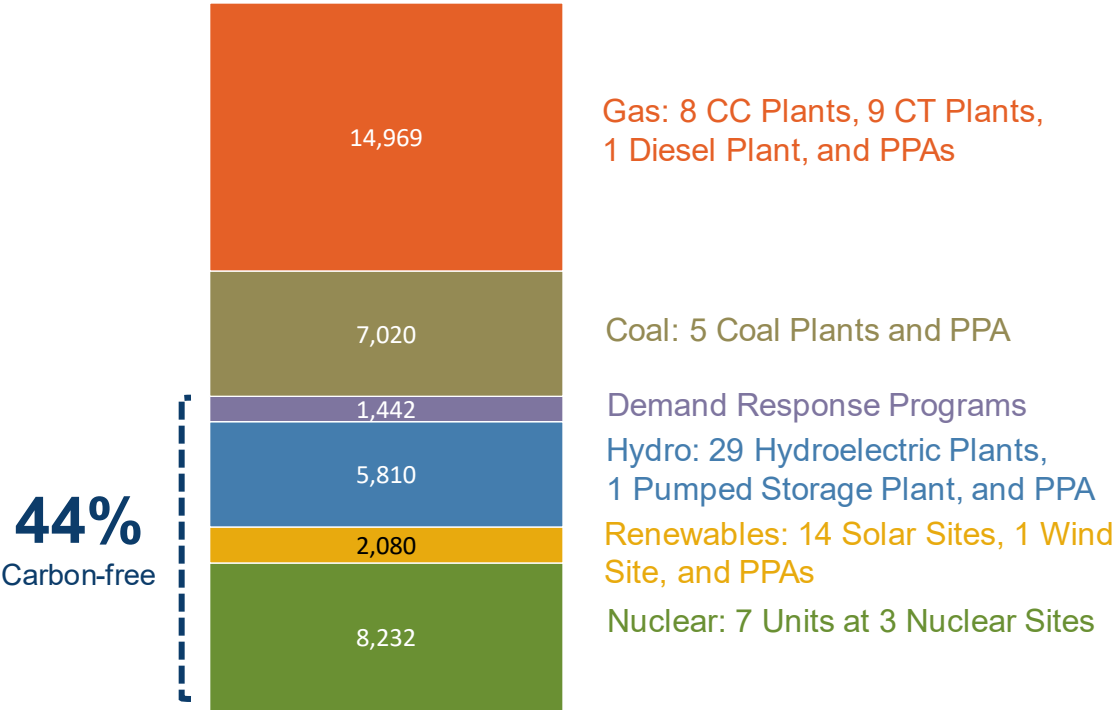
# How the Integrated Resource Planning Process Works



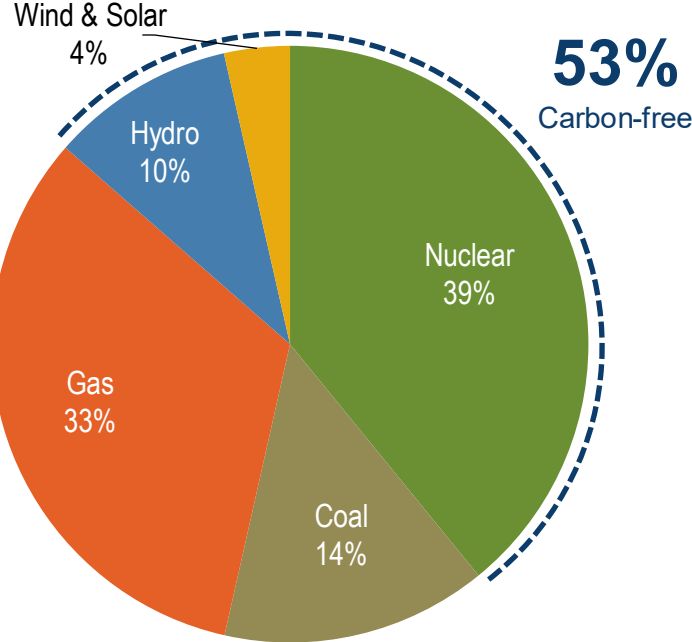
*Stakeholder feedback is a key component in the development of all model inputs.*

# Today's Resource Portfolio

## FY22 Capacity 39,553 MW



## FY22 Energy 165 TWh



Capacity aligns to FY22 10-K Net Summer Capability, adjusted to include demand response programs. Planning capacity is lower, as it accounts for Hydro and Renewable expected generation at peak, fuel blend derates, and other factors.

In addition to power supply sources included here, TVA offers energy efficiency programs that effectively reduced 2022 energy needs by about 2,200 GWh or 1.3% (Net Cumulative Realized at System basis, 2007 base year).

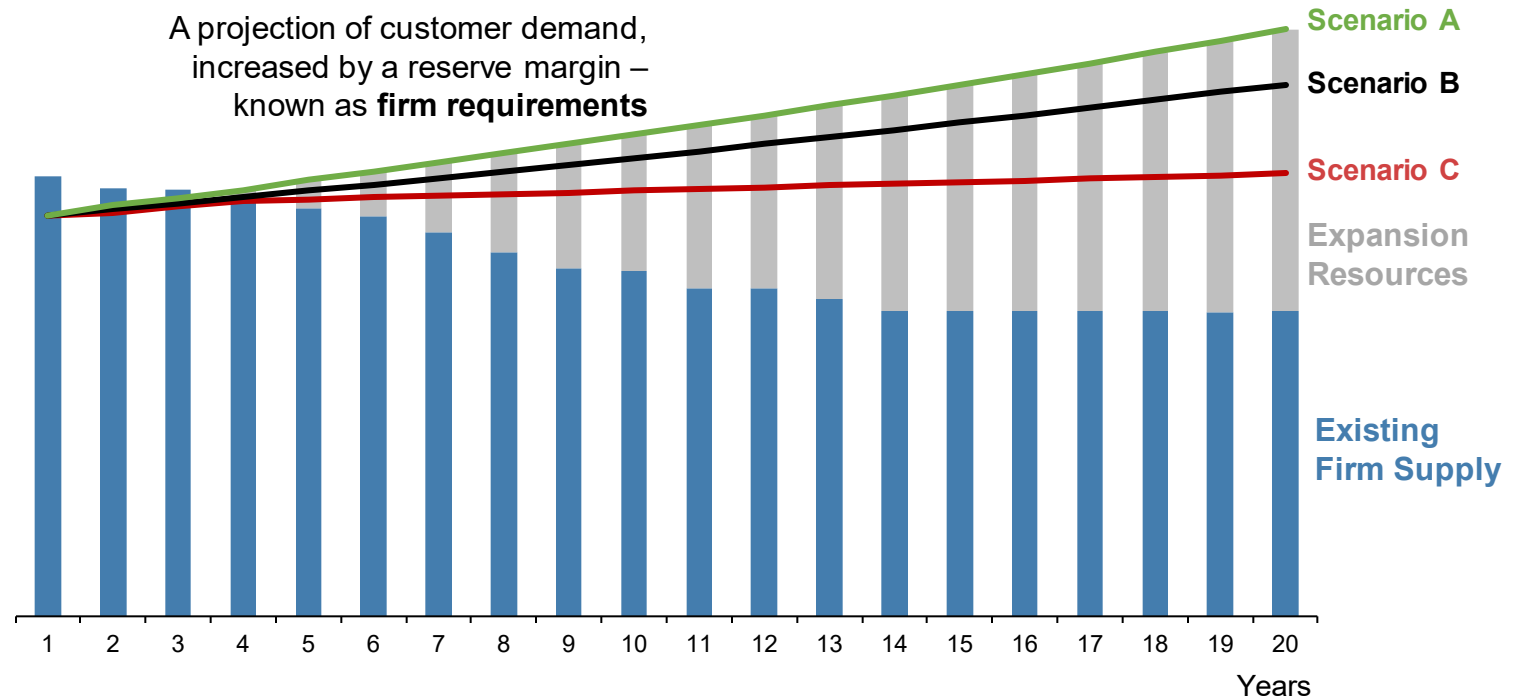
# Resource Planning for Future Capacity Needs

Resource planning is about optimizing the mix of future capacity.

Projections of capacity needed are filled by the most cost-effective resources.

Multiple scenarios will be explored, reflecting different levels of forecasted demand.

Illustrative Capacity Gap Chart



Recommended path provides low cost, reliability, diversity and flexibility

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# Scenarios and Strategies Establish a Framework

A well-designed strategy will perform well in many possible scenarios

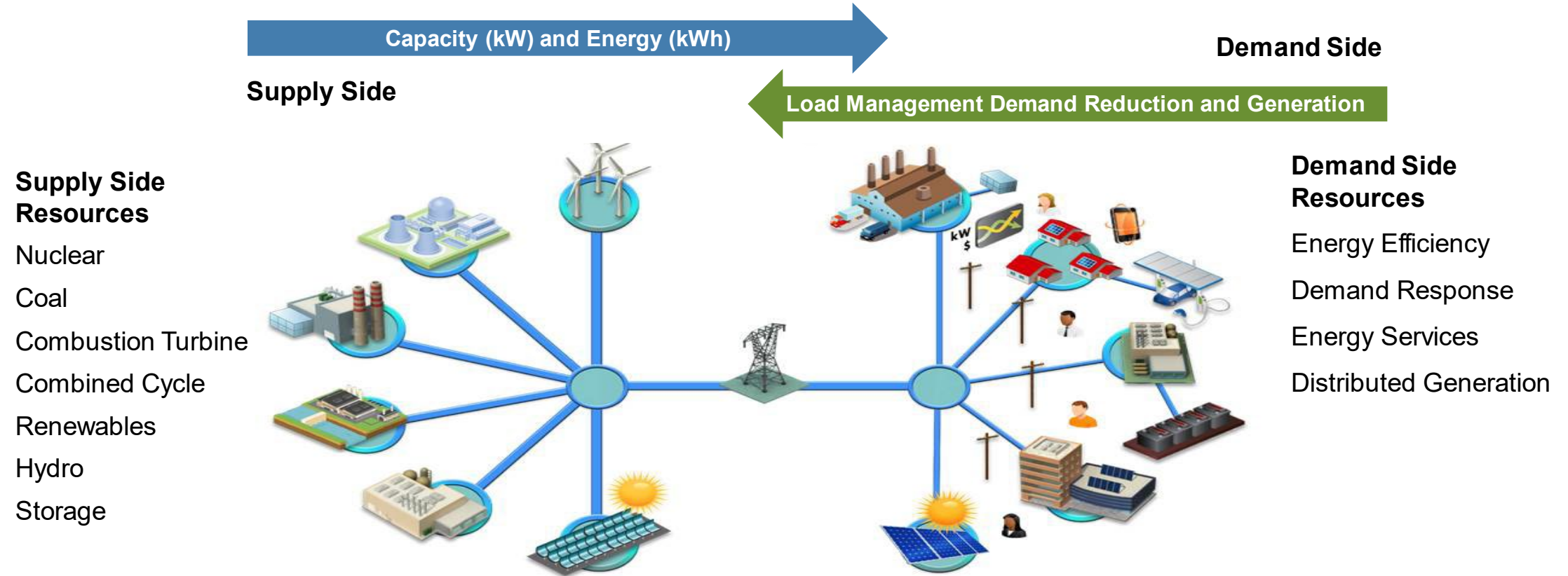
## **Scenarios** are outside TVA's control

- Describe potential outcomes of factors (uncertainties) outside of TVA's control
- Represent possible conditions and are not predictions of the future
- Include uncertainties that could significantly impact operations, such as:
  - Load forecasts
  - Commodity prices
  - Environmental regulations
- Lends insight to riskiness of portfolio choices

## **Strategies** are within TVA's control

- Test various business options within TVA's control
- Defined by a combination of resource assumptions, such as:
  - DER portfolio
  - Nuclear expansion
  - Energy storage
- Consider multiple viewpoints
  - Public scoping period comments
  - Assumptions that would have the greatest impact on TVA long term

# TVA Operates in Multidirectional Environment



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# 2024 IRP Scenarios and Strategies

Hunter Reed; IRP Project Manager

# 2024 IRP Scenarios

Scenario	Narrative
1. Reference Case	Represents TVA's current forecast that reflects increasing employment and population, industrial growth, weather-normal trends, growing electric vehicle demand, and increasing efficiencies.
2. Higher Growth Economy	Reflects a technology-driven increase in U.S. productivity growth that stimulates the national and regional economies, resulting in substantially higher demand for electricity.
3. Stagnant Economy	Reflects rising debt and inflationary pressures that stifle consumer demand and business investment, resulting in weaker than expected economic growth and essentially flat electricity demand.
4. Carbon Regulation	Reflects the impact of proposed greenhouse gas rules targeting significant reductions in electric utility CO2 emissions beginning in 2030 and potential future regulations intended to achieve net zero by 2050.
5. Carbon Regulation plus Growth	Reflects the impact of proposed and potential future regulations coupled with substantial advancements in clean energy technologies, spurring economic growth and extensive electrification.

# 2024 IRP Draft Scenario Total System Load Forecasts

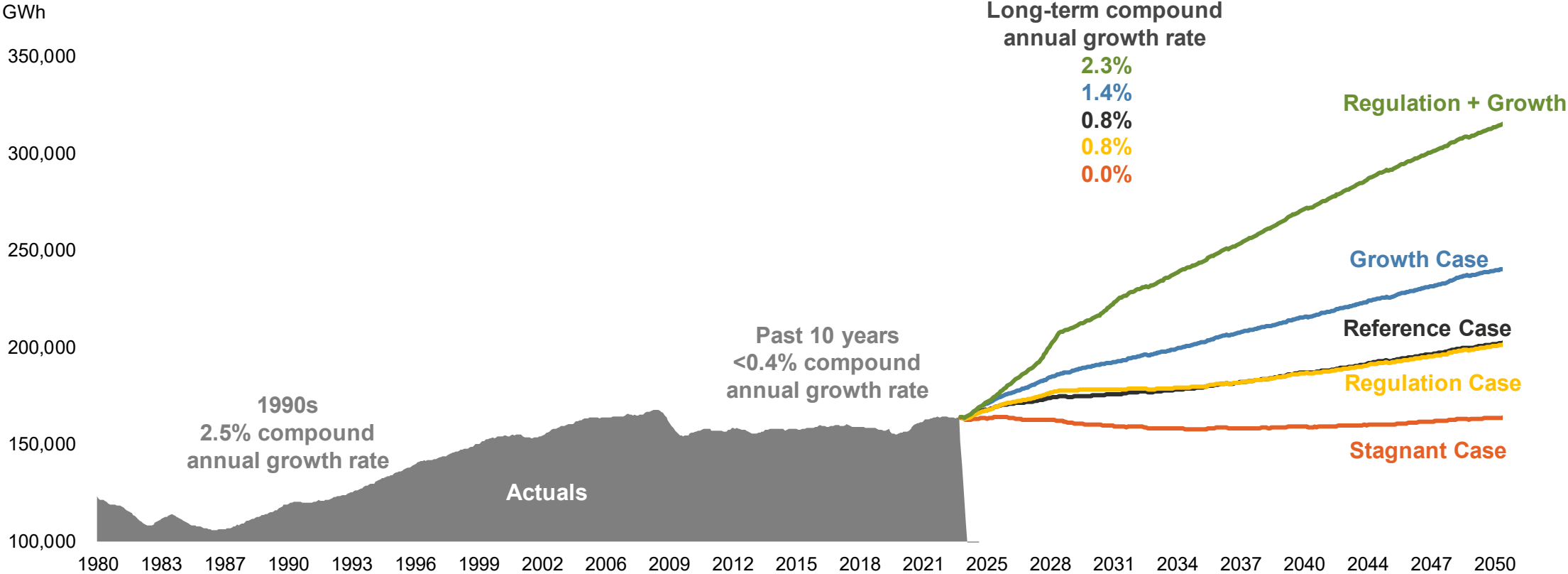


Chart reflects energy, actuals are shown on a weather-normal basis

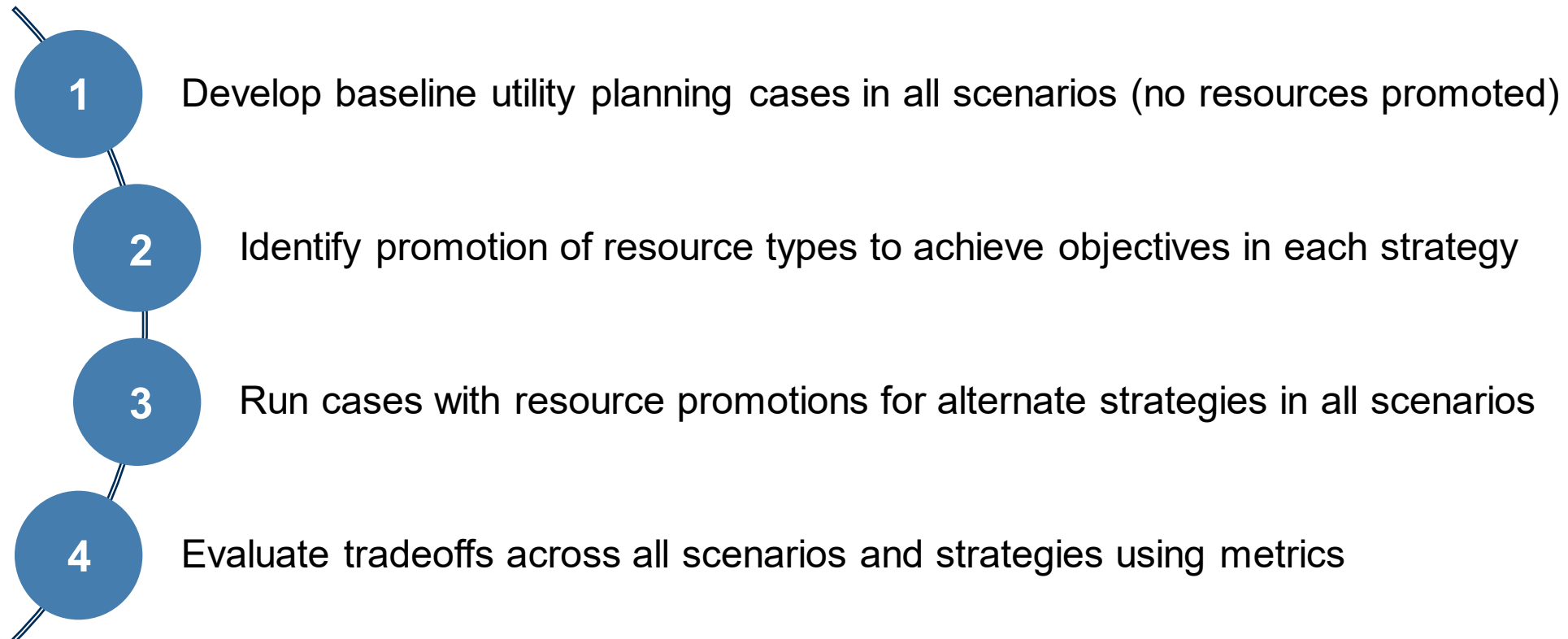


# 2024 IRP Strategies

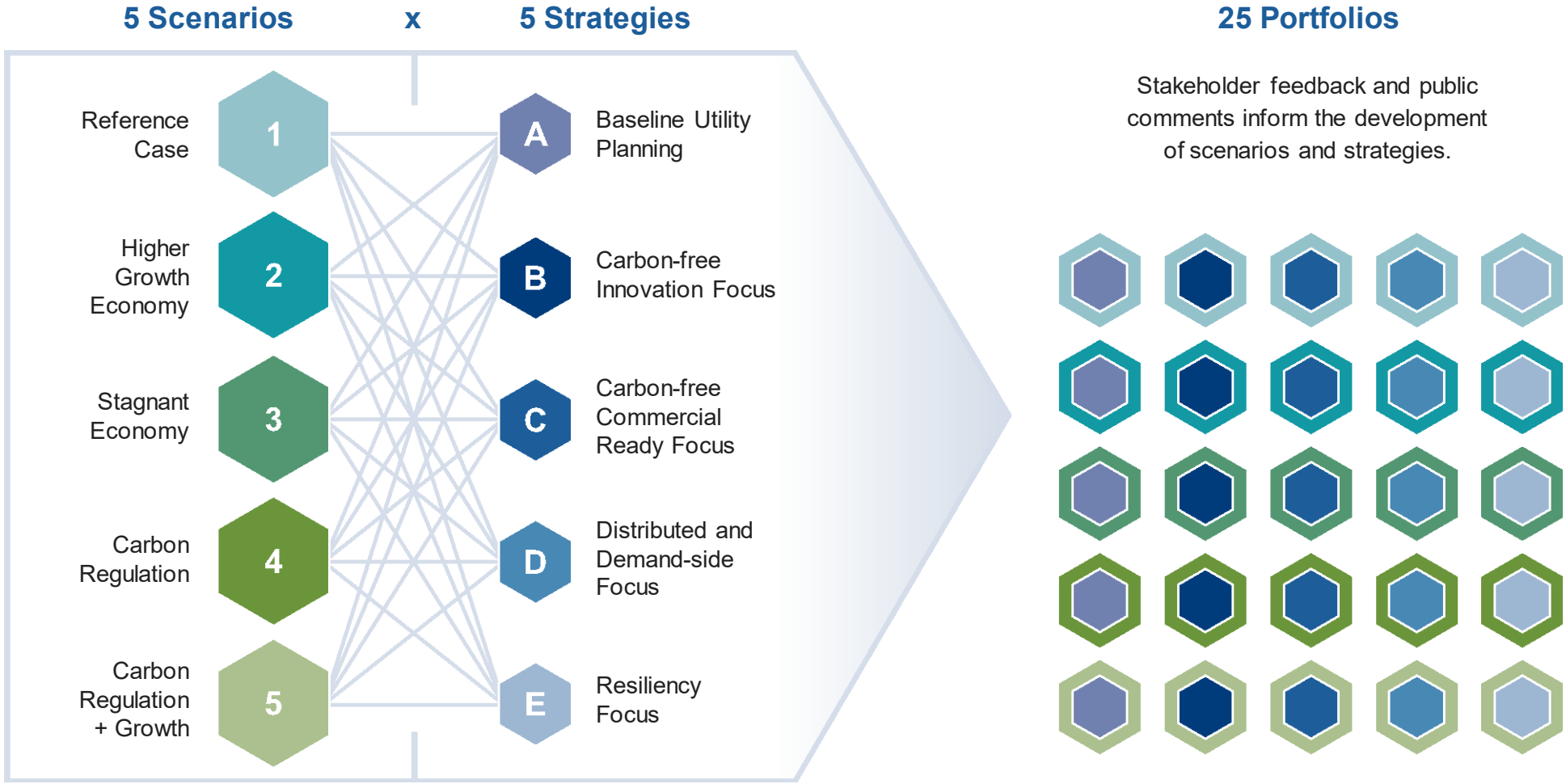
Strategy	Description
A. Baseline Utility Planning	Represents TVA's current outlook based on least-cost planning, incorporating existing programs and a planning reserve margin target. This reserve margin target applies in all strategies.
B. Carbon-Free Innovation Focus	Emphasizes and promotes emerging, firm, and dispatchable carbon-free technologies through innovation, continued research and development, and strategic partnerships.
C. Carbon-Free Commercial Ready Focus	Emphasizes proven renewable technologies such as wind, solar, battery and long-duration storage, at both utility-scale and through customer partnerships, along with strategic transmission investment.
D. Distributed and Demand Side Focus	Emphasizes existing and potentially expanded customer partnerships and programmatic solutions to reduce reliance on central station generation and promote virtual power plants.
E. Resiliency Focus	Emphasizes smaller units and the promotion of storage, coupled with strategic transmission investment, to drive wider geographic distribution of resources and additional resiliency across the system.

# Strategy Design and Evaluation

The IRP will compare baseline-utility planning with alternate strategies that promote certain resource types to evaluate tradeoffs across least-cost planning principles – low cost, risk informed, environmentally responsible, reliable and resilient, diverse and flexible.



# IRP Utilizes a Rigorous Analytical Process



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# Stakeholder Engagement Opportunities

Althea Jones; Sr. Manager, Stakeholder Relations

# 2024 IRP Working Group

Diverse representation creates support and credibility for TVA's long-term resource plans

Eight customer representatives, including:

- Three from Local Power Companies (LPCs)
- Five from customer associations

16 stakeholder representatives, including:

- Three from research or academic institutions
- Three from energy or environmental non-governmental organizations
- Four from state or federal government
- Six from community, sustainability, or other special interests



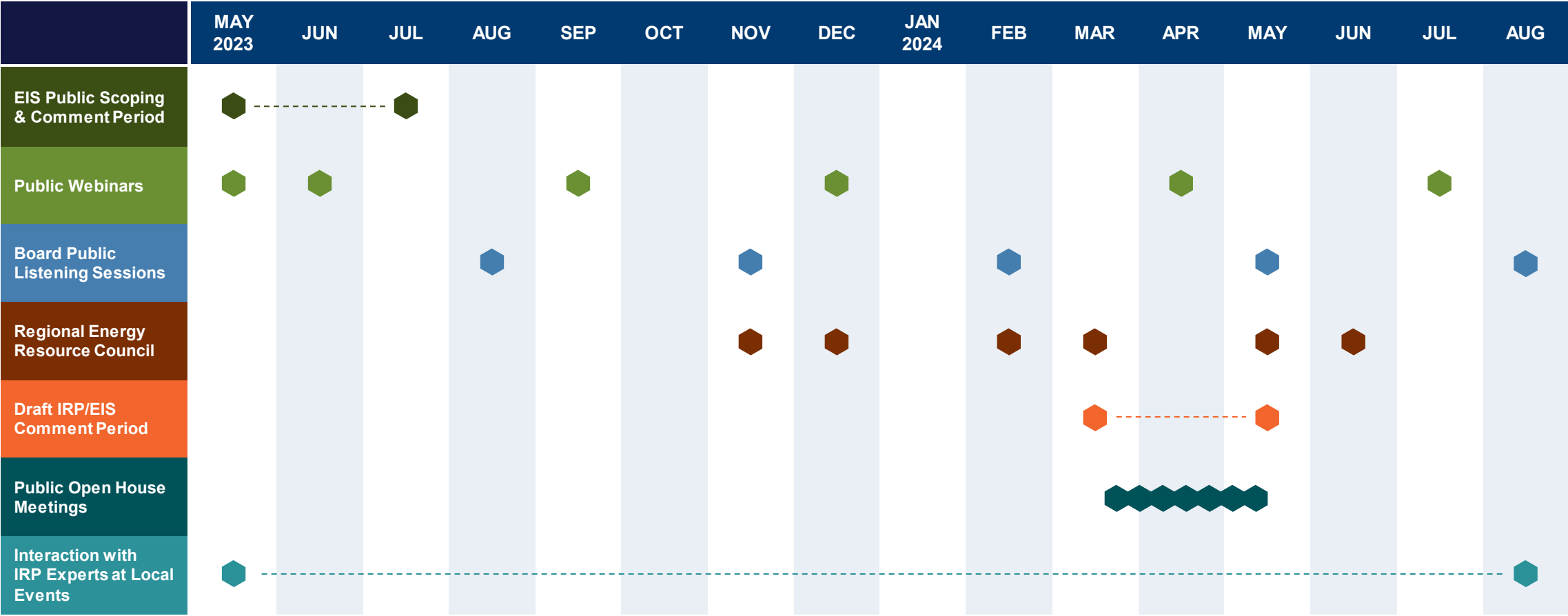
# IRP Public Engagement Opportunities

A key element of TVA's IRP process is to ensure public involvement and direct engagement with a diverse group of stakeholders. The 2024 IRP process is utilizing past effective engagement venues as well as leveraging several new dynamics and initiatives.



Online: [tva.com/IRP](https://tva.com/IRP) / Email: [IRP@tva.gov](mailto:IRP@tva.gov) / Channels: @TVA @TVANews

# IRP Stakeholder Input Opportunities / Public Outreach Tools



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# Opportunities to Stay Involved

TVA Website [www.tva.gov/IRP](http://www.tva.gov/IRP).

Attend future periodic public educational webinars

Add your name to the IRP mailing list at [www.tva.gov/IRP](http://www.tva.gov/IRP) to be notified when documents are released.

Submit comments on the Draft IRP/EIS Report, expected to be available in spring 2024.



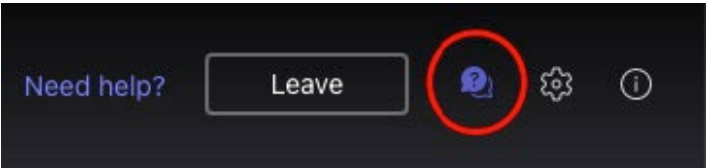


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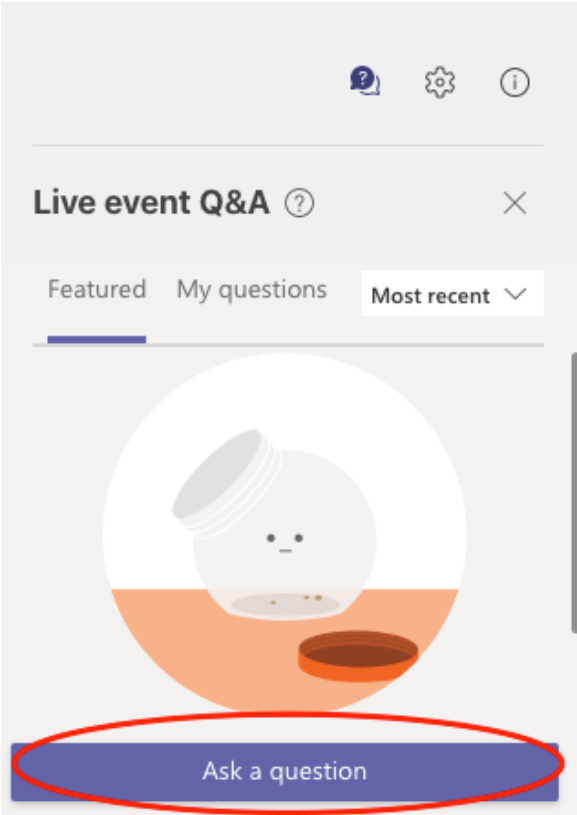
# Questions from Audience

# Q&A Operation

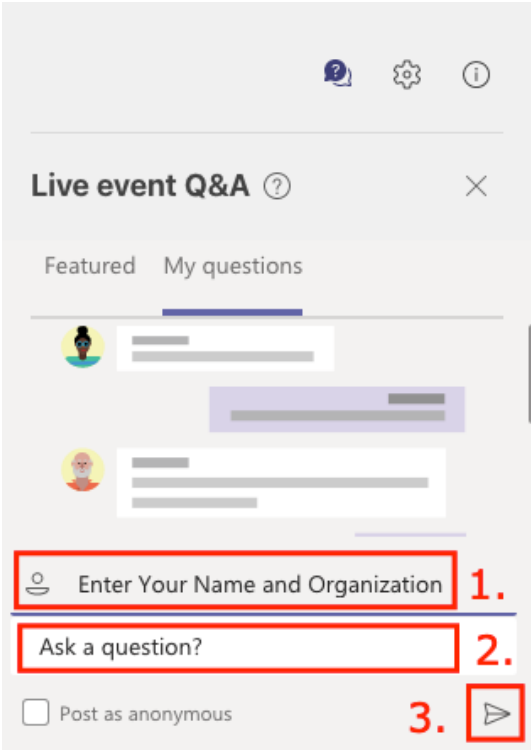
1. Click the Q&A button



2. Click “Ask a Question”



3. Please enter your name and organization in box 1, your question in box 2, then the arrow to submit



Use the Q&A box or email your question to [IRP@tva.gov](mailto:IRP@tva.gov)

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# Closing Remarks

Jo Anne Lavender; IRP Facilitator

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