

**Emerging Topics:
Data Centers and Energy Infrastructure**



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Today's Presentation

- Data Centers
- Increasing Energy Demand
- Transmission Lines
- Investments in Energy Infrastructure



What is a Data Center?



Data Centers Consume A LOT of Electricity



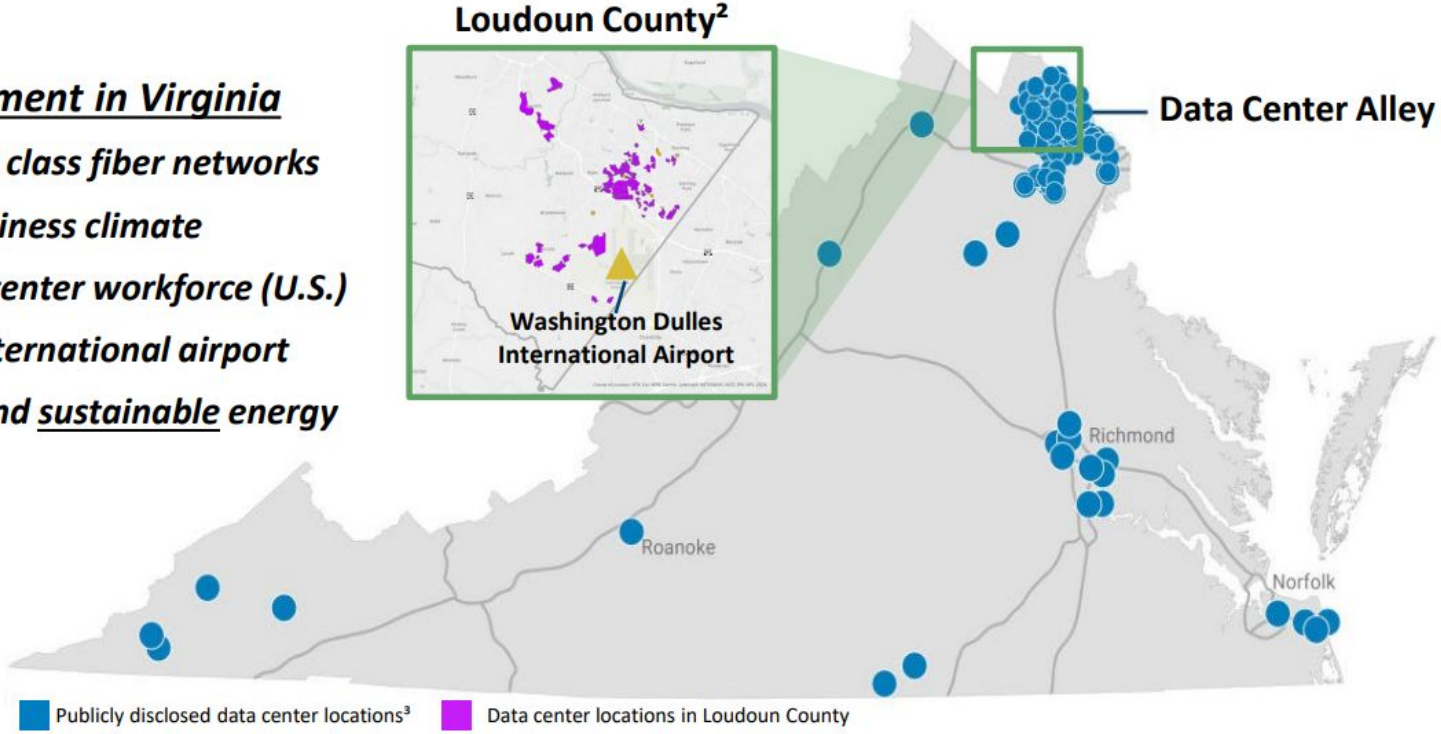
NATURAL GAS 

Dominion Energy Virginia

Northern Virginia boasts the largest data center market in the world¹

Data center development in Virginia

- ✓ **Connectivity to world class fiber networks**
 - ✓ **Attractive business climate**
- ✓ **Access to largest data center workforce (U.S.)**
- ✓ **Access to nearby international airport**
- ✓ **Access to affordable and sustainable energy**

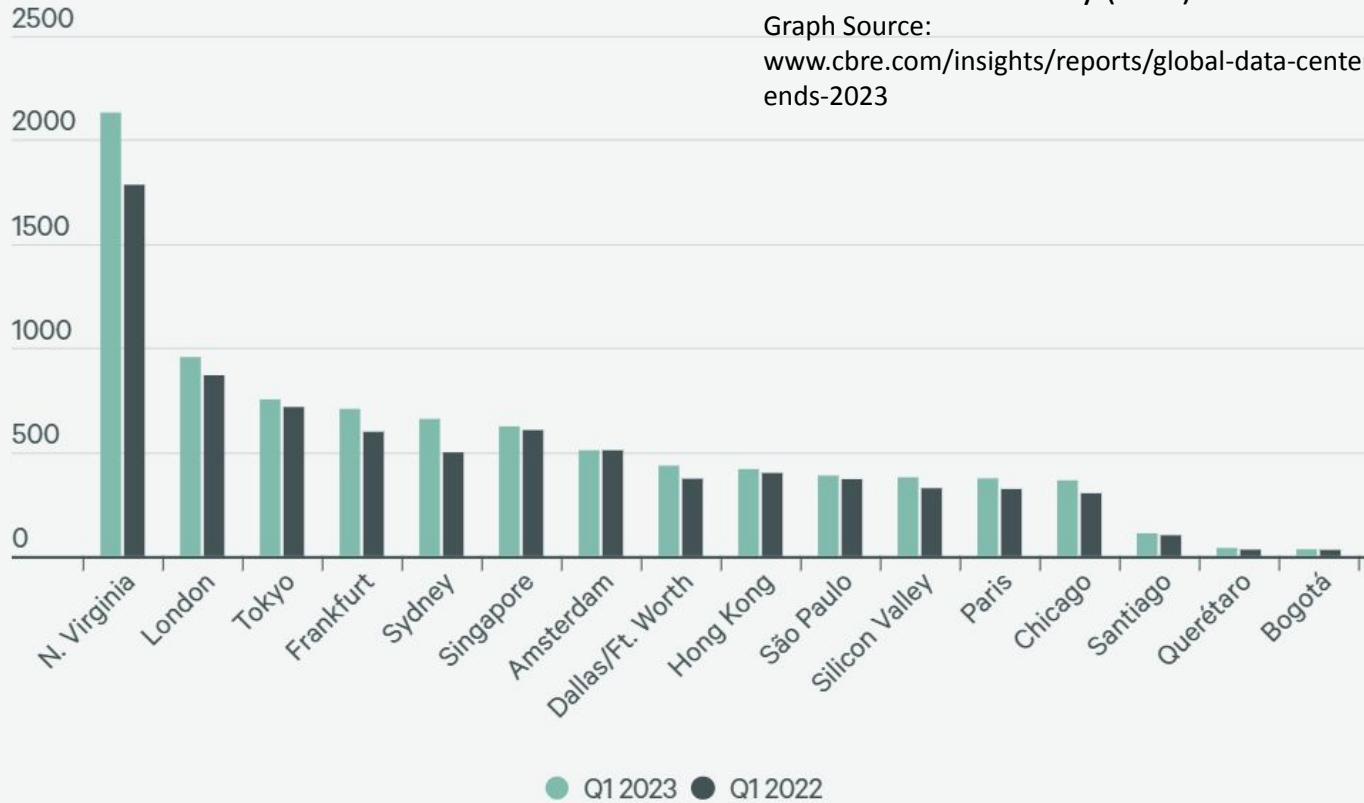


Committed to deliver safe, reliable, affordable and sustainable energy to our customers

Data Center Inventory (MW)

Graph Source:

www.cbre.com/insights/reports/global-data-center-trends-2023



Source: CBRE Research, Q1 2022 & Q1 2023. Figures and data for North American markets include only wholesale colocation facilities. In Europe, Latin America, and Asia-Pacific, total inventory includes both wholesale and retail colocation facilities.

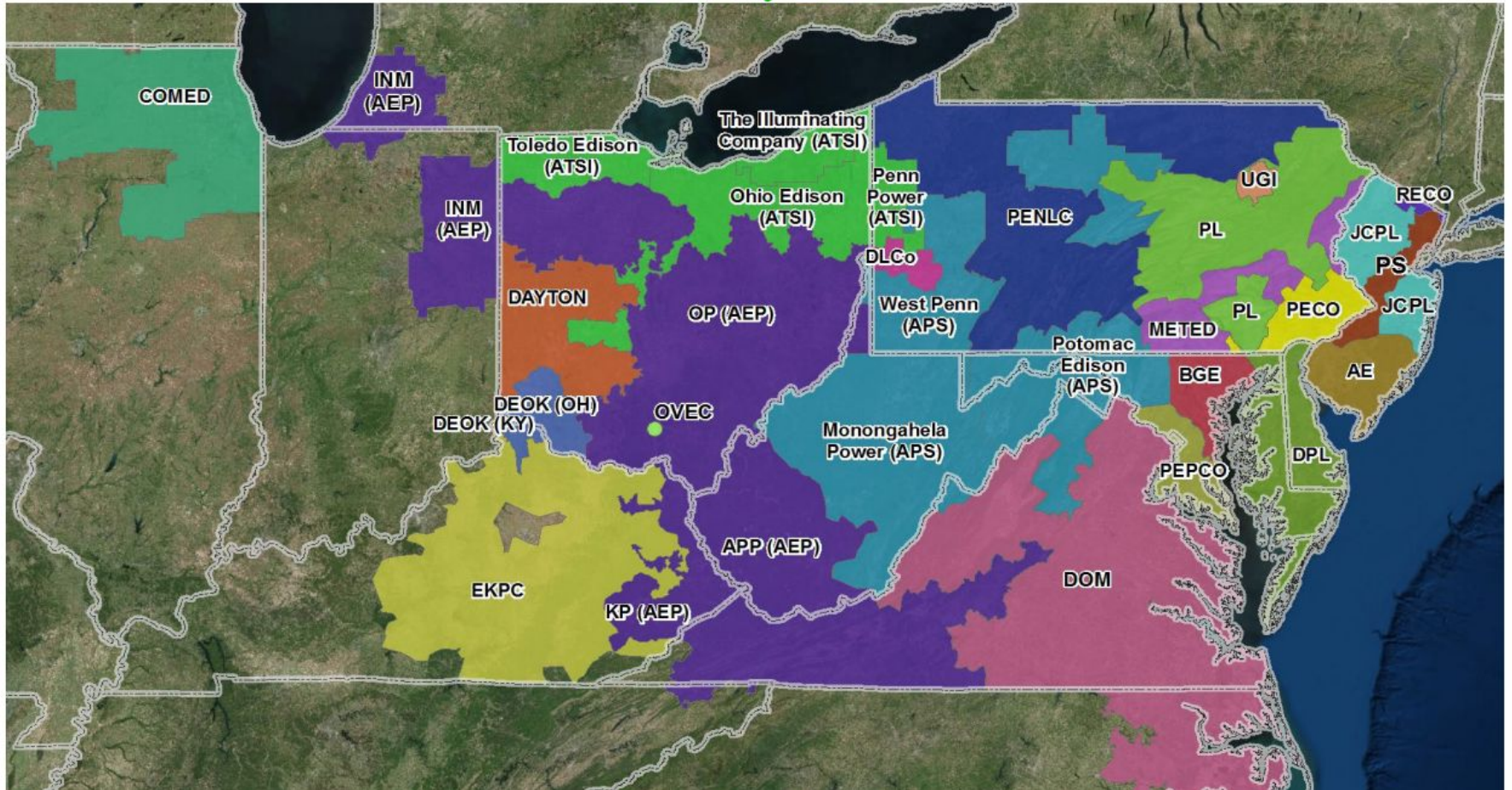
What is driving this?

- Outsourcing of information technology functions
- Advancing smartphone technology and apps (5G)
- Roll out of rural broadband
- Digitalization and storage of data
- Internet of things
- Artificial intelligence and machine learning



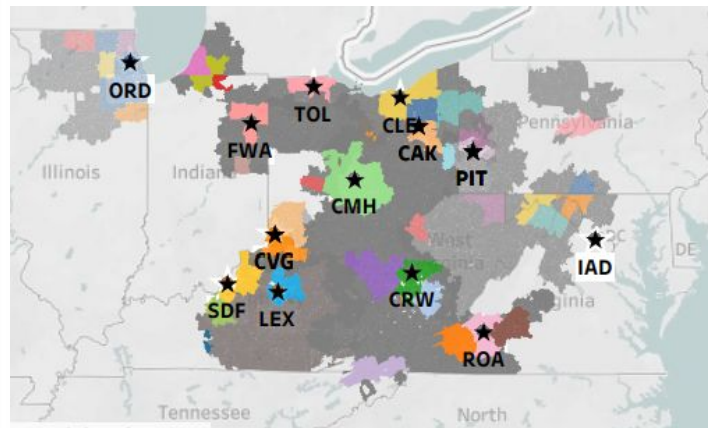
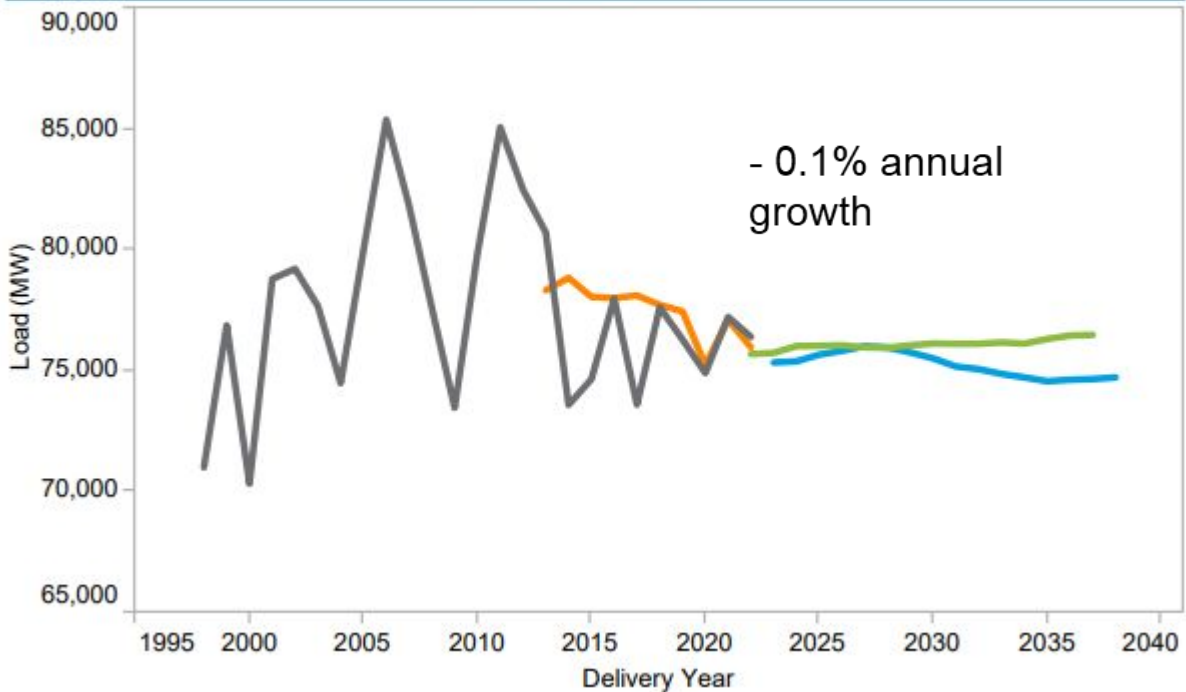
PJM Load Forecast Report

January 2023



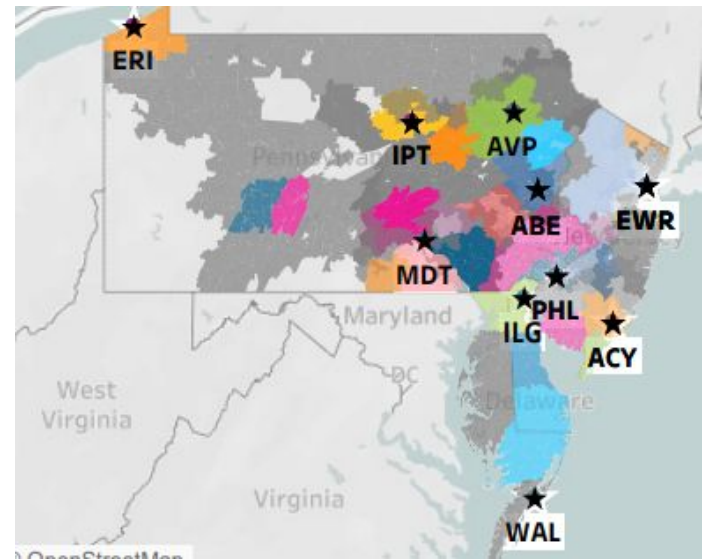
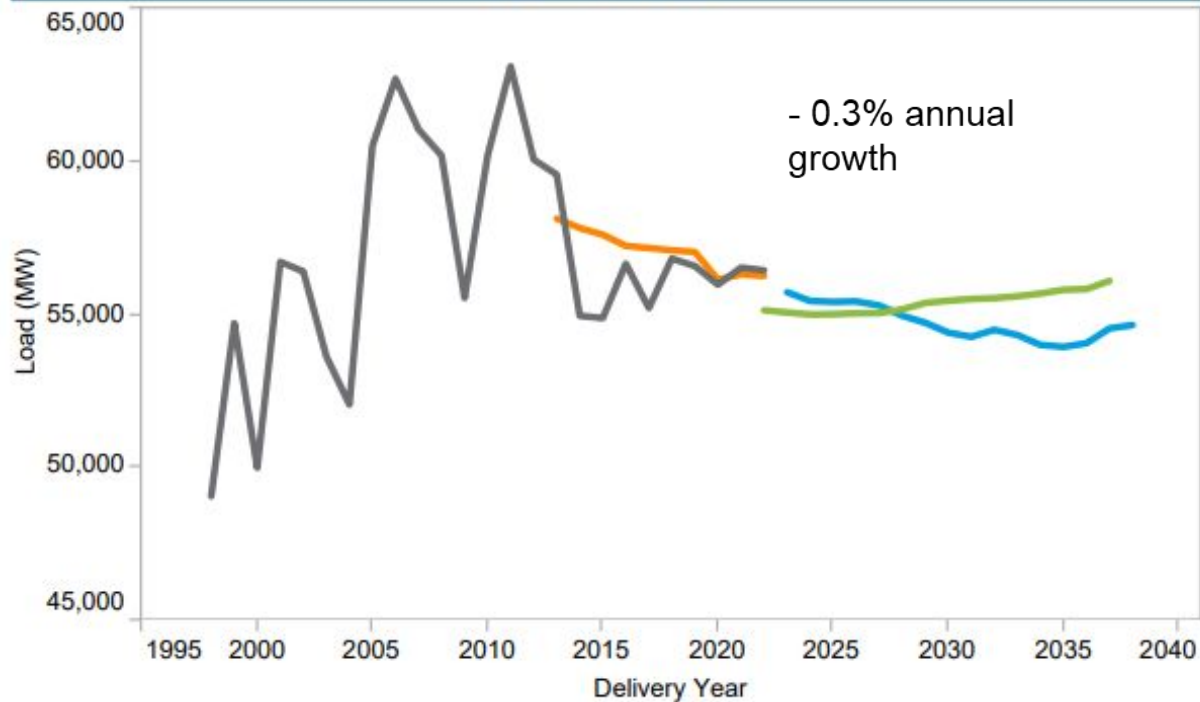
PJM Western Territory

Summer Peak

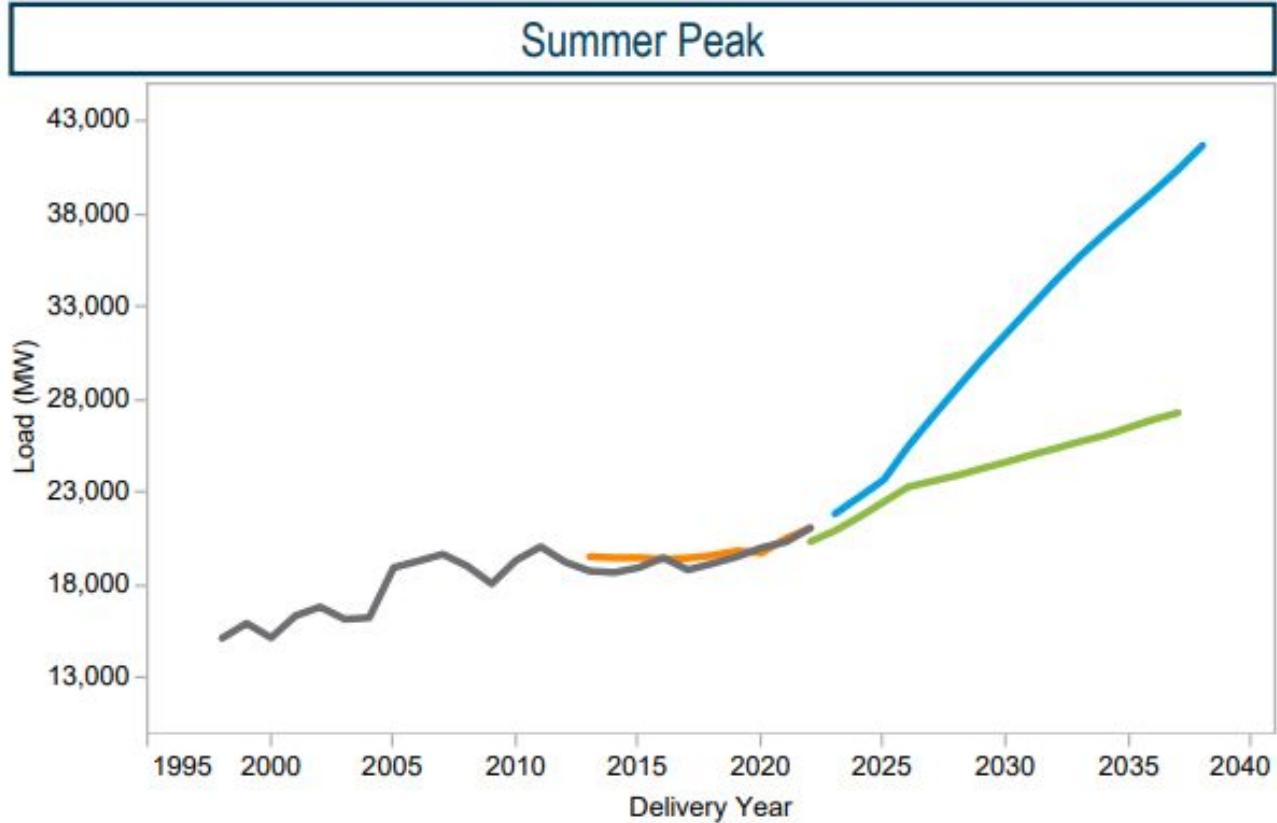


PJM Mid Atlantic Territory

Summer Peak



Dominion Area Explosive Growth Trends



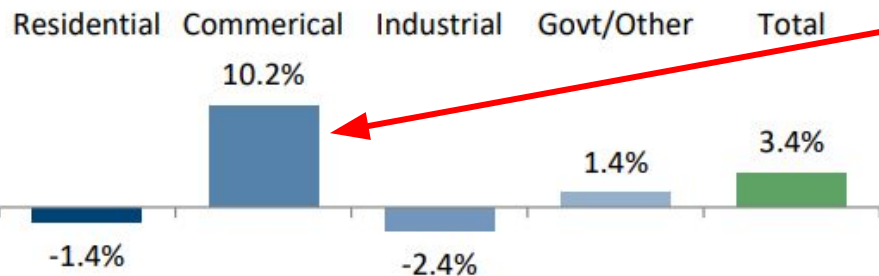
Dominion Area Explosive Growth Trends

**That's a doubling of peak load within
14 years!**

Dominion's Quarterly Report from Q4 2022

Regulated electric sales growth

2022 weather normal sales growth¹



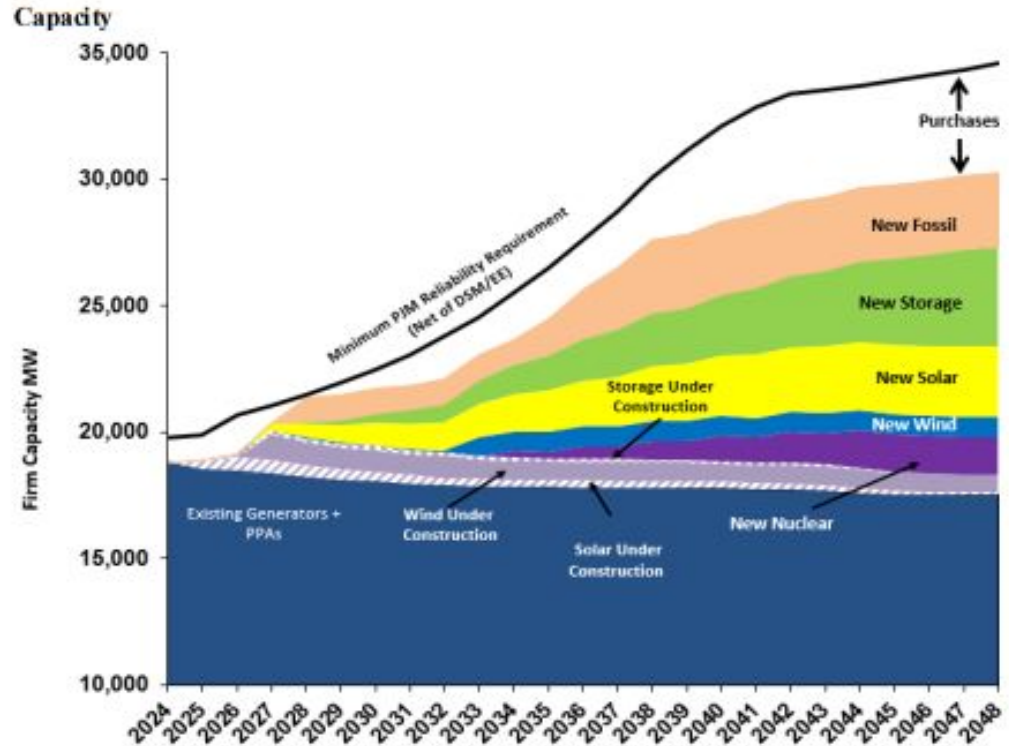
Regulated electric sales trends

- ✓ Robust commercial load growth driven by Data Centers
- ✓ Customer growth remains strong across our Virginia and South Carolina service areas
- ✓ 2023 load growth expected to be above 1 – 1.5% long-term “run-rate” growth guidance

Dominion's "All the Above" Strategy

- All delay retirement of fossil fuel power sources
- All include 970MW of new fracked gas generation with one proposing nearly 3GW
- All include nuclear reactors
- All have a heavy reliance on purchasing out of state power
- All include more solar and wind
- All include more storage
- All include billions for new transmission line construction.

Appendix 2A: Plan B - Summer Capacity, Energy, and RECs



DRAFT
10/5/2023
Proposed
Transmission
Lines to
Serve
Data Centers

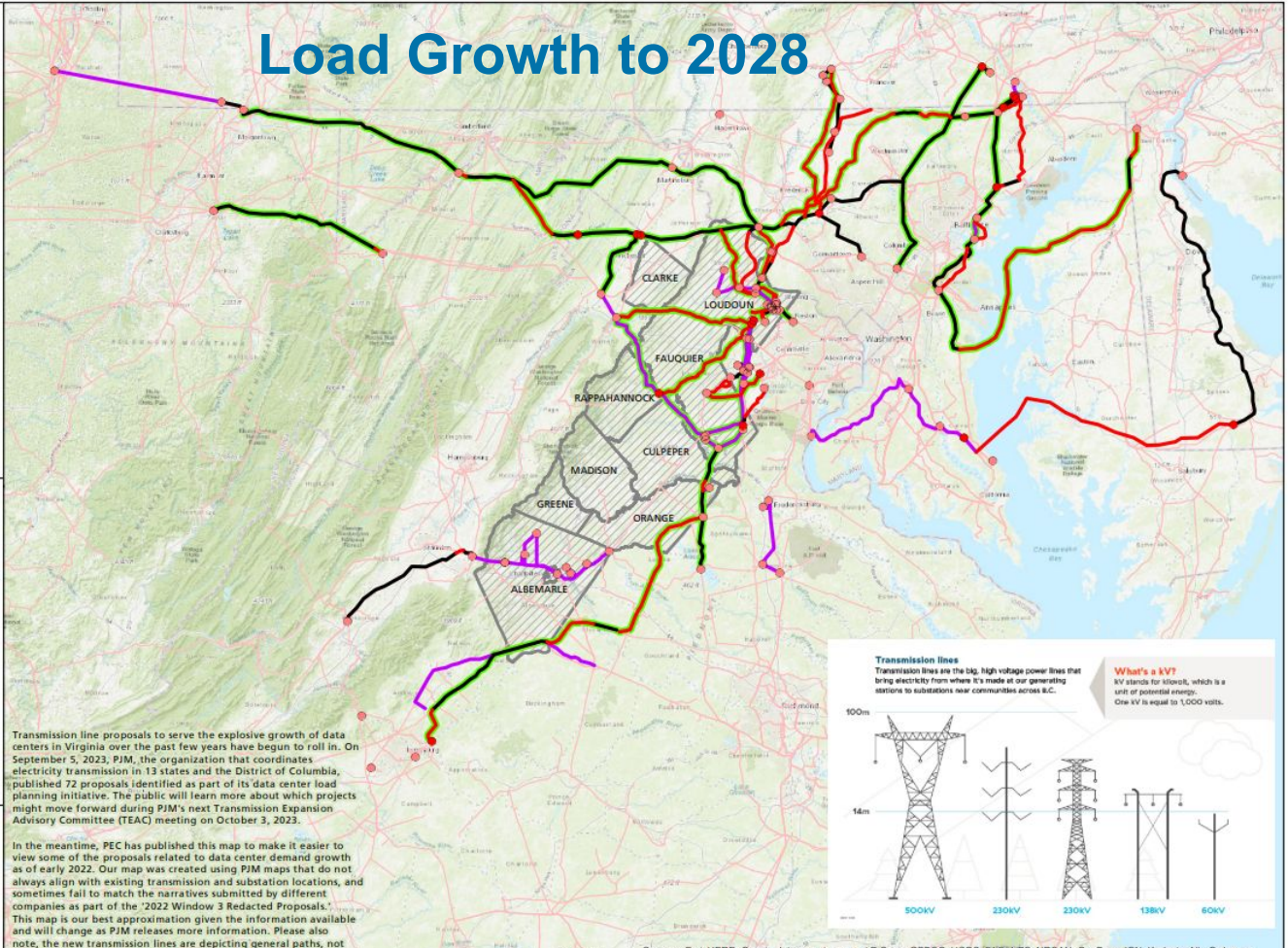


- PEC Service Area
- Electric Transmission Lines
- Proposed Transmission Lines up to 500 kV
 - New Transmission Line
 - Expand Existing Right of Way
 - Rebuild in Existing Right of Way
 - Short List Projects 10-3-23
- Substations
 - New Substations
 - Expanded Substation

0 10 20 Miles

Map created by PEC for presentation purposes only. Data Source: PJM TEAC RTEP 2022 Window 3 proposals, not all transmission proposals are shown. Although efforts have been made to verify data, accuracy is not guaranteed. For more information please visit pecva.org.
9/21/2023 | Watson Randolph

Load Growth to 2028



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Dominion reviving plans to build a natural gas peaker plant in Chesterfield

Proposal signals shift from renewables-heavy focus of the past few years

BY: CHARLIE PAULLIN - JUNE 14, 2023 2:39 PM



Power Storage - VCEA calls for 2,700 MW of storage by 2035

Lithium Battery Storage Pilot Projects -

Operating

- 12 MW - Scott Solar, Powhatan County
- 2 MW - New Kent County
- 2 MW - Hanover County

Permitted by SCC

- 20 MW Chesterfield County
- 50 MW Dulles International Airport in Loudoun County

Long-Duration Energy Storage Pilot Project -

11MW storage at Darbytown Power Station in Henrico (non-lithium technologies - less polluting & avoid the risk of “thermal runaway”)

- ❖ Iron-air batteries developed by Form Energy
- ❖ Zinc-hybrid batteries developed by Eos Energy Enterprises.

A lot of Other Investments in Energy Infrastructure...

- National Interest Electric Transmission Corridor Designation (applicant driven; would unlock federal investment and regulatory/permitting tools)
- Smart Grid Enhancements - Federal Smart Grid Grants (Dominion \$33 million)
- Continued investments in solar both US\$ and small scale distributed
- Small Modular Nuclear - Federal and Virginia investments in pilot projects
- Clean Hydrogen Investment (\$7 billion across the country) - Appalachian Hydrogen Hub will span across West Virginia, Ohio, and Pennsylvania
- Federal investments in domestic manufacturing and research and development (solar manufacturing and recycling, semiconductors, transformers, battery, etc)