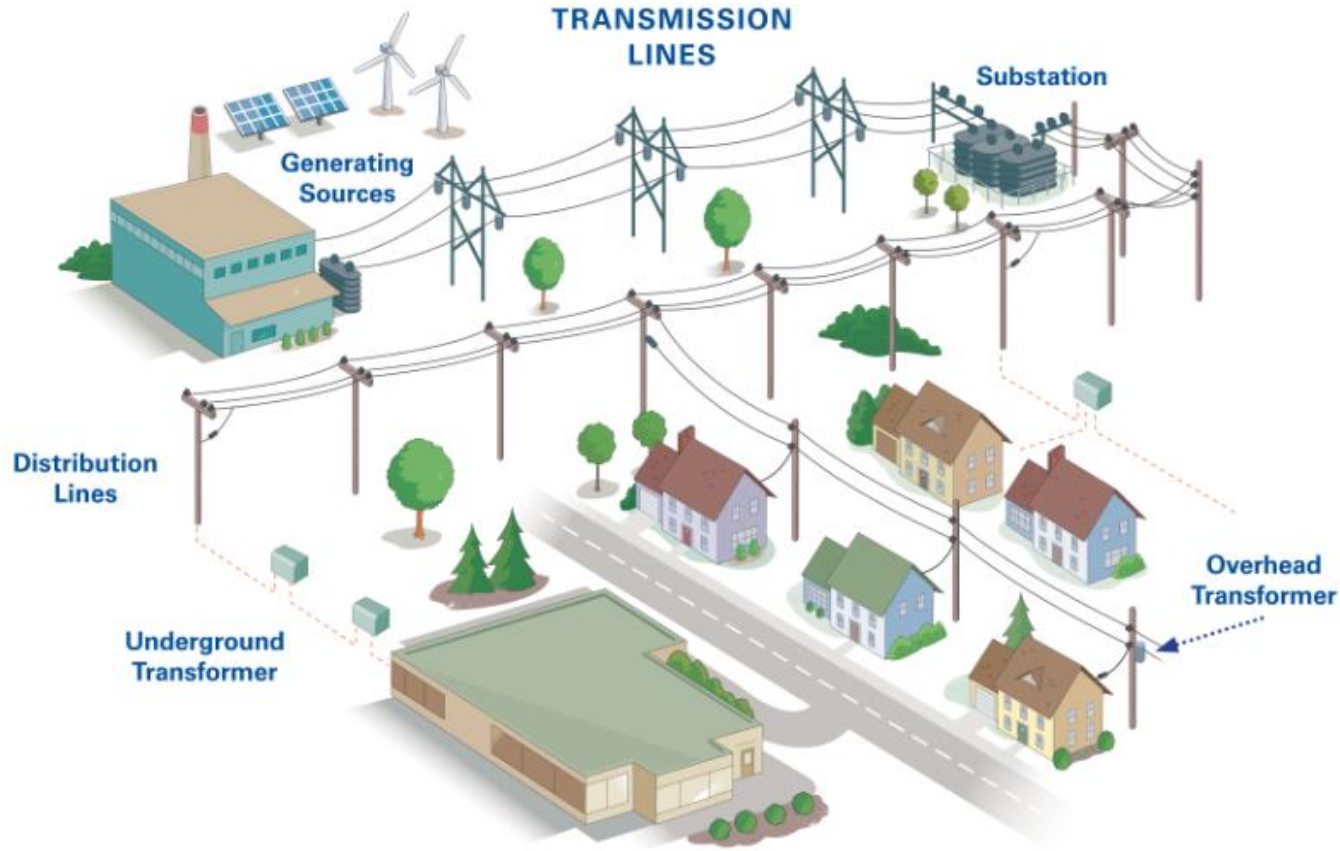


Dominion Energy® Electric Transmission Overview

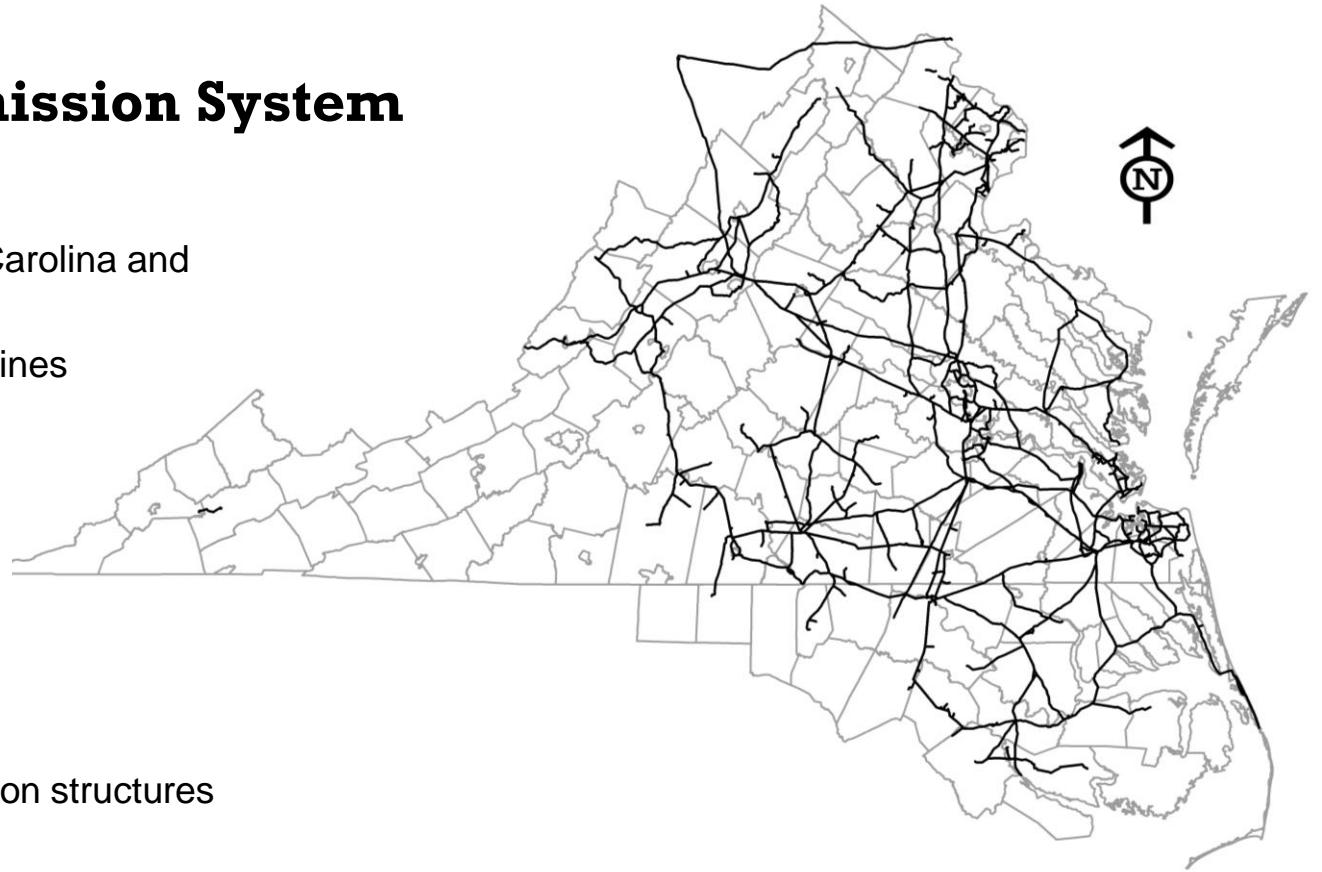


Electric Transmission and Distribution System



Electric Transmission System at a Glance

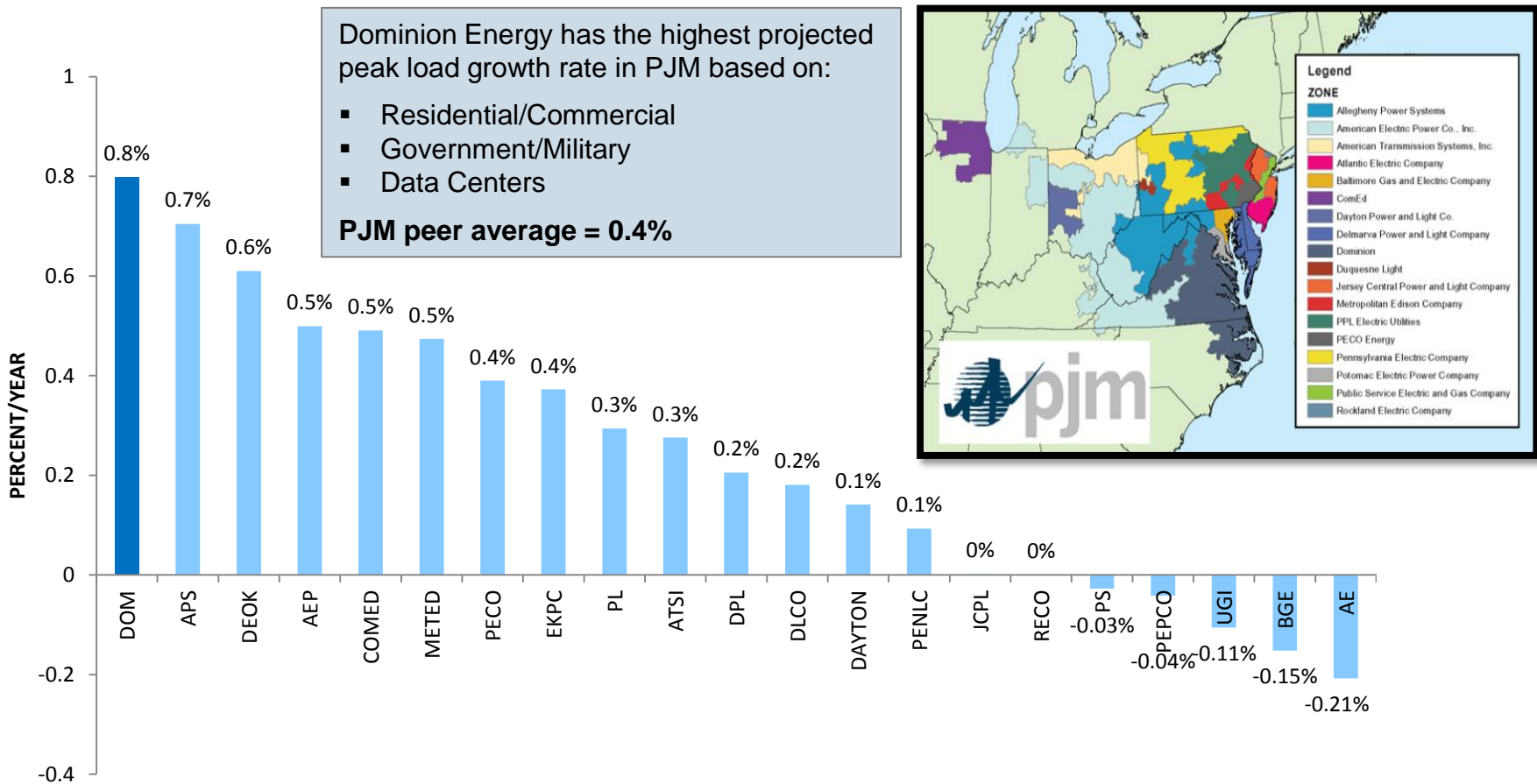
- Operates in Virginia, North Carolina and West Virginia
- 6,600 miles of transmission lines
 - **500 kV** – 1,299 miles
 - **230 kV** – 2,871 miles
 - **138 kV** – 63 miles
 - **115 kV** – 2,293 miles
 - **69 kV** – 78 miles
- More than 800 substations
- More than 45,000 transmission structures



Electric Transmission is responsible for delivering electricity to Electric Distribution and large industrial customers.

Fastest Growing Service Area in PJM

PJM Summer Peak Load Growth Rate (2018 – 2028)



A Defining Moment for the Industry

2003 Blackout resulted in:

- Heightened regulations
- Mandatory fines
- Renewed focus on our nation's energy infrastructure

Note: This is a depiction not an actual satellite image of the 2003 Blackout.

Key Regulatory Bodies



FERC – Exclusive jurisdiction to determine and regulate the reliability of the electric transmission grid



NERC – Regulatory authority to develop and enforce the mandatory reliability standards – criteria, data and methodology to evaluate and ensure the reliability of the bulk power system in North America



PJM – Regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia; Virginia law mandates Dominion Energy's membership



SCC – Regulates Virginia public utility facilities, retail rates and service including transmission line need and routing; issues certificates of public convenience and necessity (typically electric transmission lines equal to or greater than 138 kV)

**Cities
and Counties**

Local Governments – Regulate local land use (substations); typically electric transmission lines equal to or less than 138 kV

At Dominion Energy, we are committed to identifying and resolving reliability concerns in the areas we serve.



Forces Driving Infrastructure Need



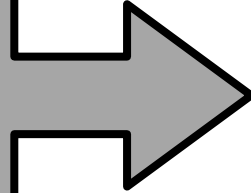
**Economic
Growth**



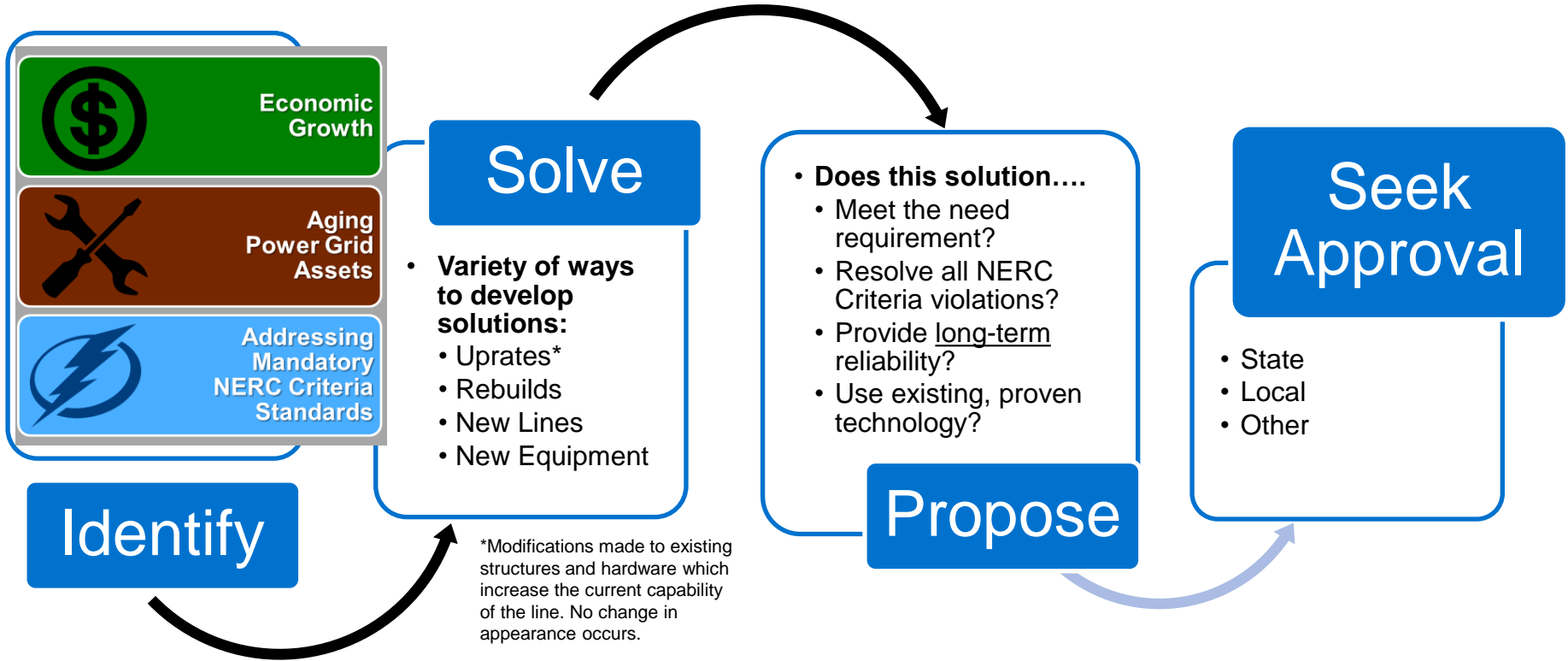
**Aging
Power Grid
Assets**



**Addressing
Mandatory
NERC Criteria
Standards**



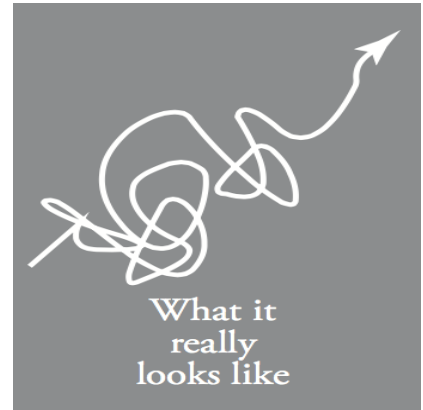
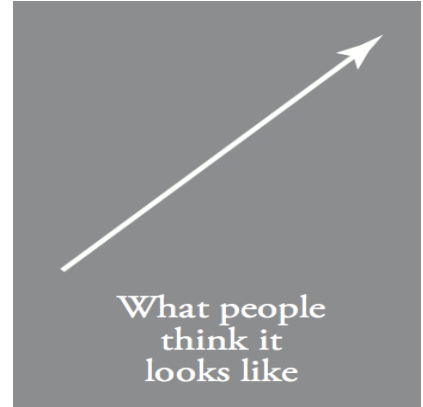
Modeling Required for System Reliability



Project Development and Approval

High-level Steps

- **Step 1:** Determine need and potentially impacted communities
- **Step 2:** Review existing conditions – routing and siting
- **Step 3:** Develop conceptual project scope and engineering
- **Step 4:** Public engagement process (pre-SCC) to include open house(s), project website, detailed mailers
- **Step 5:** SCC review of Dominion Energy project scope and feedback from participating parties to the case
- **Step 6:** SCC-approved configuration



Electric Transmission Line SCC Application Review Process

The Virginia State Corporation Commission (SCC) has regulatory authority over all energy providers in Virginia and requires certification for all transmission lines out of the ordinary course of doing business or are at or above 138 kilovolts (kV). Among other responsibilities, the

SCC validates the need for a proposed line and approves the route and structures. In reviewing a proposed project, the SCC must consider whether potential impacts on scenic assets, historic districts and the environment have been reasonably minimized.



Dominion Energy notifies county and city officials of intent to file
Required pursuant Code of Virginia § 15.2-2202

Dominion Energy submits application to SCC
Includes full project details, including need, cost, routing options, potential impacts, etc.

Dominion Energy notifies electric cooperatives



SCC posts application for public review
Available at scc.virginia.gov

SCC issues procedural order
Case schedule is set; SCC invites public comments and formal participation in the case as a respondent

Department of Environmental Quality (DEQ) issues first report
Due within 60 days of application filing



SCC conducts public hearings
Held in selected areas near the project

DEQ issues coordinated comments
Summary of recommendations from multiple state resource agencies to minimize impacts and for compliance with legal requirements



Public comment period opens
Submitted online or via mail

Discovery begins
SCC Staff starts its review; SCC Staff, Dominion Energy and respondents may serve discovery

Interested parties can join case as respondents
Formal mechanism to join proceedings

Dominion Energy issues public notice
Notifies local officials, impacted landowners and the public

Respondents submit testimony

SCC Staff submits its report about the project

Dominion Energy submits rebuttal testimony
In response to DEQ summary, staff report and respondent testimony



Public comment period closes

SCC conducts formal evidentiary hearing
Testimony submitted and subject to cross examination by SCC Staff, Dominion Energy and respondents

SCC hearing examiner issues report of recommendation

Participants issue response
SCC Staff, Dominion Energy and respondents comment to hearing examiner's report

- Dominion Energy's Responsibility
- Public Involvement Touchpoints
- Procedural Steps
- Optional Step Determined by SCC

Process could take as little as eight months to complete if uncontested, with more complex proceedings ranging from 12–24 months from start to finish

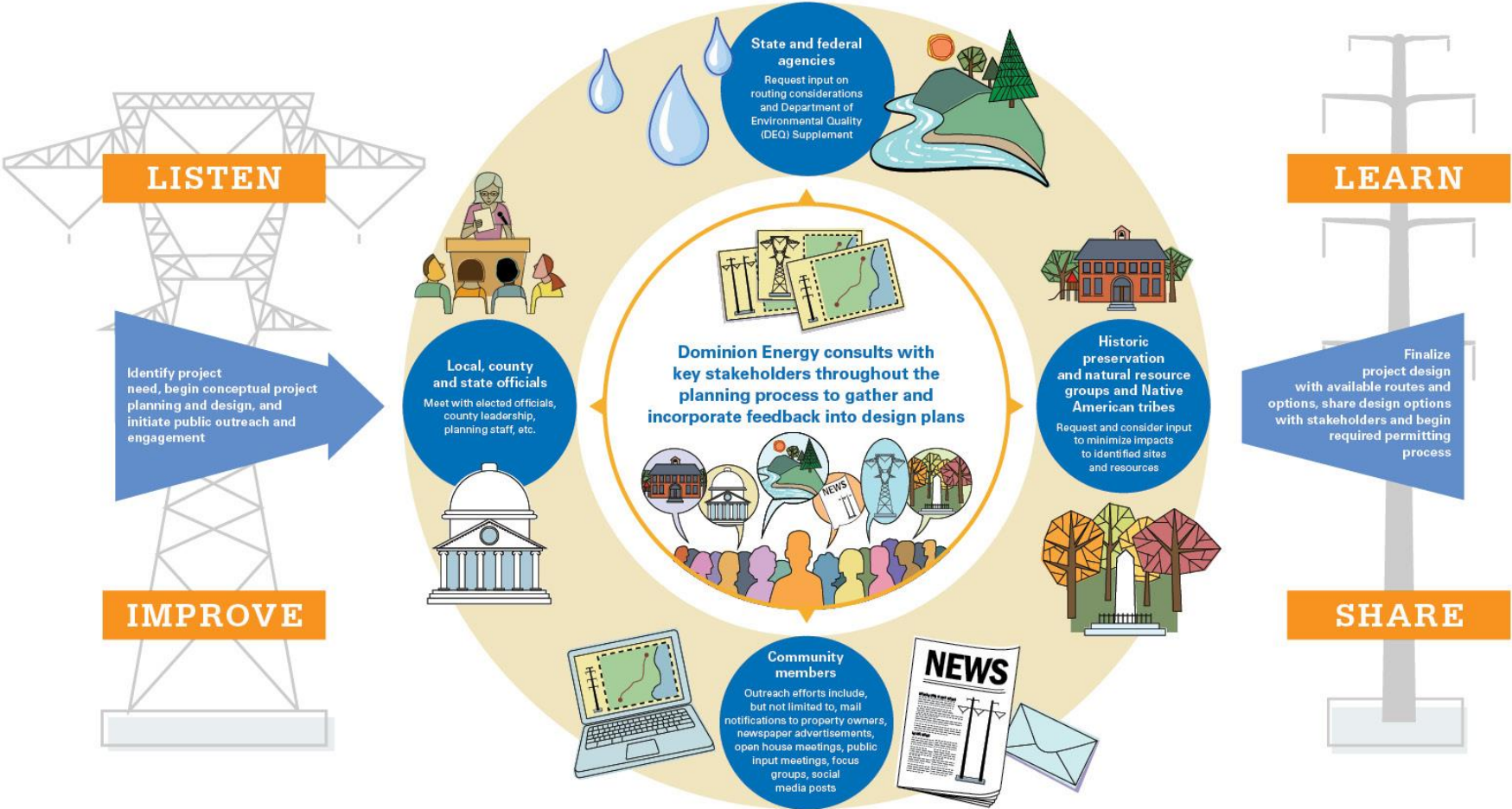


Dominion Energy begins construction of facilities

Dominion Energy pursues additional permits as needed
Local permits, U.S. Army Corps of Engineers, Federal Aviation Administration (FAA), etc.

SCC issues final order
If approved, SCC issues a Certificate of Public Convenience and Necessity (CPCN) authorizing Dominion Energy to construct and operate the facilities

Electric Transmission Line Planning and Public Engagement Process



Routing Considerations

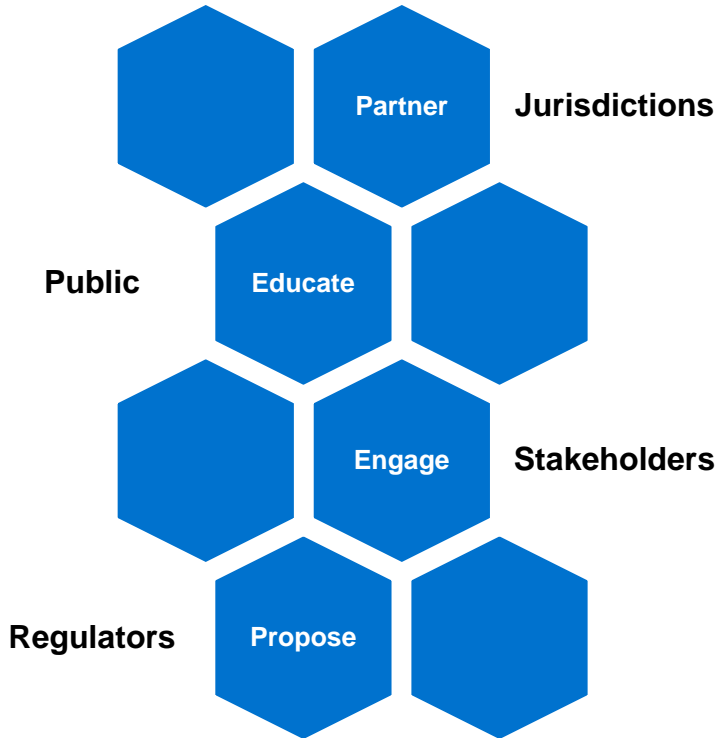
Foundational Principles

- Process always begins with review of existing rights of way and facilities
- Review land use of the property owners
- Colocate with other infrastructure, where appropriate
- Adhere to property boundaries if possible
- Minimize impacts to agricultural, human, environmental, cultural and historical concerns



Partnerships to Meet Future Demand

Modern Grid Infrastructure Improvements = Win-Win



Local Economy

- Creates jobs during construction
- Provides long-term tax revenues

Economic Development

- Supports local businesses with more reliable energy
- Provides flexibility for future economic growth

Reliable, Diverse Energy

- Improves service for customers by preventing power outages or speeding response to outages
- Diversifies energy supply by bringing renewables like solar and wind to the electric grid

Key Takeaways

Substantial new load associated with development will require new or modified electric transmission infrastructure.



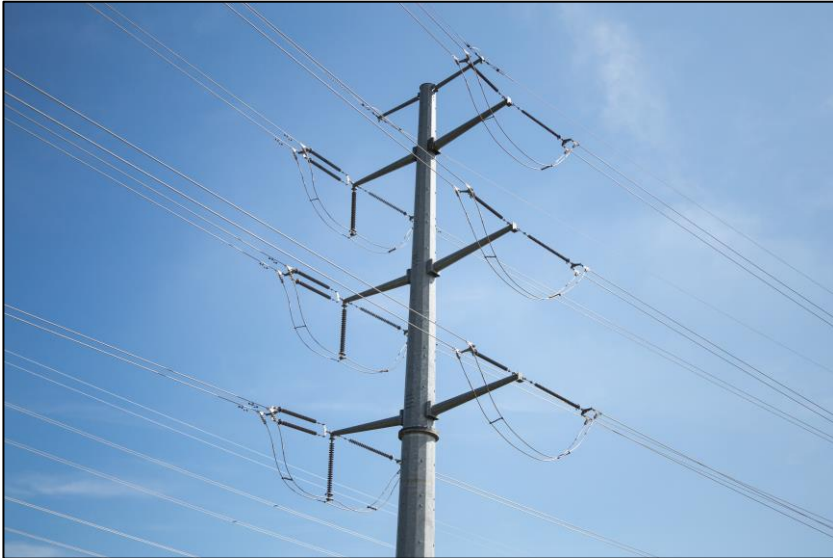
Key Takeaways

Generally speaking, proposed large loads at a site located near existing electric transmission lines can make the routing and siting process easier.



Key Takeaways

Colocating electric transmission facilities with other utilities (highways, railroads, etc.) can help mitigate impact on private property, and environmental, historic and scenic resources.



Key Takeaways

The approval and permitting process is lengthy for new electric transmission infrastructure; communicate early and often with appropriate energy providers to ensure timely completion.



Our company is built on a proud legacy of public service, innovation and community involvement.

Extra Slides if Needed

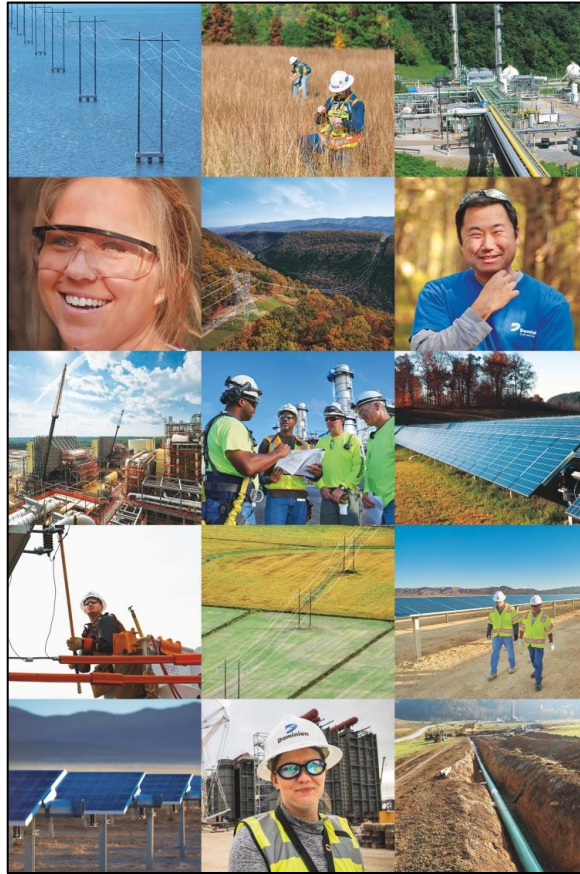
Core Values

Safety:

Safety is our **highest priority** – in the workplace and in the community.

Excellence:

We set high performance standards and are committed to **continuous improvement** in all areas of our business. The odds of long-term success improve when we **go beyond “good”** and **strive for “great.”**



Ethics:

Ethical behavior matters, and our **reputation depends on it.**

Teamwork:

“One Dominion Energy” – We know that **strong, sustainable performance** depends on how well we **support each other** in executing our business plan.

Electric Transmission vs. Electric Distribution

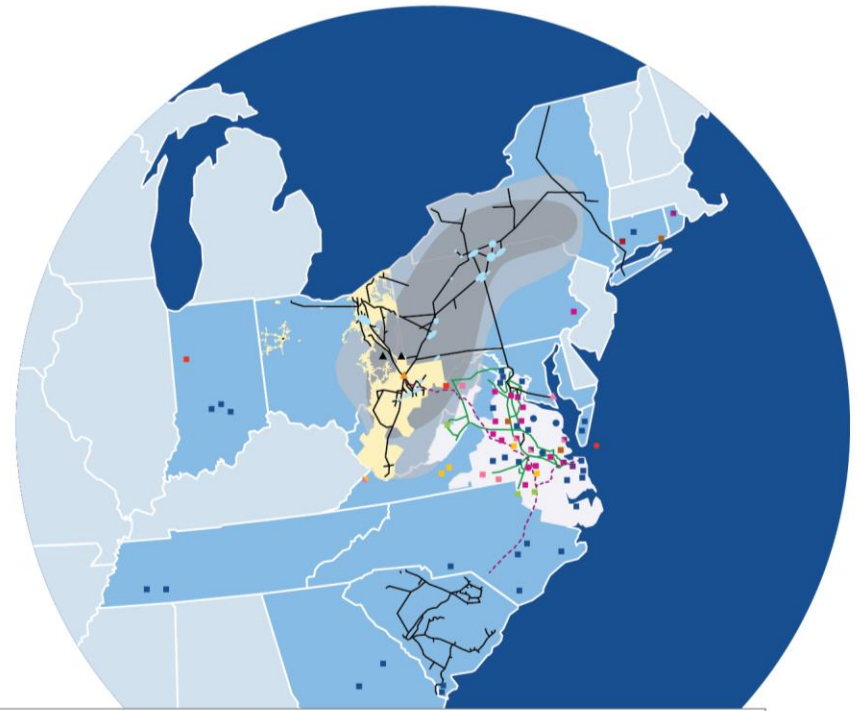
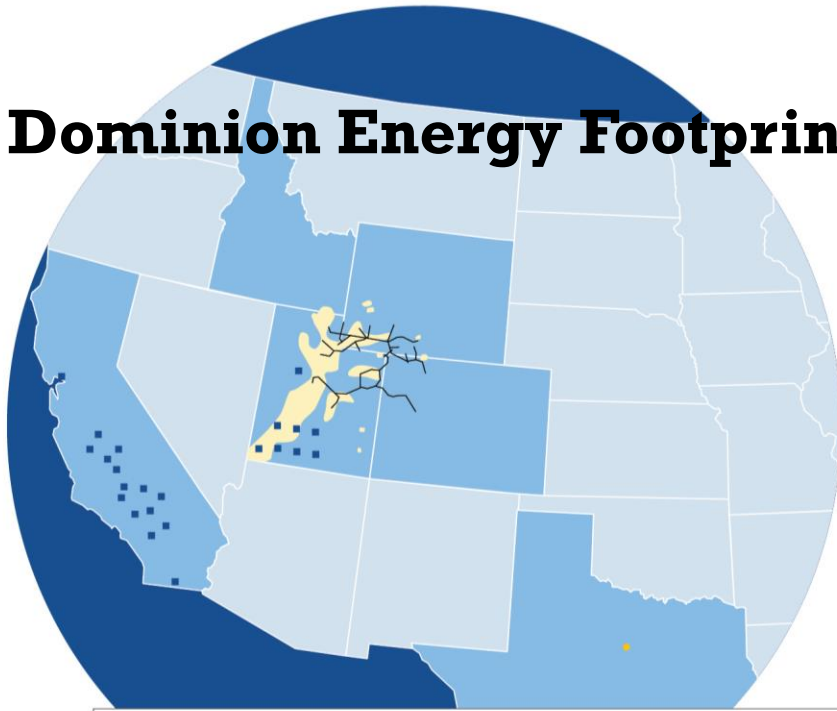
**Transmission Lines:
Lattice, H-frame and Monopole Structures**



**Distribution Line:
Overhead Structures**

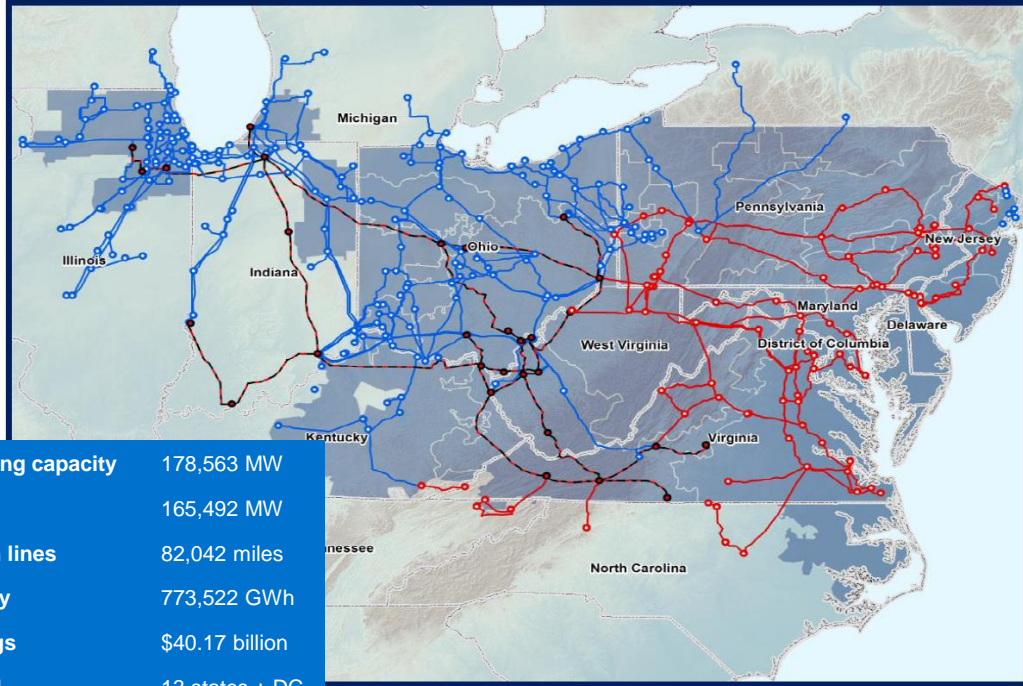


Dominion Energy Footprint



PJM Interconnection

One of the largest centrally dispatched control areas in North America

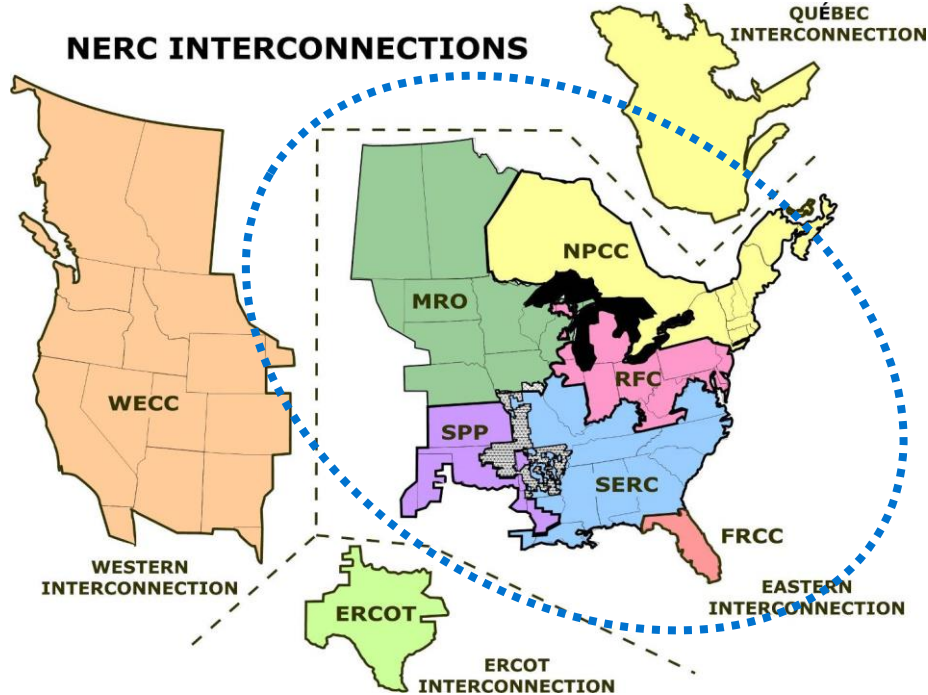


2017 generating capacity	178,563 MW
Peak demand	165,492 MW
Transmission lines	82,042 miles
Annual energy	773,522 GWh
Annual billings	\$40.17 billion
States served	13 states + DC
Territory	243,417 miles
Population	65 million

- PJM Interconnection is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity
- Neutral, independent party – operates a competitive wholesale electric market and manages the high-voltage electric grid
- PJM’s long-term regional planning process provides a broad, interstate perspective that identifies the most effective and cost-efficient improvements to the grid
- Ensures reliability and economic benefits on a system-wide basis

The Interconnected Grids

Dominion Energy is in the Eastern Interconnection



Transmission System Projects

Maintaining reliability is becoming more complex

- Economic growth – regional and statewide
- Aging power grid assets
- Addressing mandatory NERC criteria standards
- PJM Load Forecast
- Large load additions – such as data centers
- Generation retirements and additions
- Growth of intermittent renewables



Local Zoning, Siting, Approval Steps

- Inform state and local officials
- Details to local officials
- Local public outreach and engagement
- Land use committee
- Planning commission
- Board of supervisors

Routing Considerations

Physical Constraints

- Wetlands and waterway crossings
- Conservation lands such as those owned by the Virginia Outdoor Foundation, National Park Service, Department of Conservation and Recreation, and counties
- Threatened and endangered species
- Cultural and historical resources
- Neighborhoods
- Public gathering spaces such as schools, churches and parks



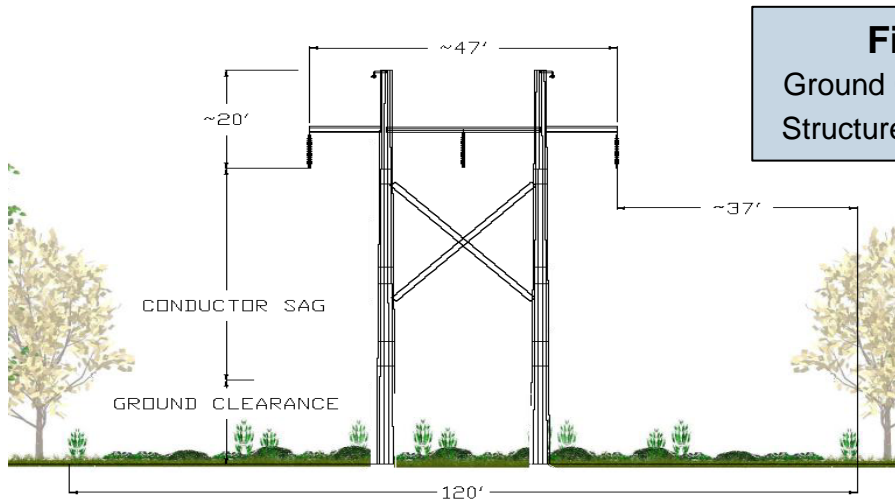
Additional Factors

- Ability to obtain permitting
- Public opinion
- Political dynamics
- Non-governmental organizations' perspectives
- Native American tribes
- Environmental justice

Structure Selection: Horizontal vs. Vertical

Structure selection has a direct correlation to:

- Structure height
- Width of the right of way
- Existing and future development
- Terrain, geology and environmental impacts



Fixed
Ground Clearances
Structure Geometry

