

# Meeting Energy Demand

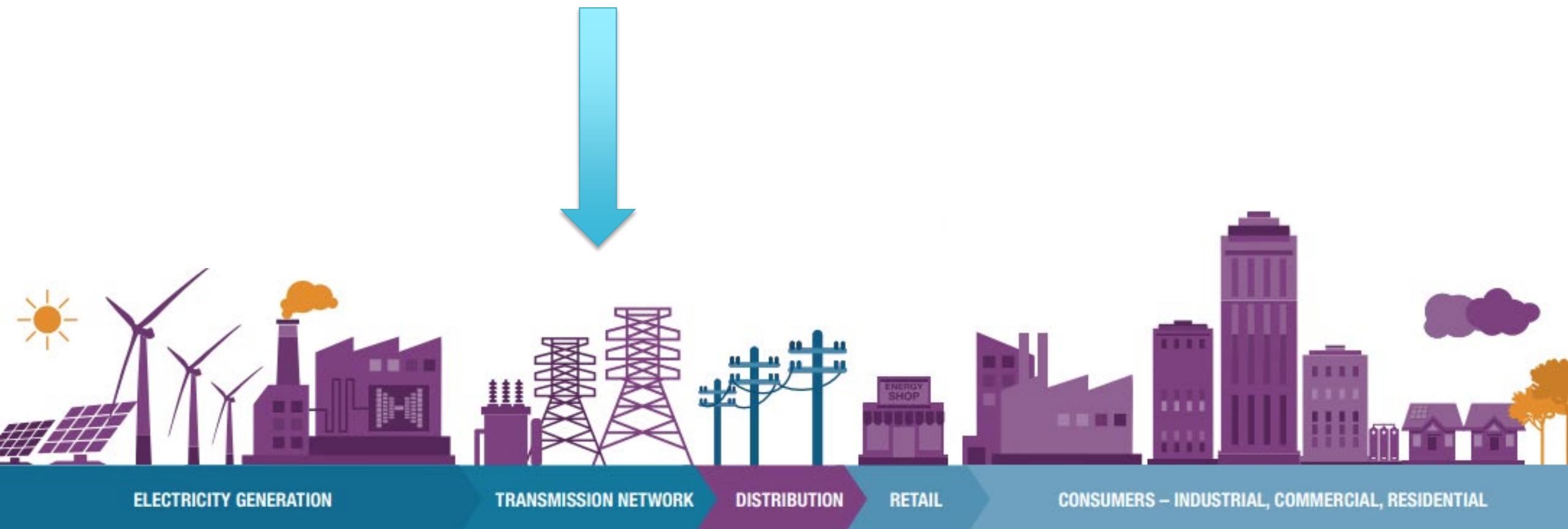
## How States Are Using ATTs to Modernize the Grid

2025 CSG Southern Legislative Conference  
July 21, 2025

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# Agenda

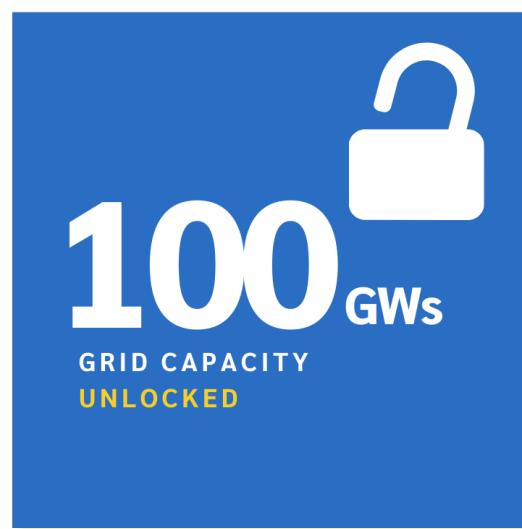
- Advanced Transmission Technologies (ATTs) Overview
- Panel Insights
  - Matt Hart, *Director of Grid Transformation, Alabama Power Company*
  - Joseph Hunter, *Vice President of Global Sales, TS Conductor*
  - Ted Thomas, *Former Chair, Arkansas Public Service Commission*
  - Phil Hernandez, *Delegate, Virginia General Assembly*
- Q&A (~30 min)



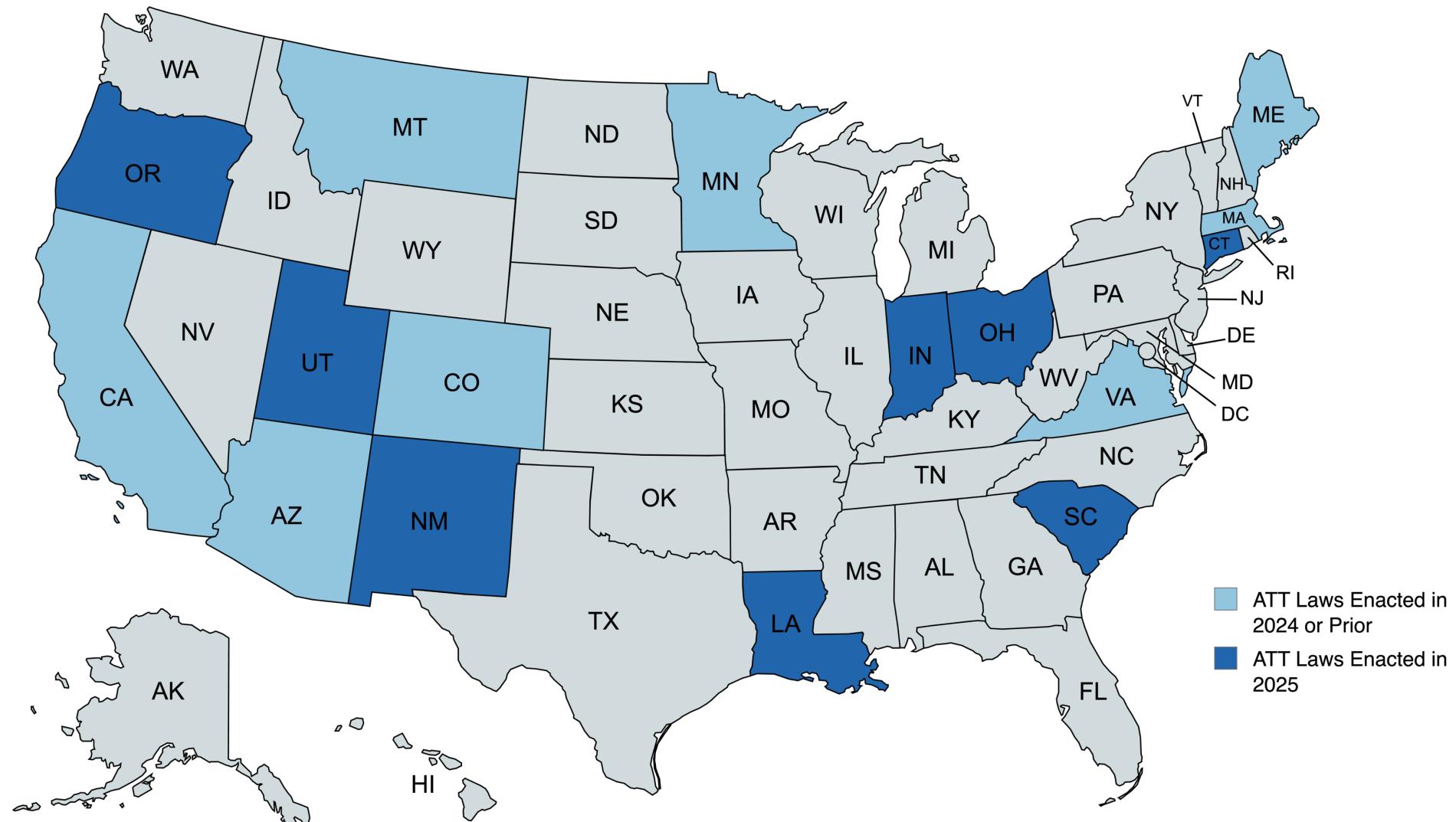
# What are Advanced Transmission Technologies

## Advanced transmission technologies (ATTs):

- squeeze more capacity out of the existing grid,
- reduce congestion costs,
- deploy faster than traditional transmission infrastructure.



# National ATTs Policy Landscape



# Meeting Energy Demand: *How States are Using Advanced Transmission Technology to Modernize Grid*

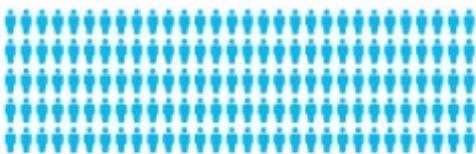
Matt Hart  
July 21<sup>st</sup>, 2025



# About Alabama Power

## Customer Service

1.5M Customers



=10K customers

86% Residential



14% Commercial/Industrial

## Charitable Giving

\$17M

charitable giving in 2024 through  
Alabama Power Foundation

\$273M

given since its inception in 1989

## About Us

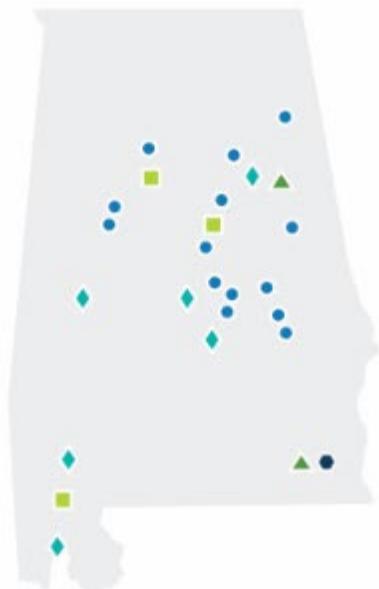
6,154



5,925

retirees

## Generating Plants

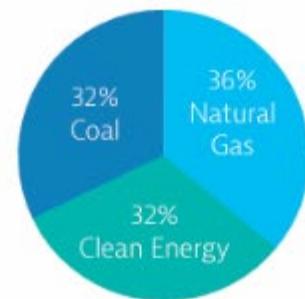


◆ Natural Gas    ■ Coal  
● Hydro    ▲ Solar    ● Nuclear

## Generation

12,942

megawatts total nameplate  
generating capacity



24% Nuclear    5% Hydro    3% Other\*

45,000

square mile service territory

81

generating units

## Power Delivery



10,102 towers + 1,579,379 poles =

1,589,481

total towers and poles

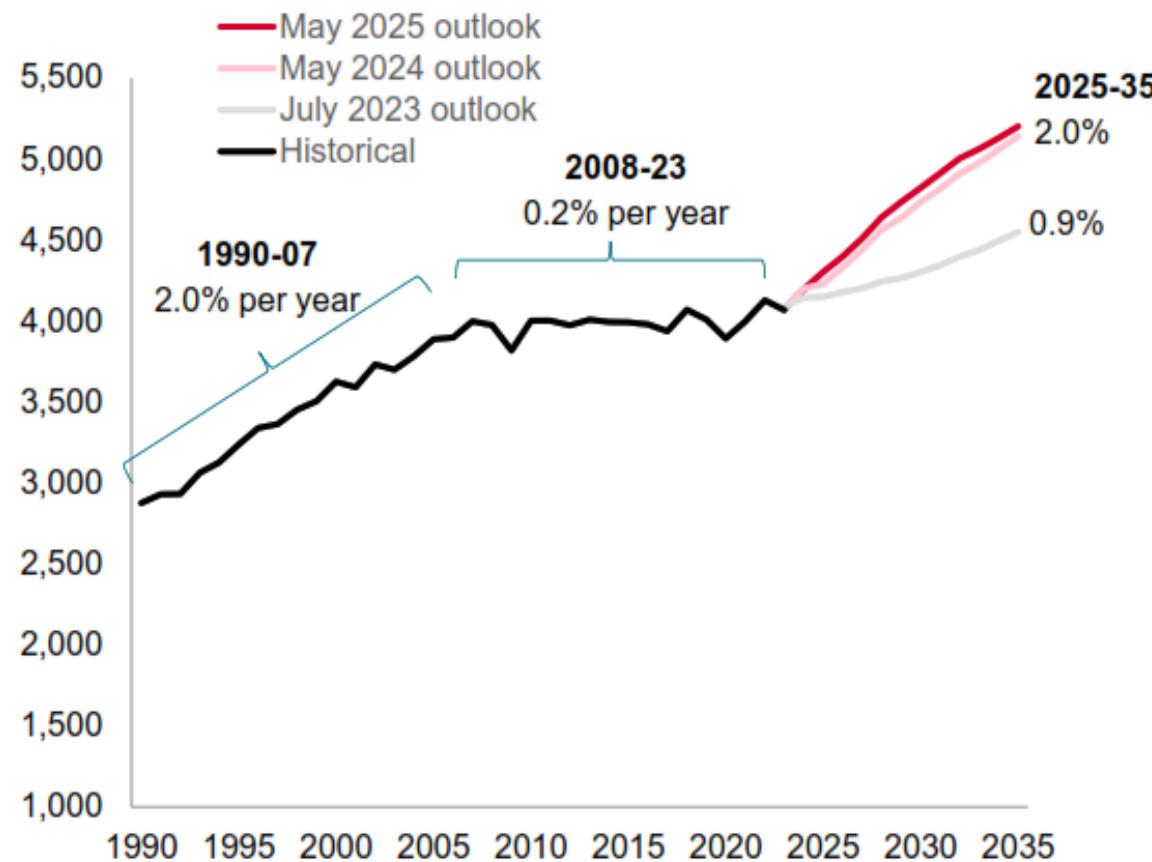
86,171

total miles of power lines

\*Other includes energy from sources that may include wind, solar, etc. To the extent Alabama Power gets the renewable energy certificates (RECs) from these sources, it generally retains the right to sell renewable energy or associated RECs to third parties for the benefit of customers.

# Increasing Grid Demand

## US lower-48 electricity demand by outlook vintage (TWh)



Data compiled May, 2025

Notes: Large industrial loads include incremental demand from datacenters, new manufacturing (e.g., battery, steel, semiconductors, and others), and the electrification of oil and gas operations. Large flexible loads includes demand from electrolysis and cryptocurrency mining.

“Economic growth” represents gross electricity demand growth net of energy efficiency.

Source: S&P Global Commodity Insights and the US Energy Information Administration for historic data.

## Alabama Growth

**ArcelorMittal to move forward with construction of a new, world-class electrical steel facility in Alabama**

October 7, 2022

Alabama facility to support growth in the state's steel industry

BAY MINETTE, Ala., Oct. 7, 2022 /PRNewswire/ — ArcelorMittal, the world's largest aluminum solutions provider and the largest steel producer in North America, today broke ground and began construction today on a new electrical steel facility in Bay Minette, Ala. The highly advanced facility will have an initial 600 kilotonnes of finished electrical steel per year, with the potential to double that output. The new facility will create up to 150 jobs and support the growth of other industrial facilities in the area.

February 2023: It is proposed to build a grain-handling facility at the site.

The new facility will be up to 150,000 square feet in size and will support other industrial facilities in the area.

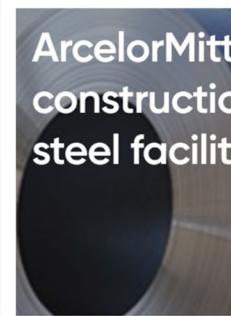


Photo: AP Photo/John David Mercer

Novelis

### Novelis Breaks Ground on \$2.5 Billion Aluminum Recycling Plant

Governor Ivey Announces Meta Plans to Build \$800 Million, Next-Generation Data Center in Montgomery



MONTGOMERY – Governor Kay Ivey announced today that technology company Meta Platforms plans to open an \$800 million data center in Alabama's capital city that will support 100 operational jobs and build on the company's previous investment in the state.

Meta's new 715,000-square-foot, AI-optimized data center will be built off Interstate 65 in Montgomery, across from the Hyundai automotive assembly plant. It will join the company's other Alabama data center campus, located in Huntsville and representing an investment commitment of \$1.5 billion.

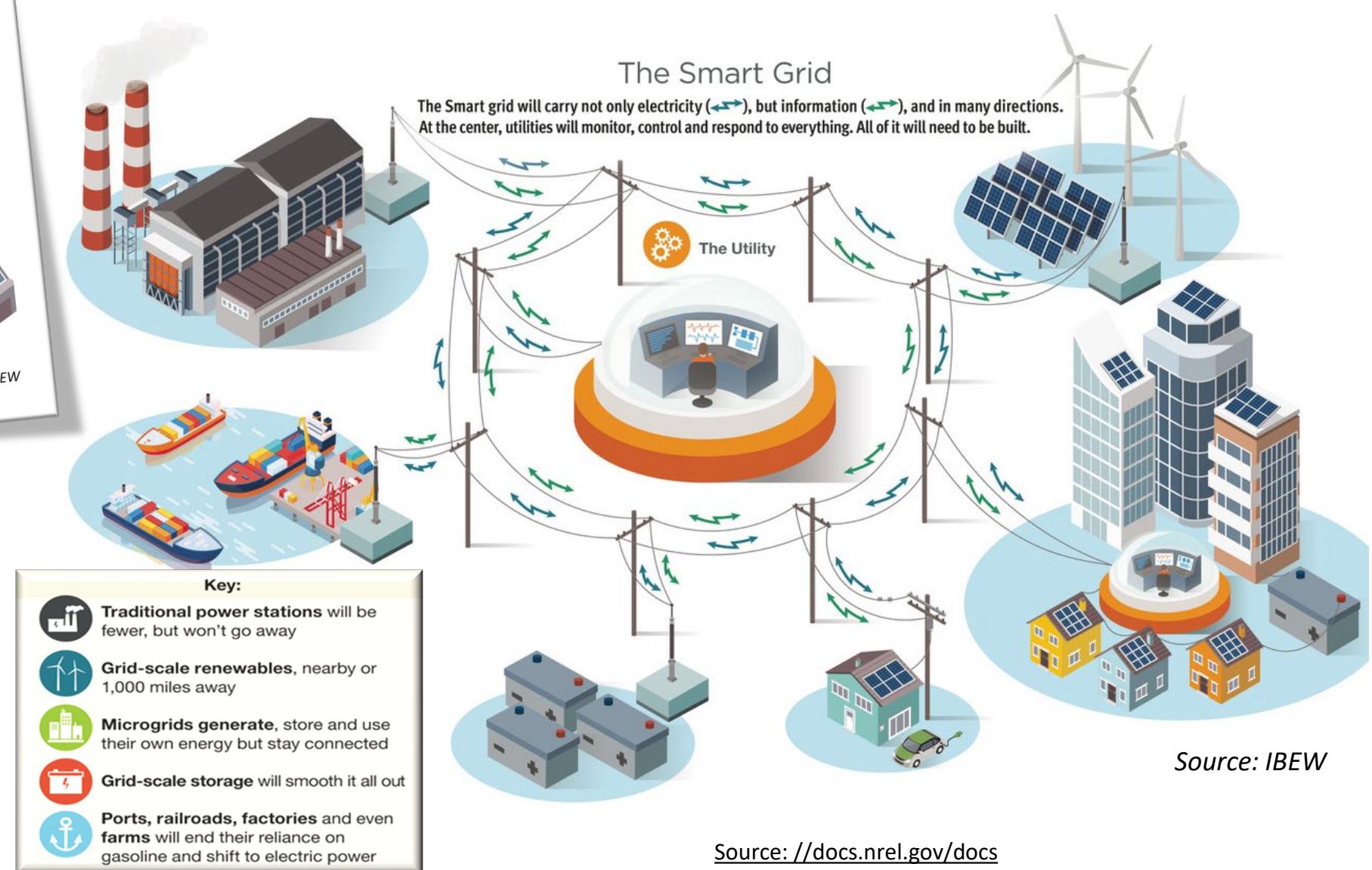
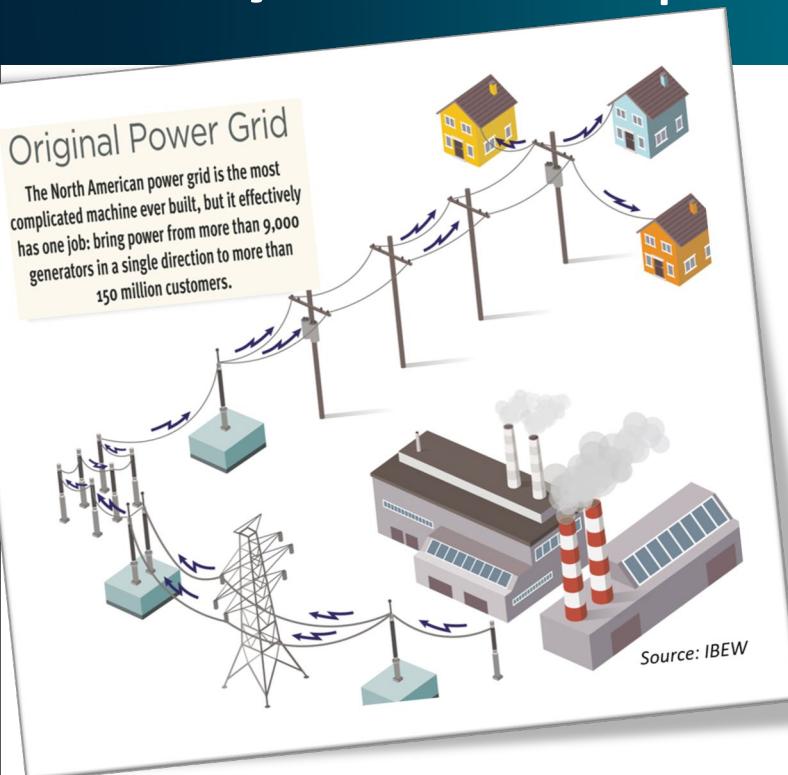
“Each day, millions of people around the world use Meta's products, and the next-generation Alabama data center in Montgomery will soon help keep the company's popular platforms running smoothly,” said Governor Ivey. “Meta is putting down roots in another great location in Sweet Home Alabama, and we're committed to helping the company grow and prosper here.”

Source: [//governor.alabama.gov/newsroom/2024/05](http://governor.alabama.gov/newsroom/2024/05)

Source: [//investors.novelis.com/news-events/press-releases/detail/43](http://investors.novelis.com/news-events/press-releases/detail/43)

Source: [//corporate.arcelormittal.com/media/news-articles](http://corporate.arcelormittal.com/media/news-articles)

# Now/Future: Rapid Change & Increased Complexity



# Managing Grid Reliability

## Advanced Conductors



*High-Temperature Conductor*

## Flexible AC Systems



*STATCOM*

## Power Flow Control



*SmartValve*

## Transmission Deployment



*Transmission Expansion*

## Adaptive Line Ratings



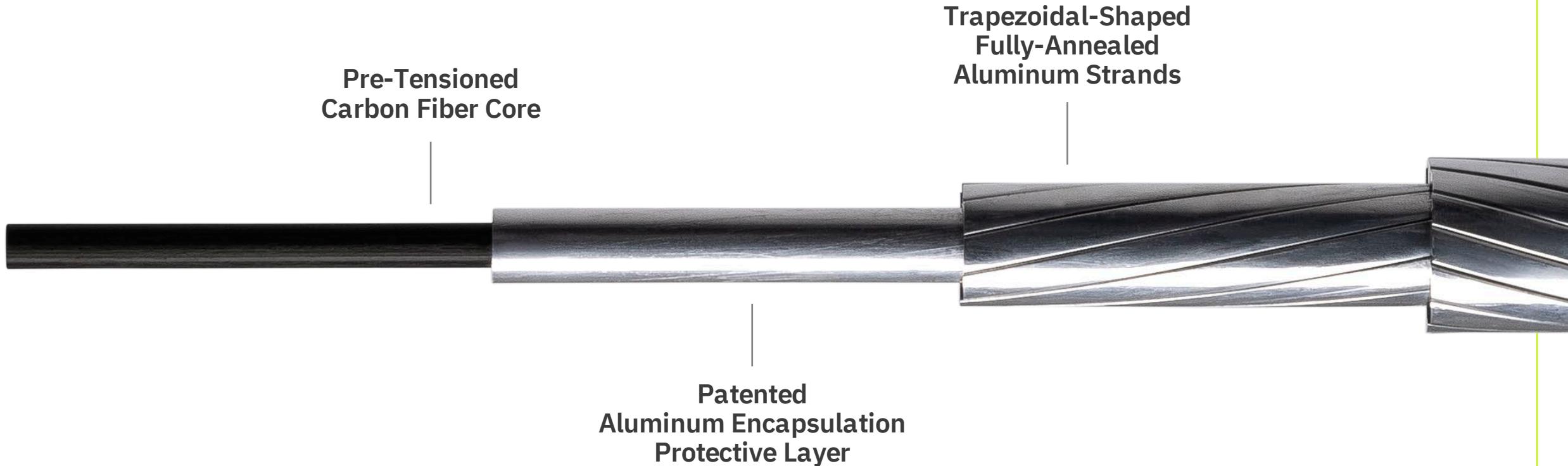
*Dynamic Line Ratings*



# More capacity. Less CapEx.

Next generation advanced conductors enable utilities to double or triple capacity while saving customers money. It's the only advanced conductor that is safe and easy to work with using standard installation practices and equipment.

# Award-winning innovation.



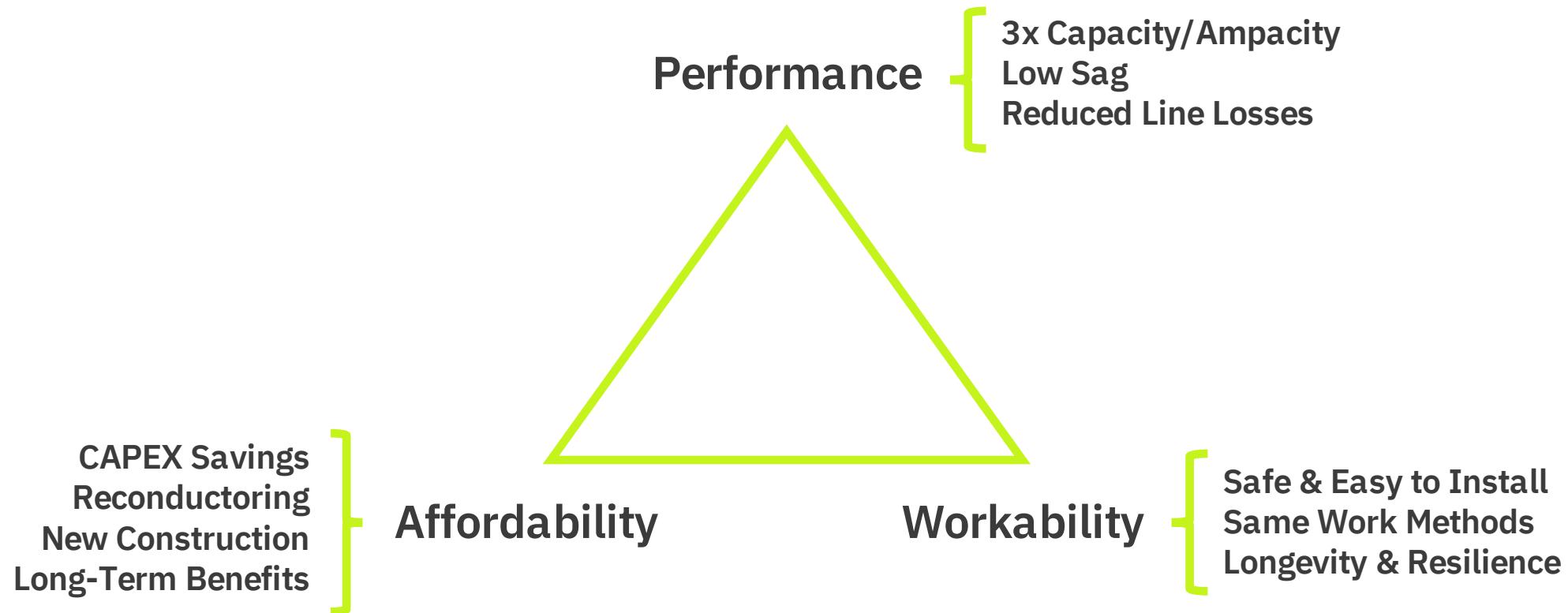
PUBLIC UTILITIES  
FORTNIGHTLY

Bloomberg  
NEW ENERGY FINANCE

AMERICAN  
MADE  
U.S. DEPARTMENT OF ENERGY

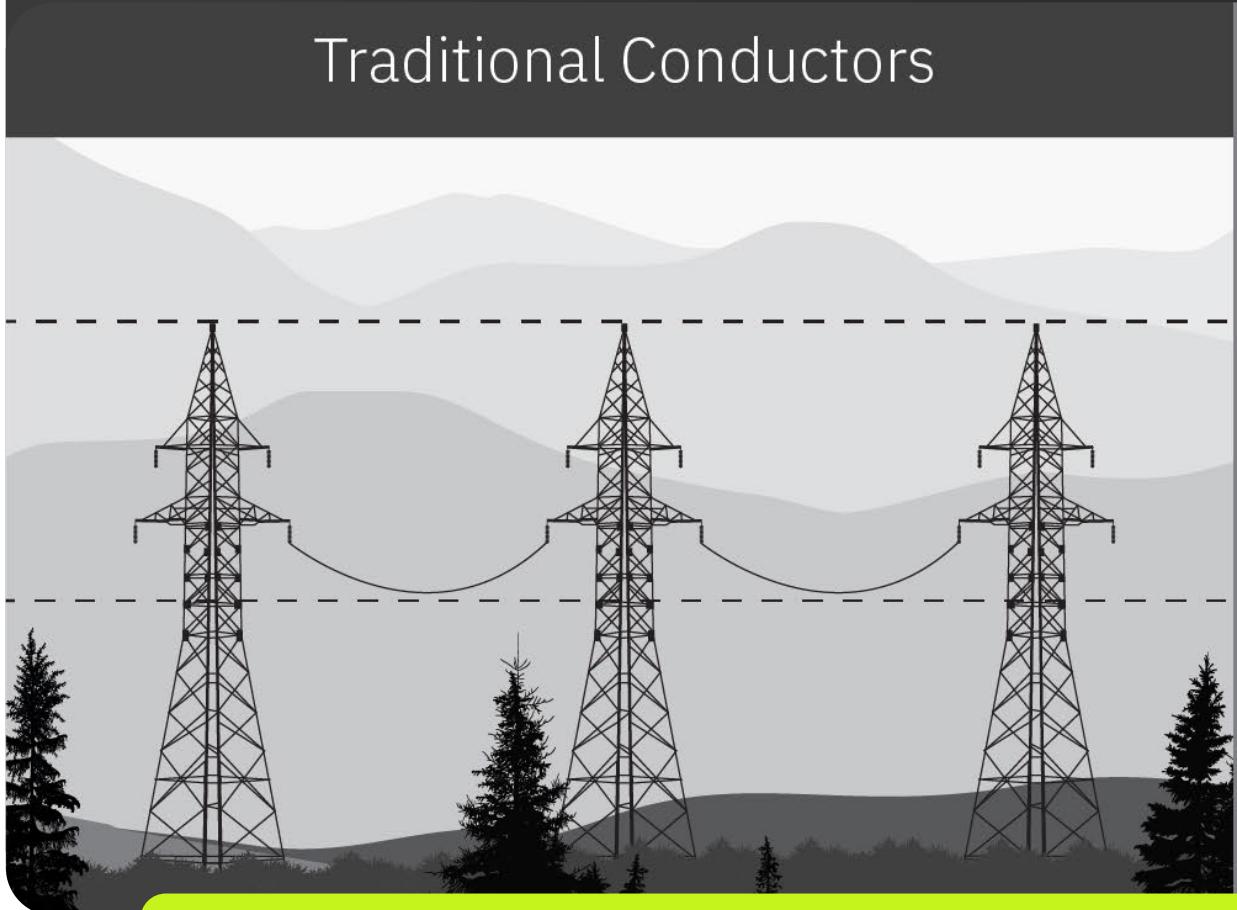
# ***TS Value Proposition***

## for advanced conductor adoption.

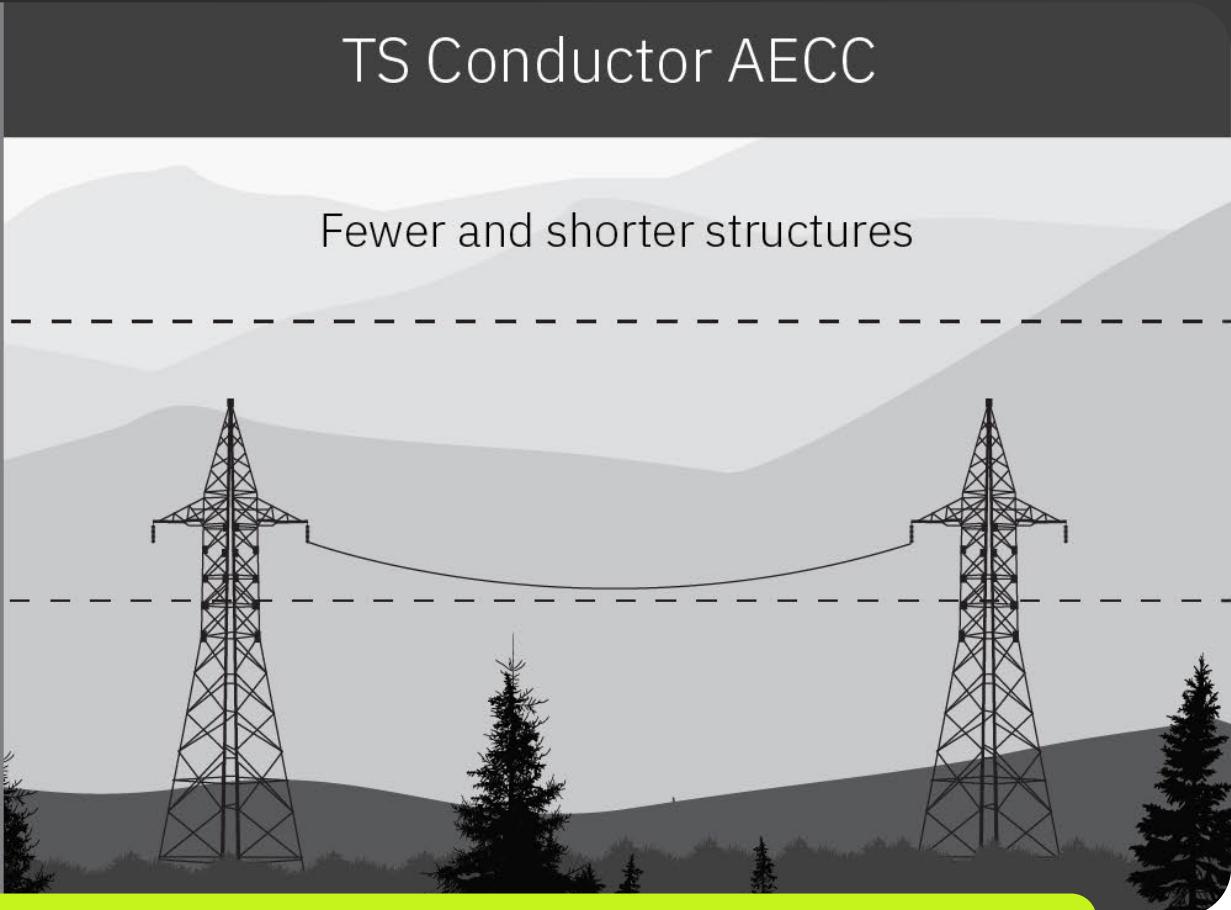


# New construction: Up to 10-20% lower costs.

Traditional Conductors



TS Conductor AECC

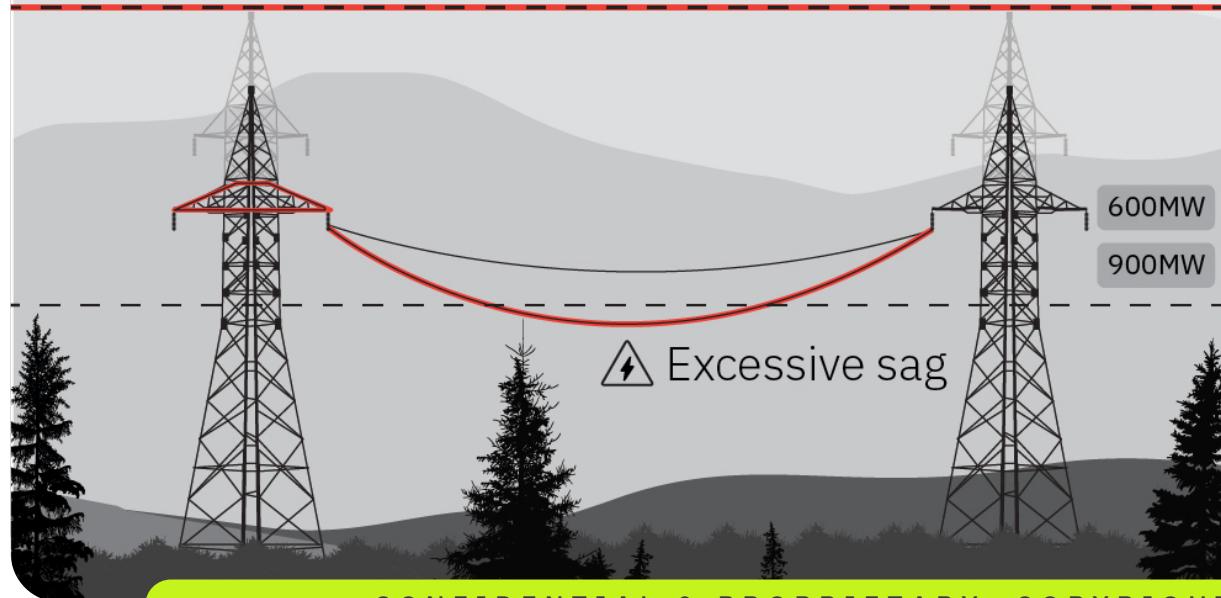


Fewer and shorter structures

# Reconductoring: Up to 30-40% lower costs.

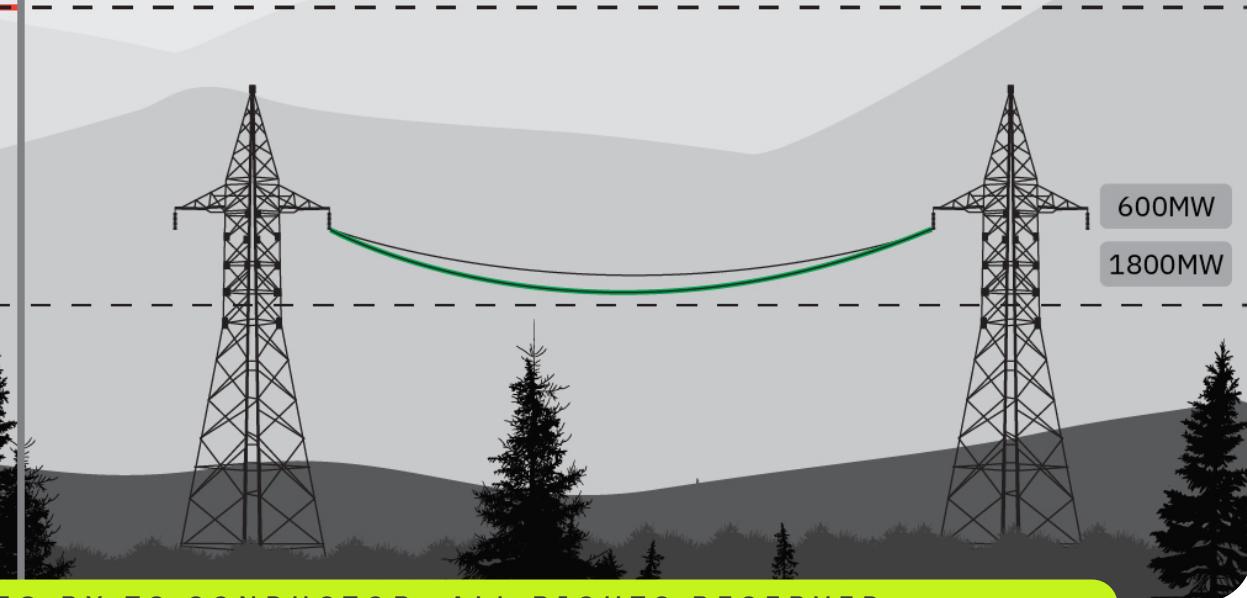
## Traditional Conductors

Structure retrofit required including raising height and/or strengthening crossarms



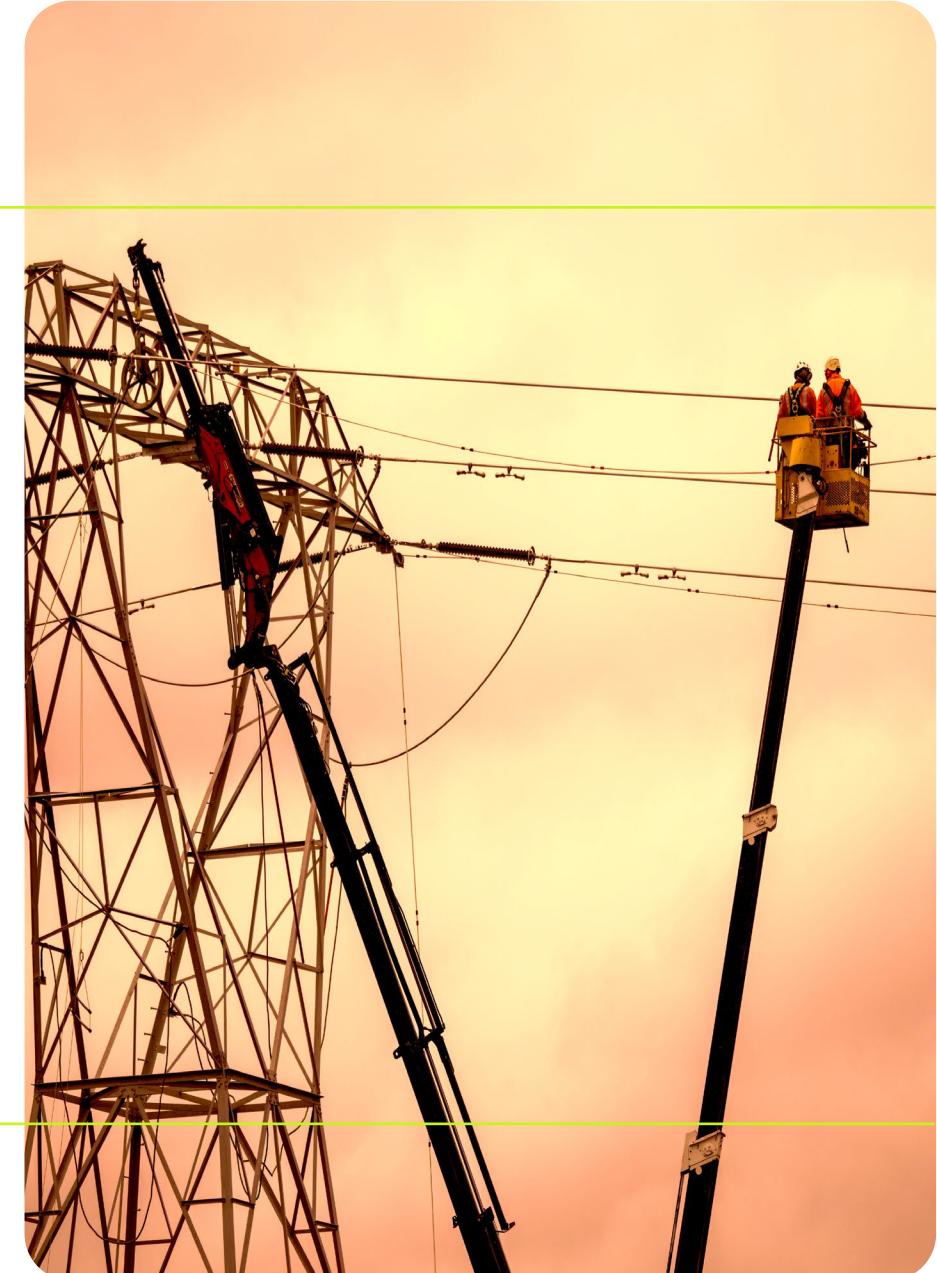
## TS Conductor AECC

Reuse existing structures and crossarms without retrofit



# Summary.

- **Performance:** Up to 3x higher ampacity, less sag, and standard installation methods.
- **New Construction:** 10-20% CapEx savings, fewer towers, reduced labor, and streamlined permitting.
- **Reconductoring:** Up to 30-40% CapEx savings, faster deployment, and no retrofits required.
- **Efficiency:** Up to 50% lower line losses for enhanced grid performance.



# TED Talk.



<https://youtu.be/rHUJAIa7ql?si=1qFpS52dnMavZE-P>

# Breakthrough Energy.



<https://youtu.be/6Vua7eEeUpw?si=51tVXMGeveSDbzrb>



# Thank you.

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# Grid Enhancing Technologies in Virginia

**July 21, 2025**

**Delegate Phil Hernandez  
District 94 (Norfolk)**

# The Context: Rising Demand for Power

**“Unprecedented” energy demand from data centers poses big challenges for Virginia, commission says**

**Lawmakers working to address high electricity bill costs**

OPINION

## **Virginia’s energy future: Balancing growth and costs amid rising demand**

*Over the next 15 years, Virginians’ energy bills are expected to rise as much as 50%, primarily driven by the growing demand from energy-intensive data centers.*

# HB 862 (2024)

## Defined GETs for 1<sup>st</sup> Time in Virginia law:

- "Grid-enhancing technologies" means **a set of technologies that maximize the transmission of electricity across the electric distribution grid in a manner that ensures grid reliability and safeguards the cybersecurity and physical security of the electric distribution grid**, including storage as a transmission asset, dynamic line rating, power flow control, and topology optimization.

## What's does HB 862 Do?

- Requires "a comprehensive assessment" of GETs as part of the integrated resource plans from utility companies.
- Limited to distribution, excludes transmission plans.
- An electric utility that does not include GETs in the IRP "shall include a detailed explanation of why such technologies or conductors are not included in such plan."

# Emerging Tech > Partisan Politics

HOUSE VOTE:  
58-39  
SIGNED INTO LAW  
APRIL 5<sup>TH</sup> 2024



VIRGINIA LEAGUE OF  
CONSERVATION VOTERS



[Ted.Thomas@energizestrategies.com](mailto:Ted.Thomas@energizestrategies.com)



## Role of Regulator.

1. Regulatory compact: State gives company monopoly, state sets the rate charged for service.
2. Legislative delegation of authority to set rates and resource adequacy.
3. Rates are prices and prices are policy.
4. Further study: *Prophets of Regulation* by Thomas McCraw.

## Challenges for innovation in the monopoly model.

1. Universal service mentality: One size fits all.
2. Incentives inherent in cost of service ratemaking.
3. Absence of market conditions that drive innovation in other sectors of the economy.
4. Challenge of product differentiation.

# Grid Economics 101.

1. All forms of generation have limitations.
2. All forms of generation have different and sometimes changing costs.
3. Economic dispatch by balancing authority.
4. The grid enhances the geographic reach of generation resources.
5. End goal: A more robust grid paid for by generation savings.

# Grid Enhancing technologies

1. Technology is not static.
2. The goal is a culture of innovation, not adoption of a particular technology.
3. The early bird gets the worm, the second mouse gets the cheese.
4. Increased throughput for same investment/right of way.
5. Price information to provide customer options.

# Specific technologies

1. Old School: SCADA.
2. New School 1: Dynamic Line Ratings and
3. New School 2: Ambient Adjusted Ratings.
4. Distribution grid: AMI for hourly measurement of usage that can be matched with cost.
5. Enables non-wires alternatives, consumers to see prices, etc.

# THANK YOU!



# POLICY SESSION 11

# Meeting Energy Demand: How States Are Using Advanced Transmission Technologies to Modernize the Grid

MONDAY, JULY 21

