



# Regional Grid Transformation

Connected Communities Webinar Series

December 10, 2024



# Welcome

- The Latest From Connected Communities
  - Upcoming Webinars
  - Community Information Hub
- Regional Grid Transformation (RGT)
  - Alignment between Connected Communities and RGT initiatives
  - **Jason Krupp**, Senior Project Manager for Grid Modernization, Tennessee Valley Authority
  - **Candace Vannasdale**, General Manager, Harriman Utility Board
- Panel Discussion
- Close Out

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# The Latest From Connected Communities

# Connected Communities Initiative

We're helping communities embrace technology and data solutions to overcome their challenges and prepare to be part of the energy system of the future.

## FOCUS AREAS



**Broadband and Digital Literacy**



**Economic Empowerment**



**Energy and Environmental Justice**



**Enhanced Community Resiliency**

## RESOURCES



**Community Information Hub and Website**



**Tailored Support and Success Coaching through Partnerships**



**Pilot Project Funding**



**Network to Share Information and Success Models**



# Upcoming Webinar

## Innovations in Building Design and Construction:

Promising practices that improve energy  
efficiency and reduce energy costs

Tuesday, Jan. 14, 1:00 – 2:00 pm ET

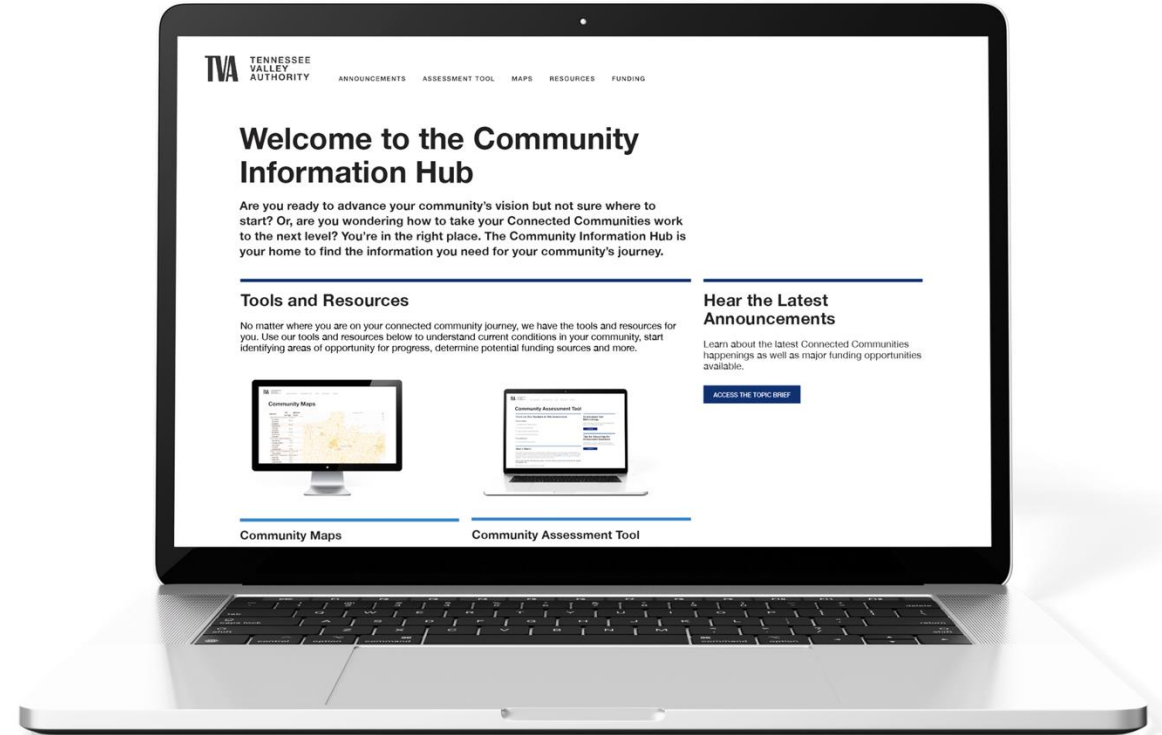


REGISTER NOW



# Community Information Hub

A new, interactive tool is available to help **assess your community needs, prioritize solutions and identify funding opportunities.**





# Lighting the Way: Resilient Ripley Microgrid

As part of the initiative's pilot project offering, the Connected Communities team is supporting the National Institute for Hometown Security (NIHS) and Resilient Energy & Infrastructure (REI) to build a resilient microgrid in Ripley, Tennessee.

# Lighting the Way: Resilient Ripley Microgrid



## Project Goal

This innovative, clean energy technology will enhance Ripley's community resiliency and emergency response.



## Dual-Use Microgrid

The portable solar microgrid can be used during emergencies and non-emergencies.

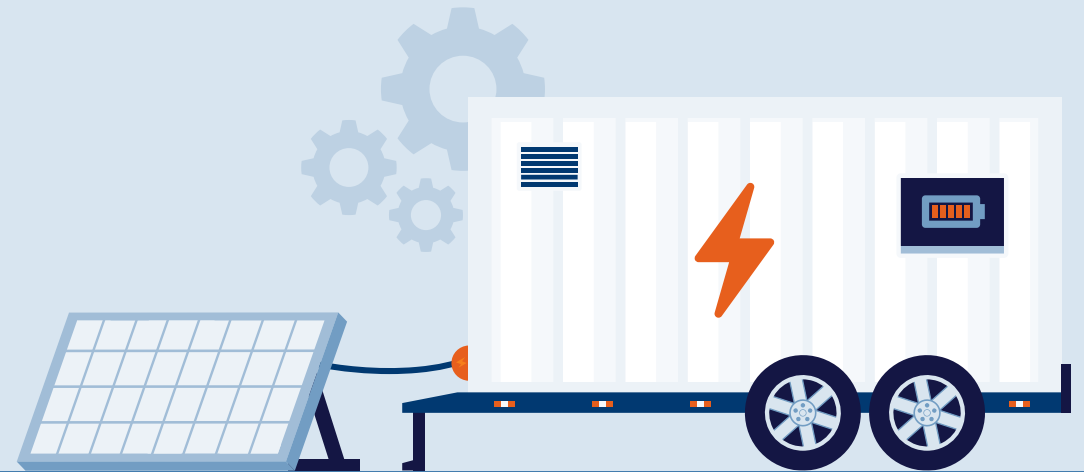


## Enhanced Resiliency

Critical infrastructure host facilities (e.g., high school, fire station) can rapidly deploy this backup power source during emergencies and reduce energy costs during normal operations.

## COMMUNITY IMPACTS

- ✓ Expanded Resiliency and Flexibility
- ✓ Energy Savings
- ✓ Workforce Exposure and Development
- ✓ Leadership as an Innovative, Rural Small City





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# Regional Grid Transformation

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# Meet Today's Speakers



**Jason Krupp**

Senior Project Manager  
for Grid Modernization,  
Tennessee Valley Authority

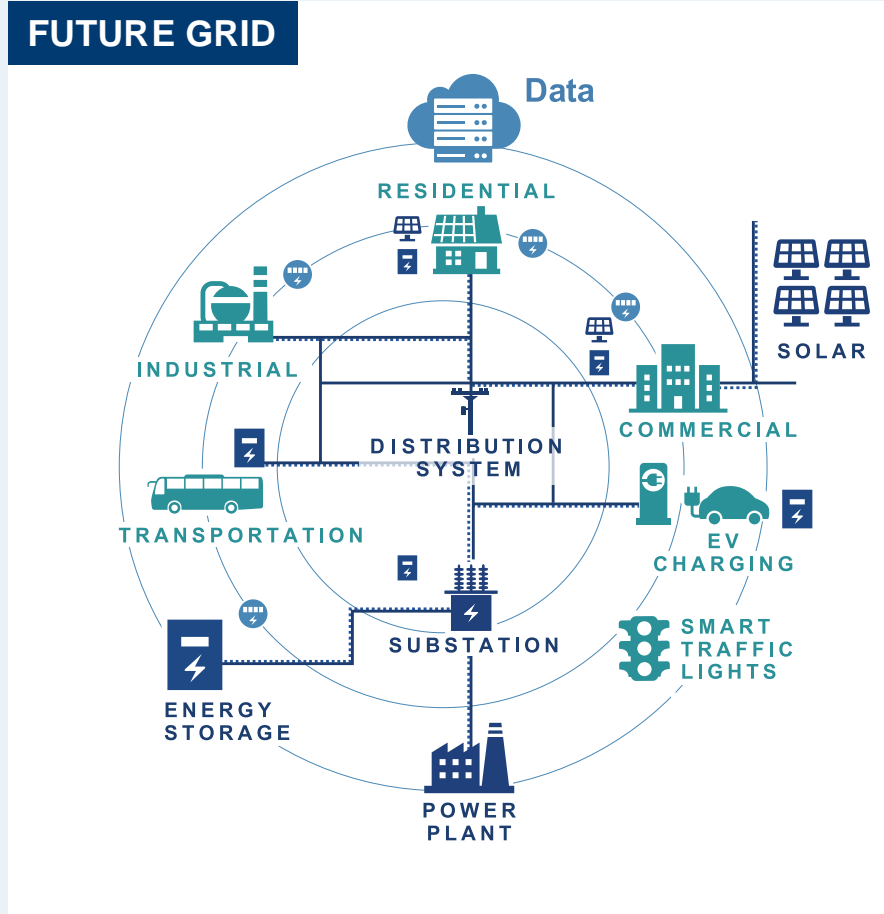
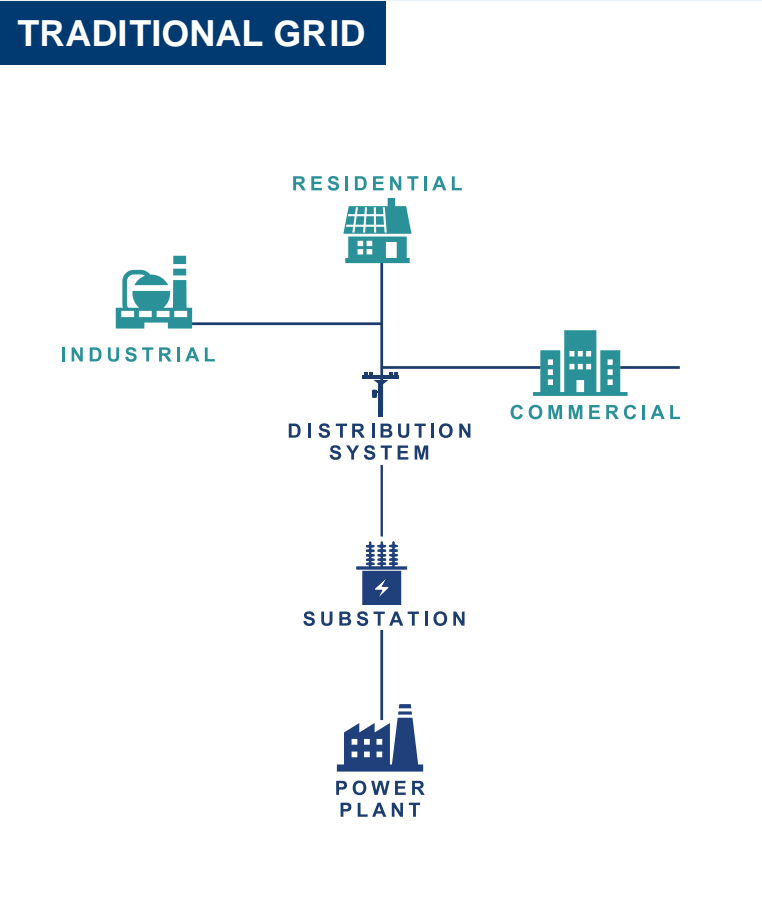


**Candace Vannasdale**

General Manager,  
Harriman Utility Board

# Getting Ready for the Energy System of the Future

Connected Communities and RGT are preparing communities and LPCs for the energy system of the future.



### COMMON DRIVERS

- ✓ Decarbonization
- ✓ Decentralization
- ✓ Electrification

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# Community and LPC Involvement is Needed

The **energy system of the future is complex** and requires greater involvement from communities and LPCs.



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## Distributed Generation

Installing solar panels on homes, businesses and at utility scale.



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## Electric Vehicles

Expanding charging infrastructure, electric mobility options and awareness of benefits.



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## Battery Storage

Increasing use of battery storage for resilience and added flexibility.



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## Demand Response

Increasing opportunities for consumers to use less energy when demand is high for system stability.

# Initiative Goal and Outcome Alignment



## Connected Communities

Target Stakeholders:  
Community Leaders  
and LPCs

- Prepares **community leaders** to take an active role in the energy system of the future.
- Lays a foundation for communities to **focus on innovation**.
- Helps equip communities with:
  - **Fluency** in broadband, energy, resiliency topics
  - **Goals, resources and plan** for progress / project line up



## Regional Grid Transformation

Target Stakeholders: LPCs

- Works with local power companies to **modernize distribution system**
- Helps prepare LPCs to **invest in grid modernization** to enhance grid flexibility, clean energy integration and resiliency



## Shared Goals and Outcomes

- Energy affordability
- Economic development
- Clean energy
- Collaboration among community stakeholders
- Community vitality
- Improved resilience to natural disasters and grid threats



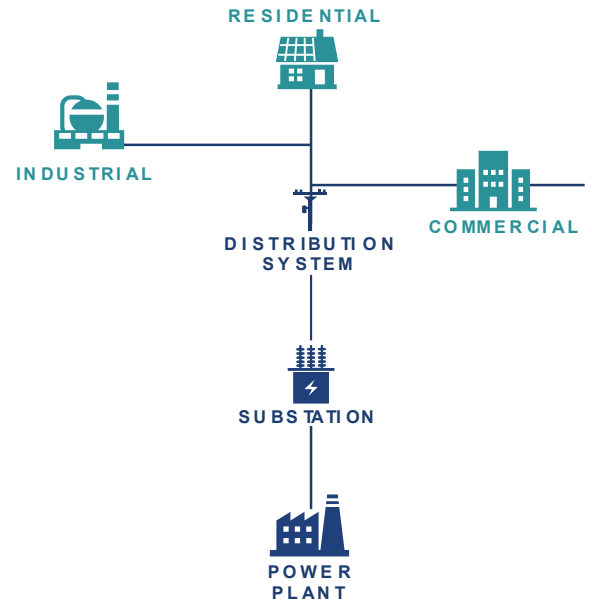
# Regional Grid Transformation

How We Move to the Grid of the Future

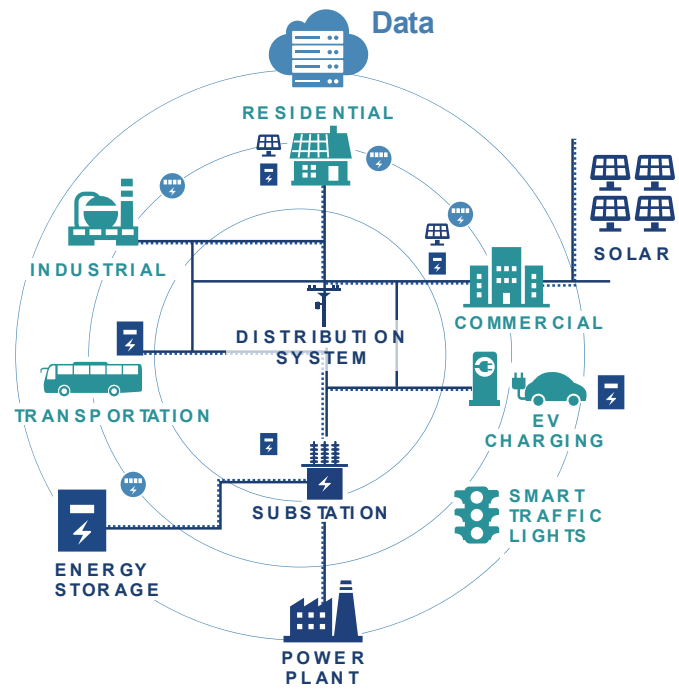
# Regional Grid Transformation (RGT) Vision

RGT is a **collaboration** between LPCs and TVA to transform the power grid into a more **resilient, flexible** and **integrated** system to meet customer expectations and changing world conditions.

## TRADITIONAL



## TRANSFORMATIVE



RGT addresses present-day grid challenges and enables next-generation grid capabilities in **five key areas**:

- Integrated Planning
- Enhanced T&D Operations
- Regional Guidelines
- Exceptional End-User Experience
- Grid Transformation Enabling

**Key RGT activities include:**

- Tactical Roadmaps
- Benchmarking
- Cost/Benefit Analyses
- Pilots
- Capability Assessments

# A Beneficial Future

Grid transformation yields substantial financial benefits for LPCs and the communities they serve.



GREATER THAN

**2:1**

**benefit-to-cost ratio**

yielded by investment



ESTIMATED

**\$4-7B**

**in net benefits**

across the TVA service region

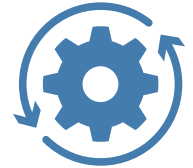


TIMEFRAME OF

**6-8**

**years**

for net benefits to turn positive



GENERATED

**Benefits**

**across entire system**

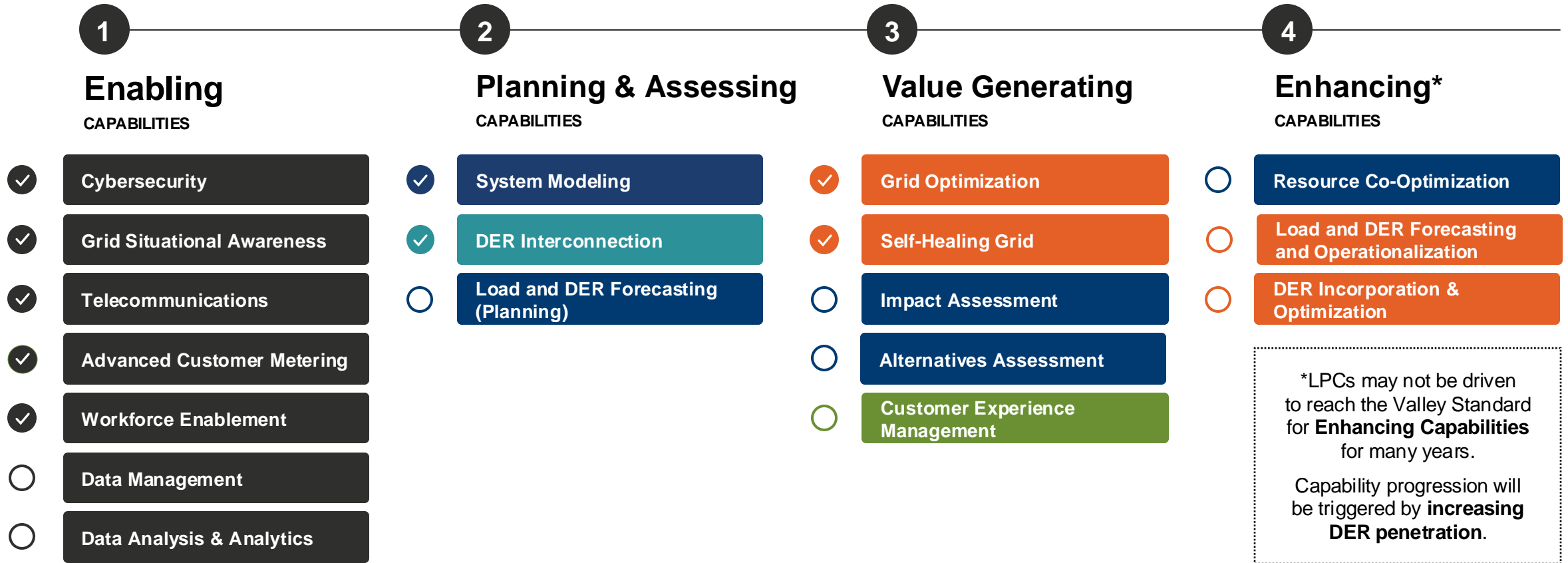
due to the distribution system investment



# RGT Strategic Roadmap (SRM)

| CAPABILITY AREAS                                | NEXT 5 YEARS   | 10-YEAR HORIZON | BEYOND 10 YEARS |
|---|--|-----------------|-----------------|
| Integrated Planning                             |  <b>Optimizing Our Resources</b><br>(incorporating distribution resources into Valley planning)                     |                 |                 |
| Enhanced Transmission & Distribution Operations |  <b>Coordinating Our Operations</b><br>(situational awareness, grid optimization, self-healing grid)               |                 |                 |
| Regional Guidelines                             |  <b>Facilitating Partnership and Collaboration</b><br>(common capability standards, guidance & information sharing) |                 |                 |
| Exceptional End-User Experience                 |  <b>Transforming Insights Into Service Offerings</b><br>(customer programs, dashboards, customer analytics)        |                 |                 |
| Grid Transformation Enabling                    |  <b>Deploying Foundational Tools and Approaches</b><br>(cybersecurity, data governance, change management)        |                 |                 |

# RGT CPM Capability Classification

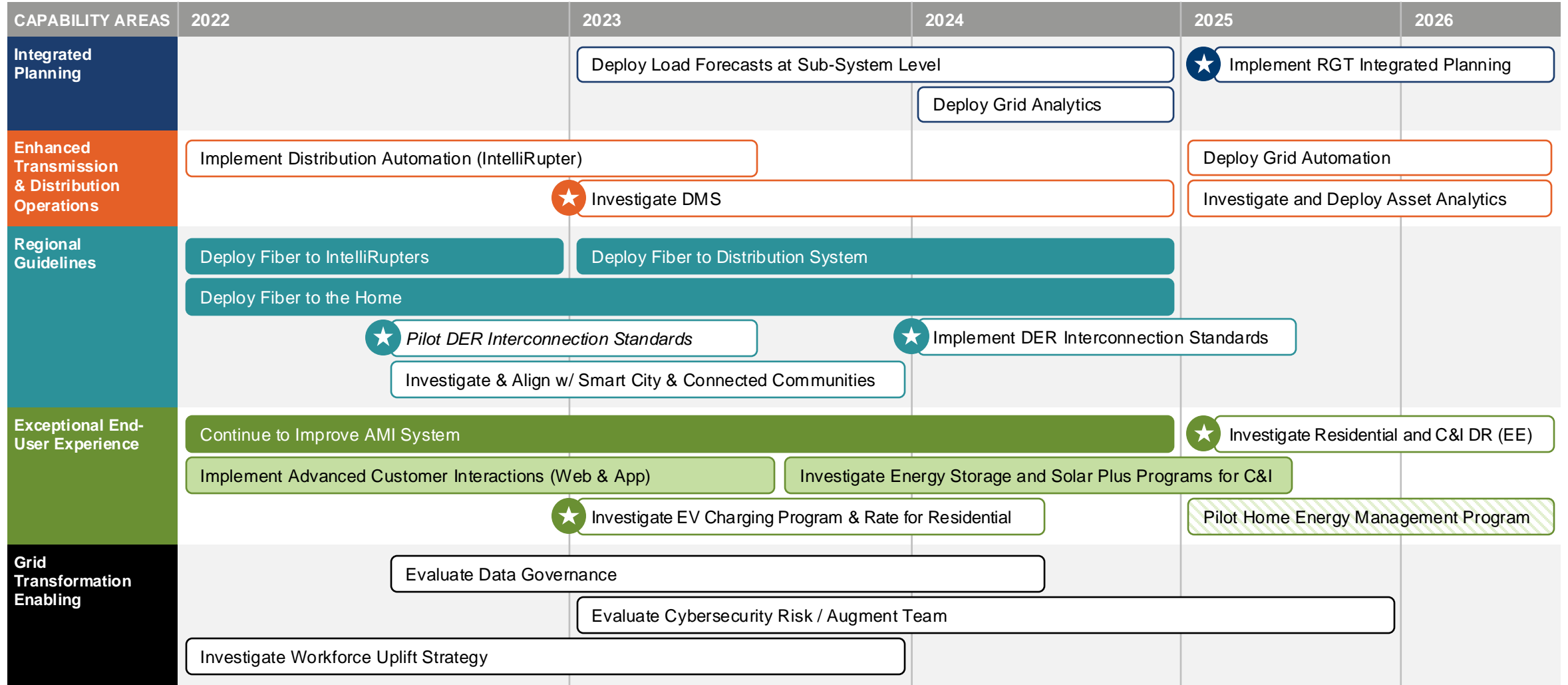


## Capability Areas

- Integrated Planning
- Enhanced T&D Operations
- Regional Guidelines
- Exceptional End-User Experience
- Grid Transformation Enabling

- ✓ Initial Capabilities developed as part of CPM 2.0
- Capabilities being developed as part of CPM 2.1

# LPC Tactical Roadmap





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## Harriman Utility Board

HUB's mission is to enhance our community through exceptional service. Towards this goal, we maintain a constant vision of inspiring social and economic vitality through intentional actions. Building on our past, while growing to meet future challenges and opportunities will continue to allow HUB to serve our most important stakeholders... our customers!



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# Panel Discussion

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# Let's Stay Connected



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## Continue the Conversation

Contact Georgia Caruthers to learn more:

[gmcaruthers@tva.gov](mailto:gmcaruthers@tva.gov)

Or

[ConnectedCommunities@tva.gov](mailto:ConnectedCommunities@tva.gov)



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## Join Our Connected Communities Network

Visit the Connected Communities website and sign up to be part of the Connected Communities Network:

[tva.com/connectedcommunities](http://tva.com/connectedcommunities)



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## Access Our Resources

Access the Community Information Hub and relevant guides:

[Community Information Hub](#)

**TVA**

**TENNESSEE  
VALLEY  
AUTHORITY**