

WELCOME TO



*Working with Virginia's Electric Utilities
on Economic Development Projects*



TODAY'S AGENDA

9:00 – 9:05 am

Welcome/Setting the Stage

9:05 – 9:25 am

Introduction of Electric Utility Partners

9:25 – 9:40 am

Explaining Important Terminology

9:40 – 11:15 am

Discussion: Economic Development Demand for Electric and Site Development Planning

11:15 am

Final Questions from Audience/Announcements/Adjournment

*VEDA/VEDP impactED+
Thursday, August 19, 2021*

TODAY'S SPEAKERS



Felicia Ainsa
Director of Economic Development
Rappahannock Electric Cooperative



Kirk Johnson
Senior Vice President for Member
Engagement
Old Dominion Electric Cooperative



Richard Imel
Manager, Strategic Economic Development
Dominion Energy



Whitney B. Czelusniak
Economic & Business Development Manager
AEP/Appalachian Power

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Thursday, August 19, 2021

TODAY'S FACILITATORS



Stephen Moret
President & CEO
Virginia Economic
Development Partnership



Steve Harrison
Vice President, Business
Intelligence & Communications
Hampton Roads Alliance

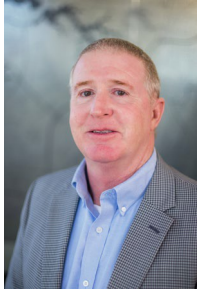


Deborah K. Flippo
Economic Development Program Manager/
Business Development Manager
Draper Aden Associates



John Loftus
Manager, Sites & Buildings
Virginia Economic
Development Partnership

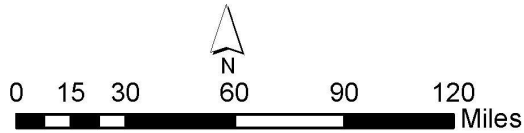
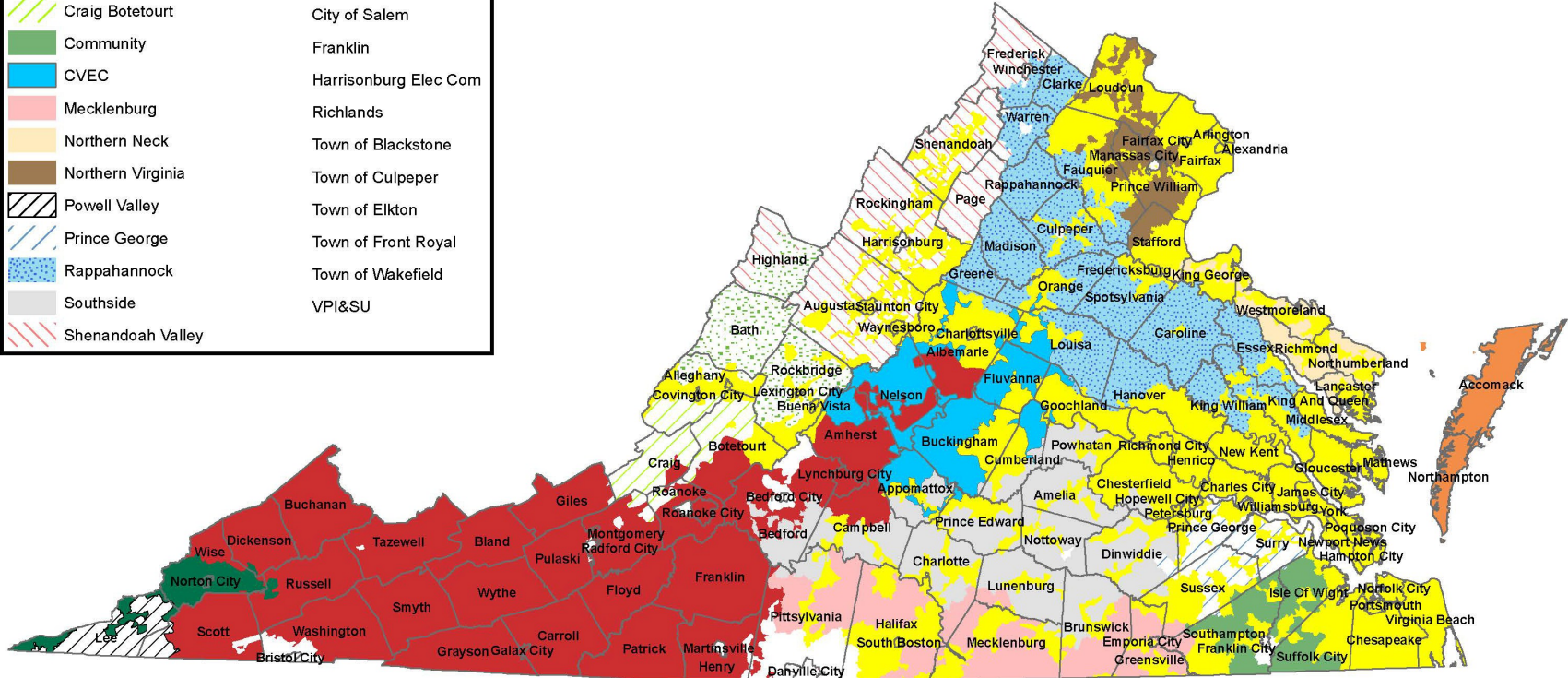
Introduction of Electric Utility Partners



John Loftus
Manager, Sites & Buildings
Virginia Economic
Development Partnership

Electric Service Territories

Electric Utilities	
Investor Owned Utilities	Non-Jurisdictional Utilities
■ APCo	Bristol Power Board
■ Kentucky Utilities	City of Bedford
■ Dominion Energy Virginia	City of Danville
Electric Cooperatives	
■ A&N	City of Manassas
■ BARC	City of Martinsville
■ Craig Botetourt	City of Radford
■ Community	City of Salem
■ CVEC	Franklin
■ Mecklenburg	Harrisonburg Elec Com
■ Northern Neck	Richlands
■ Northern Virginia	Town of Blackstone
■ Powell Valley	Town of Culpeper
■ Prince George	Town of Elkton
■ Rappahannock	Town of Front Royal
■ Southside	Town of Wakefield
■ Shenandoah Valley	VPI&SU



Source: State Corporation Commission, 2020
 Created by: Division of Public Utility Regulation, 2020

Disclaimer: This is an approximation, please contact the Division of Public Utility Regulation for official electric territory maps.

ODEC: Old Dominion Electric Cooperative



Kirk Johnson
Senior Vice President for Member
Engagement
Old Dominion Electric Cooperative

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Introduction to Electric Cooperatives

Organizational Structure

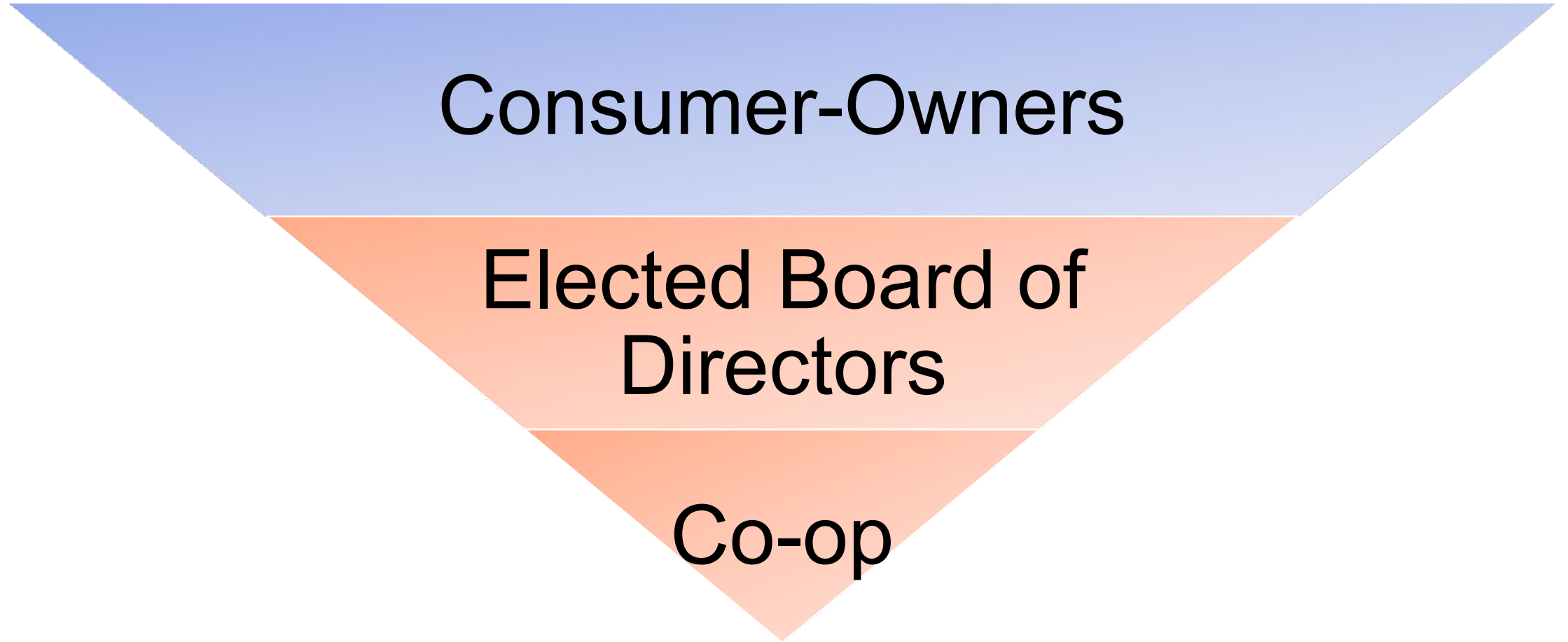
- Private
- Not-for-profit
- Consumer-owned
- 840 Distribution Cooperatives Nationally
 - 13 in Virginia
- 65 Generation and Transmission Cooperatives Nationally
 - 1 in Virginia (and MD/DE)

Seven Cooperative Principles

- Open and Voluntary Membership
- Democratic Member Control
- Member Economic Participation
- Autonomy and Independence
- Education, Training, and Information
- Cooperation Among Cooperatives
- Concern For Community

Co-ops Exist to Power Communities and Empower Members to Improve the Quality of Their Lives

Distribution (Retail) Cooperative Structure



US Electric Cooperatives

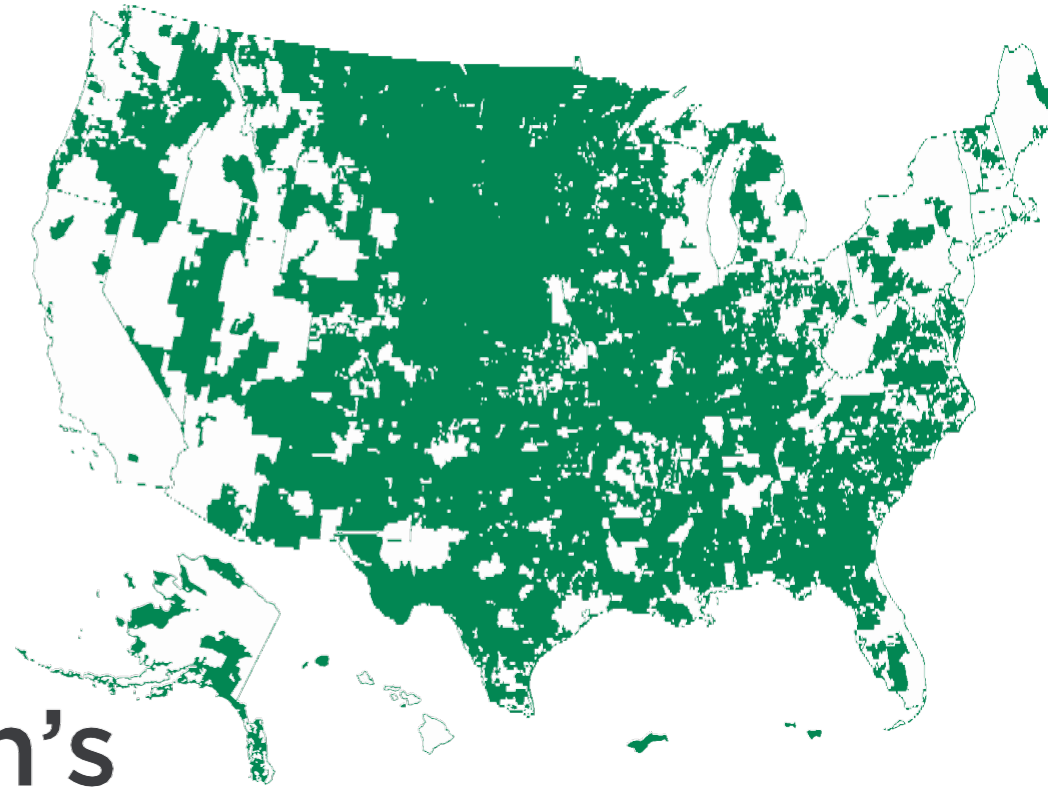
833 distribution
and 62 generation
& transmission
cooperatives

Power

56%

of the nation's
landmass.

Own **\$183
billion** in assets



Sell **13%** of
all U.S. electricity

Power more than

19 million

businesses, homes, schools &
farms

Own and maintain
42%

(2.6 million miles)
of U.S. electric
distribution lines.

Serve **88%**
of U.S. counties

Generate **5%**
of total U.S. electricity

ODEC At A Glance

Our Business
<ul style="list-style-type: none"> • Not-for-profit tax-exempt power supply cooperative • Provide power to 11 distribution cooperatives (Members) in VA, DE, and MD • Service territory = 18,000 square miles (~ 36% of the three-state area) • Own 2,665 MW of primarily natural gas, nuclear, and coal generation • Own 110 miles of transmission • PJM RTO member • FERC regulated • SEC registrant • Non-RUS borrower

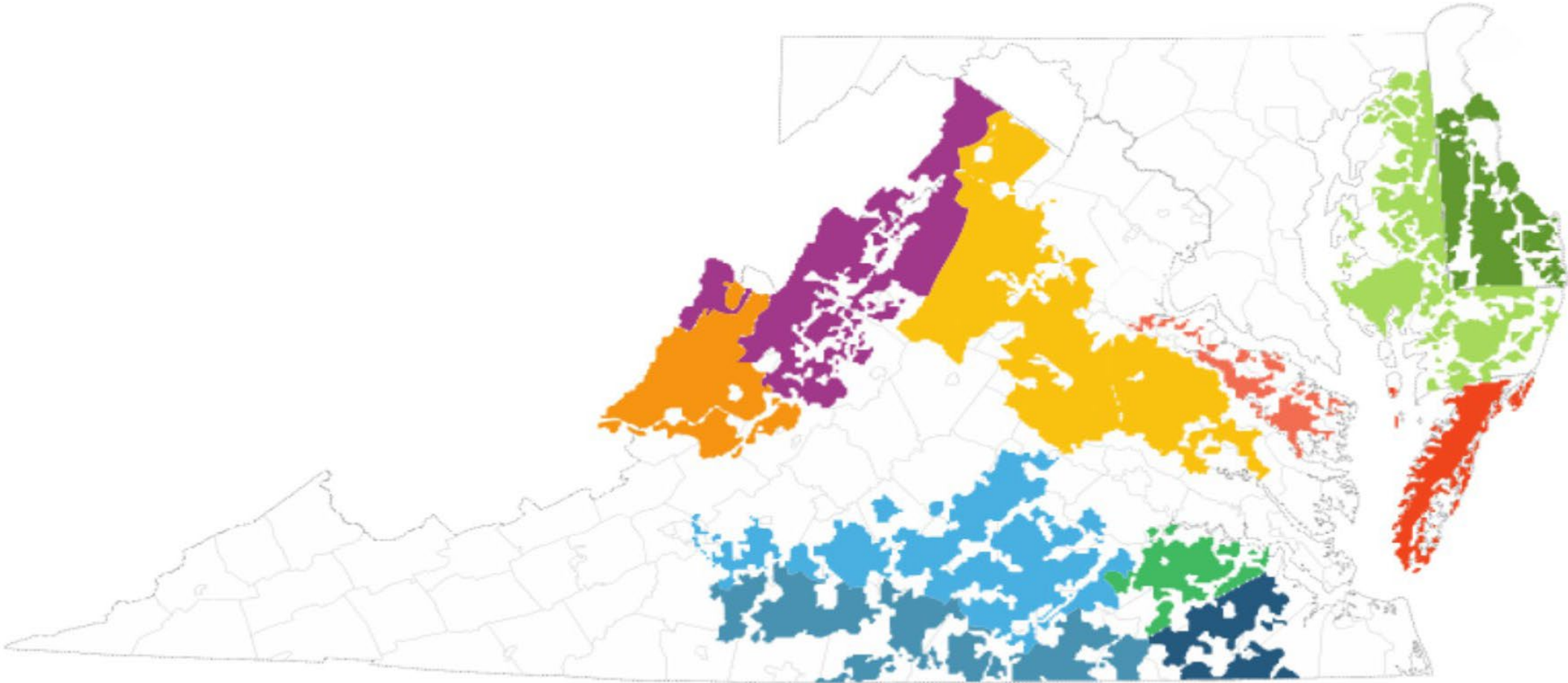
Our Members
<ul style="list-style-type: none"> • Purchase ODEC power under all-requirements, wholesale power contracts through 2053 • Providers of power to approximately 600,000 customers (1.5 million people) • VA Members' distribution rates are state regulated

Our 2020 Results
<ul style="list-style-type: none"> • Continued strong financial performance • Peak demand = 2,563 MW • Energy sales = 12,303 GWh • Revenues = \$807.7 million • Total assets = \$2.1 billion • Equity ratio = 28.8%*

Our Credit Ratings
<ul style="list-style-type: none"> • S&P – A+ (secured and issuer), stable outlook • Moody's – A1 (secured), stable outlook • Fitch – A+ (secured and implied unsecured), stable outlook

* Equity ratio equals patronage capital divided by the sum of our long-term debt, revolving credit facility, long-term debt due within one year, and patronage capital.

ODEC's Retail Distribution Cooperative Members

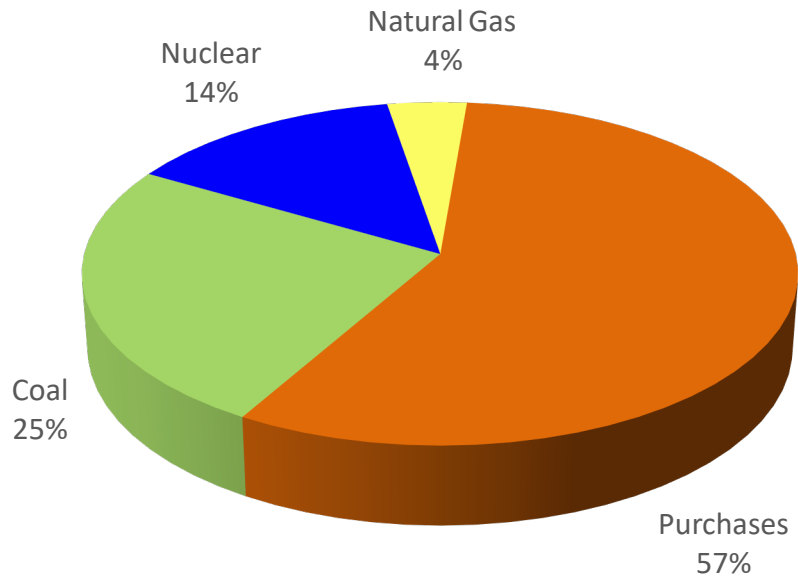


ODEC Major Initiatives

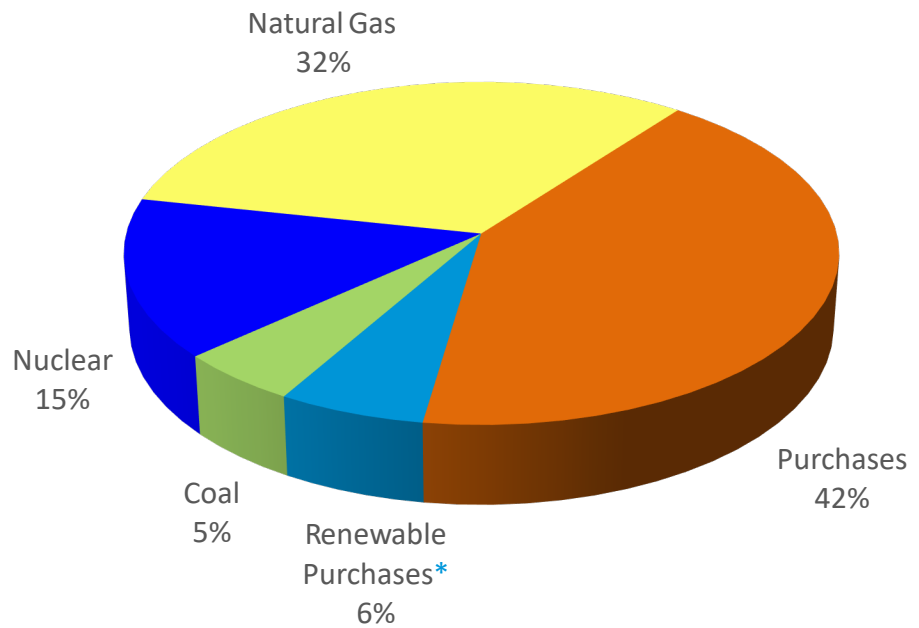
- **Economic Development Wholesale Rates**
- **Utility-Scale Solar**
- **Distributed/Local Solar**
- **Energy Storage**
- **Greenhouse Gas Reduction Goals**
- **Strategic Electrification**

Changing Energy Resource Mix Over Time

2005 Energy Resources

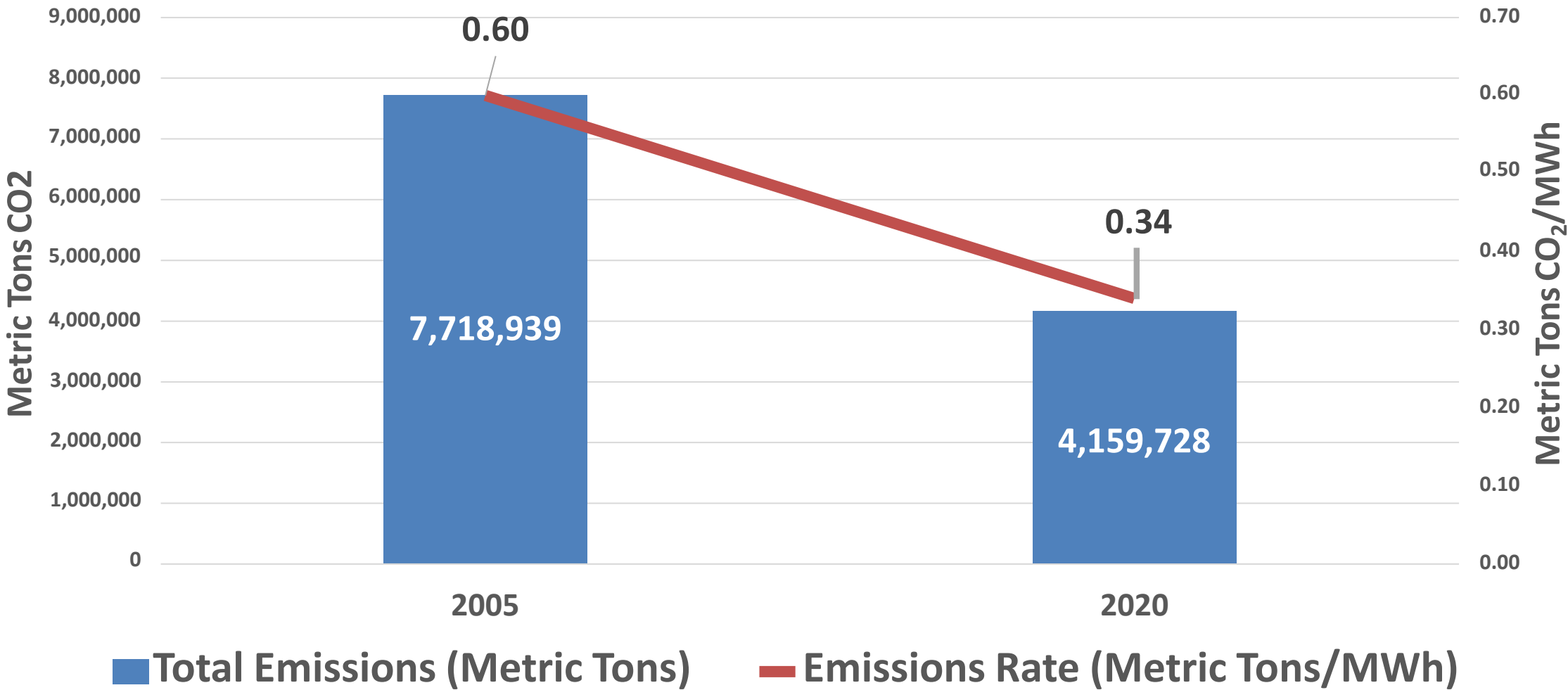


2020 Energy Resources



* ODEC may sell renewable energy credits related to these purchases to ODEC Members and non-members.

ODEC CO₂ Emissions Down 46% Since 2005



ODEC Economic Development Contacts



Stephanie Kane
Director of External and
Government Affairs

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Senior Vice President of
Member Engagement

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REC: Rappahannock Electric Cooperative



Felicia Ainsa
Director of Economic Development
Rappahannock Electric Cooperative

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REC QUICK FACTS

22 Counties

4,000 sq. mi. Territory

170,000 Connections

17,000 Miles of Line

3,664 GWh Delivered Yrly

\$1.2B in Assets

430 Employees

\$70 – 90 M Cap Ex Yrly

CONTACT REC

www.myREC.coop/PowerUp



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Electric Vehicles:
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Solar Farms:
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Broadband:
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AEP/Appalachian Power



Whitney B. Czelusniak
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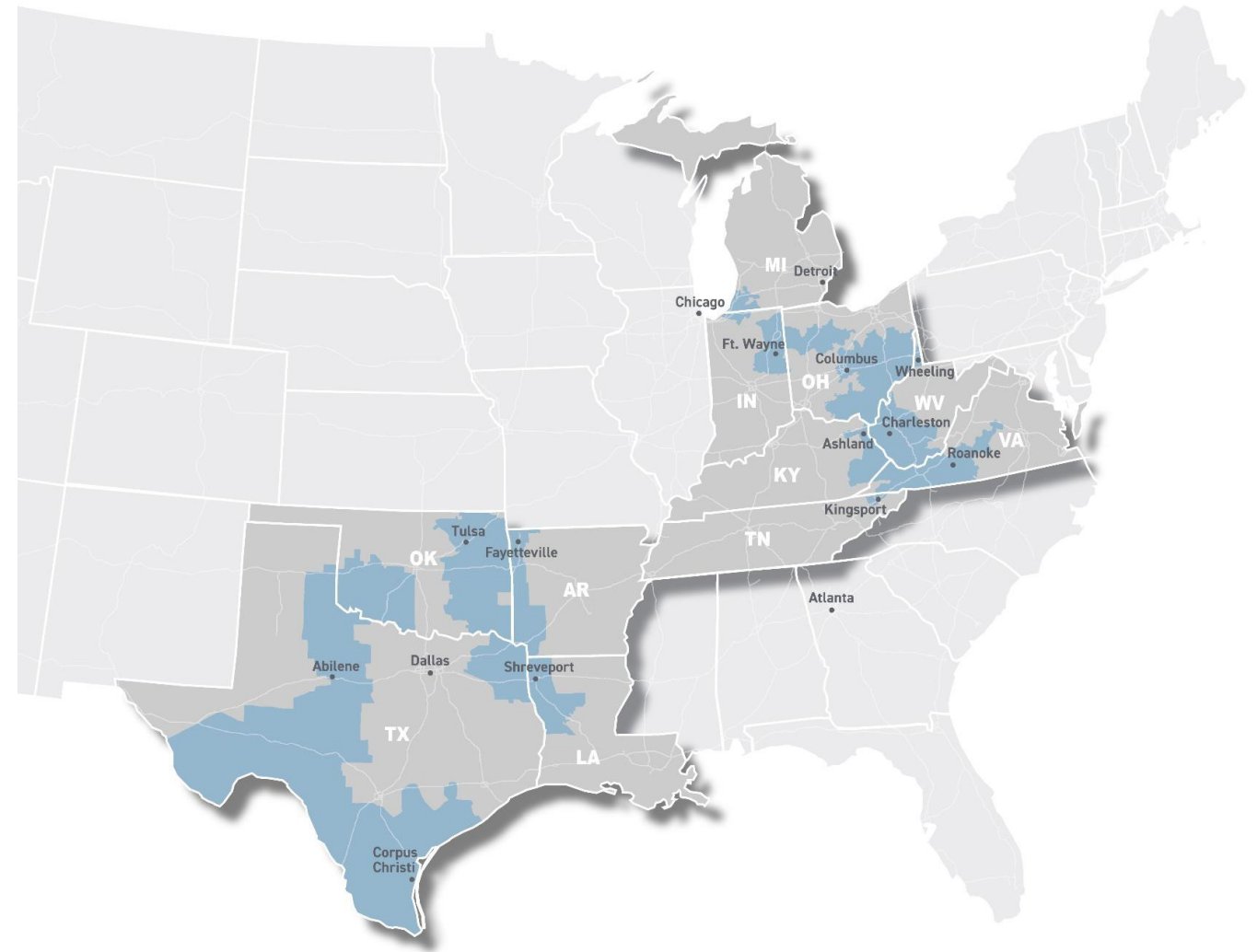
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American Electric Power

- 11 states served
- Owns the nation's largest electricity transmission system
- Operates more than 223,000 miles of distribution
- +16,000 Employees
- HQ: Columbus, OH

Appalachian Power

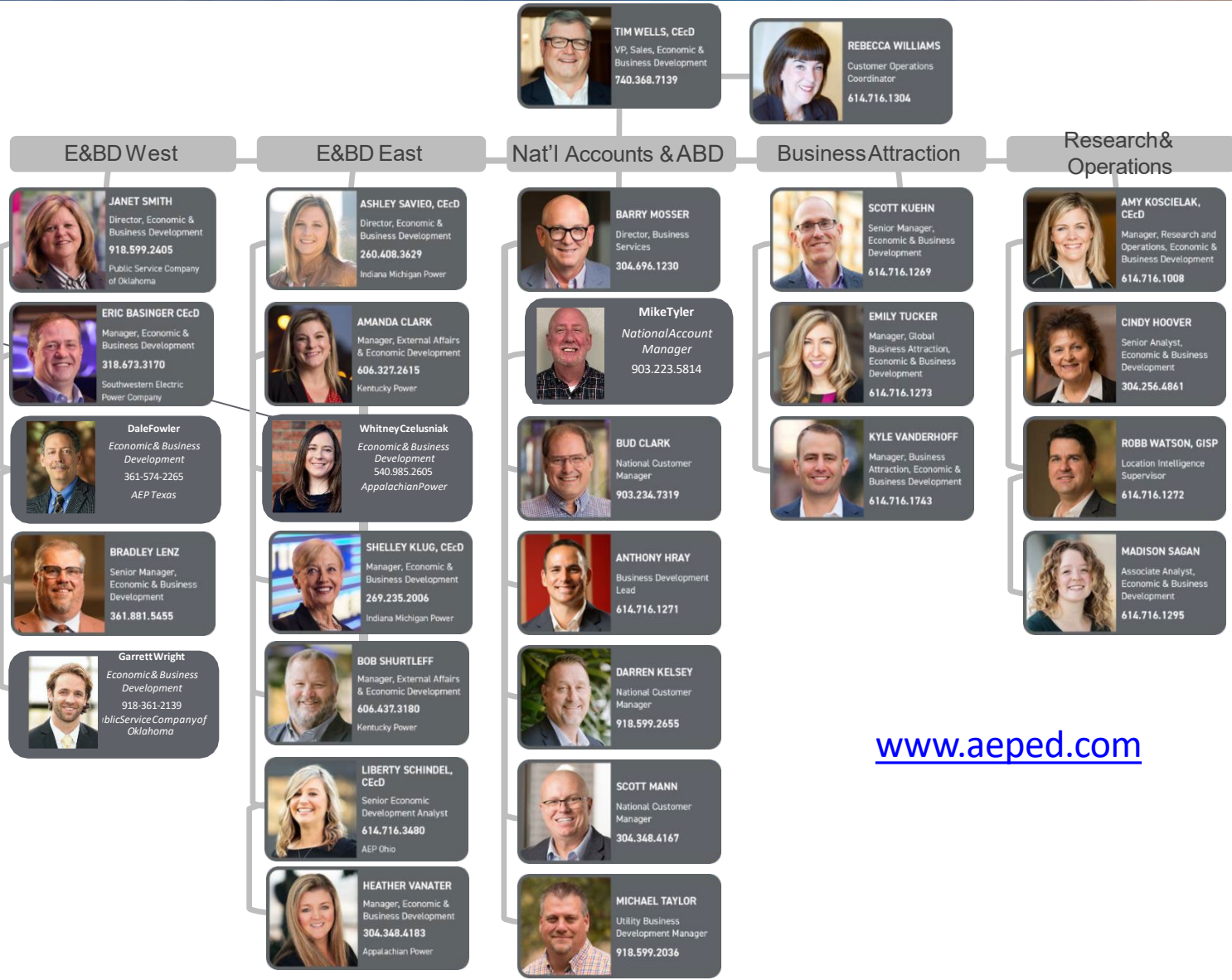
- WV, VA, and Kingsport, TN
- +3,000 Employees
- HQ: Charleston, WV



Meet the Economic & Business Development Central Team

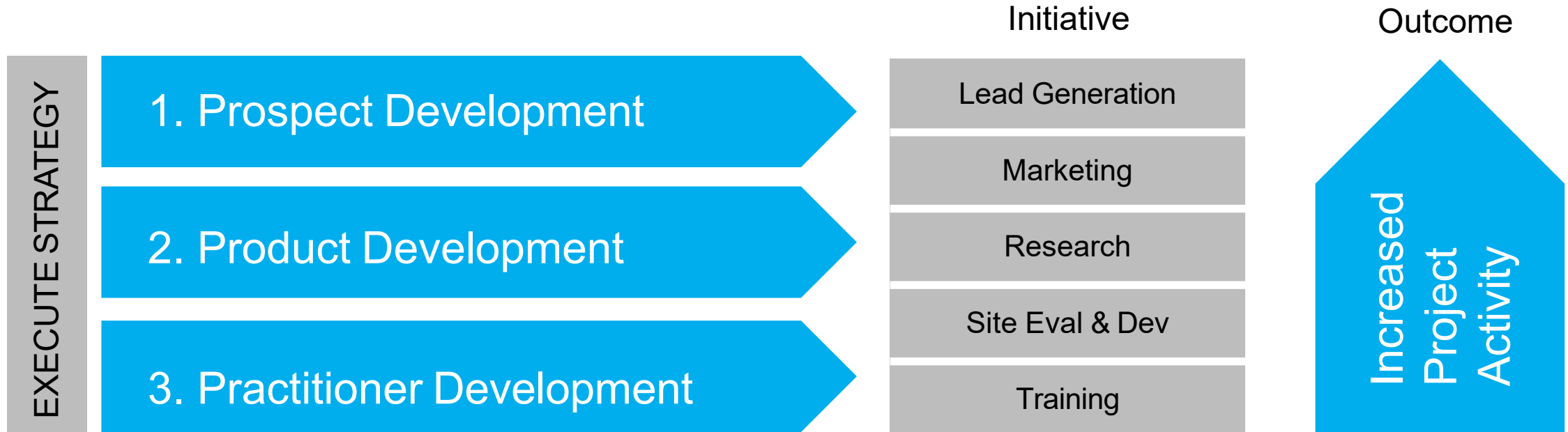



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3 KEY AREAS OF FOCUS



Dominion Energy

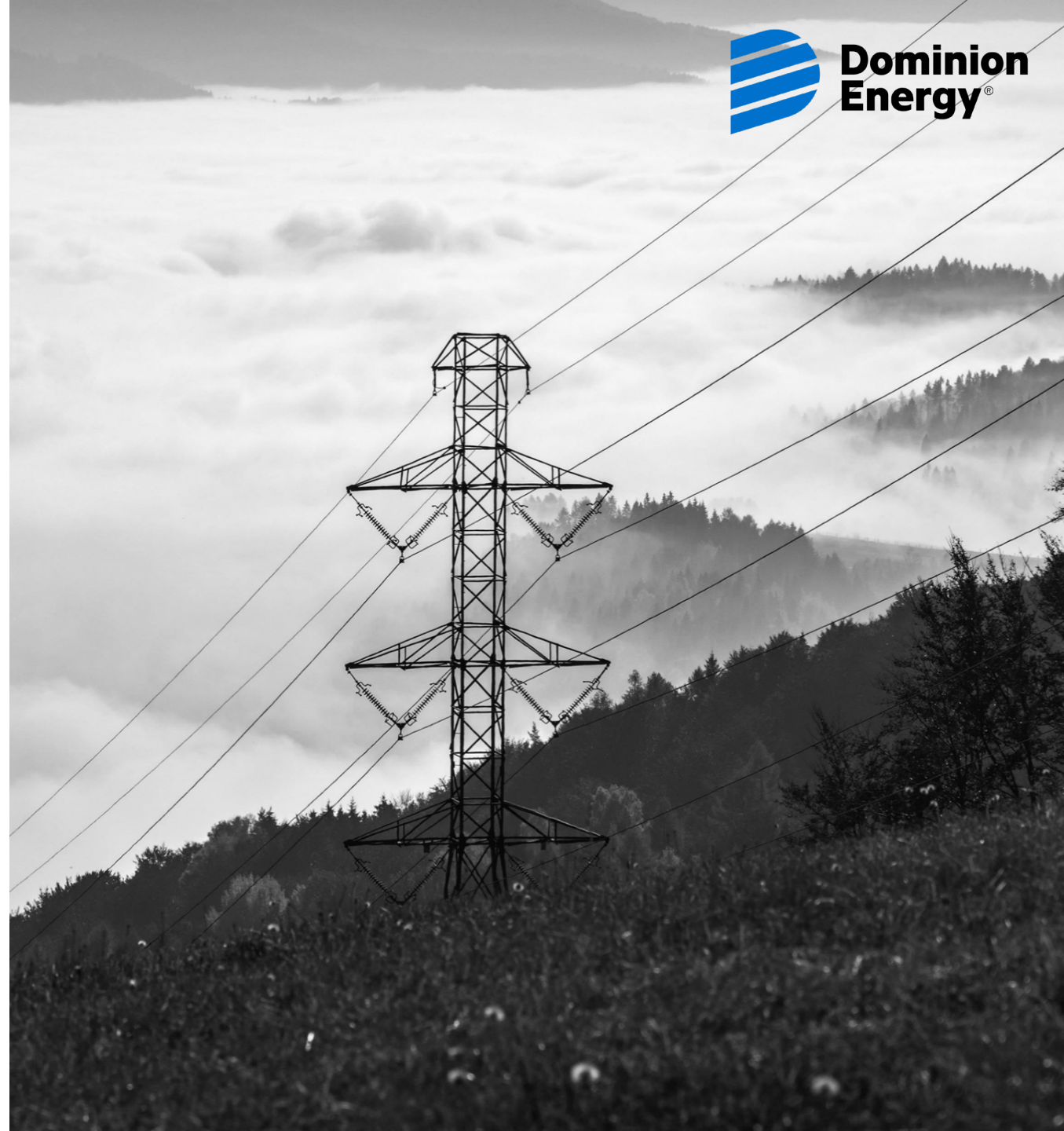


Richard Imel
Manager, Strategic Economic Development
Dominion Energy

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Dominion Energy Virginia

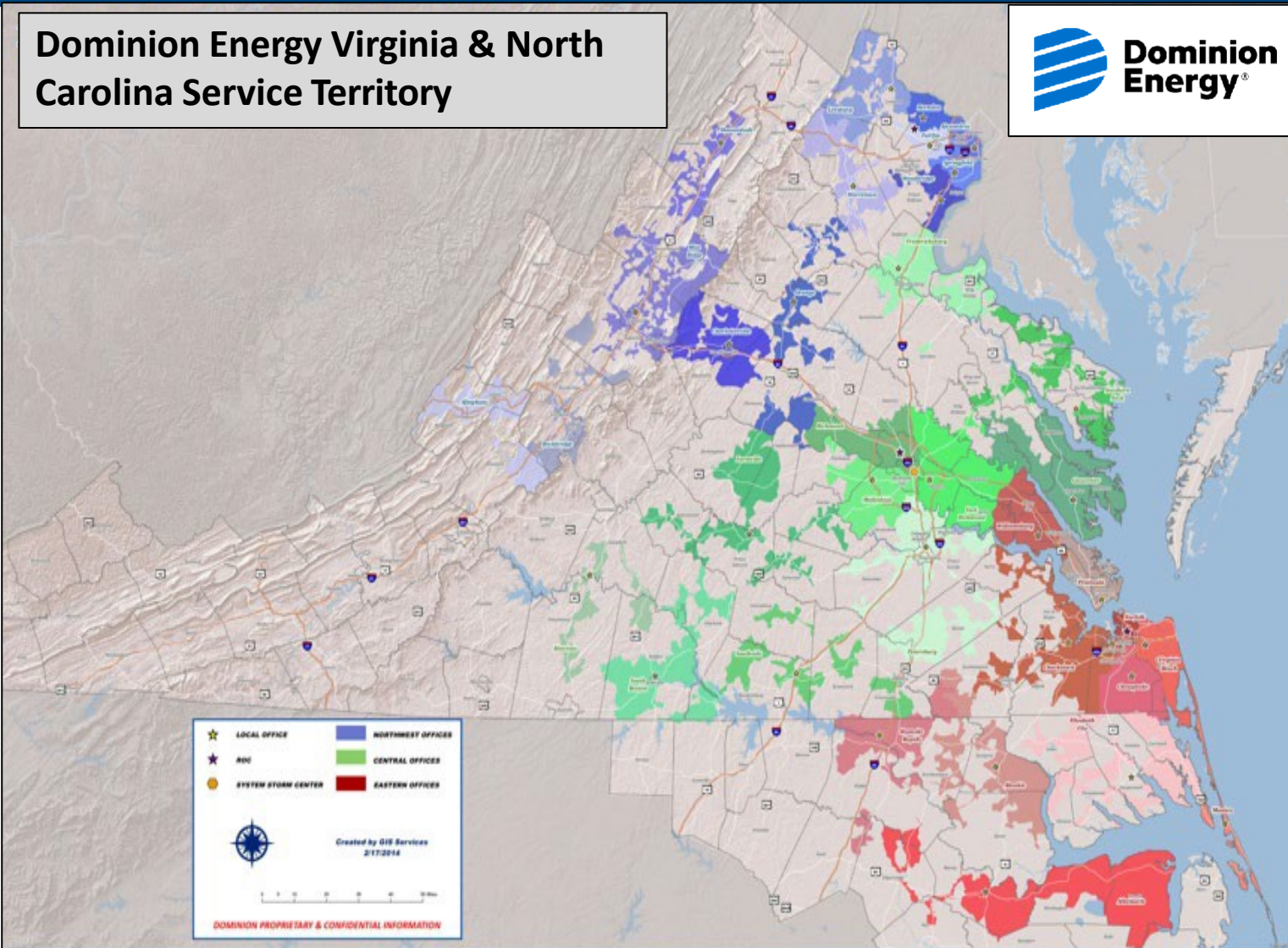
- Electric Transmission
 - 6,700 miles of transmission lines
- Electric Distribution
 - 58,300 miles of distribution lines
 - 2.6 million franchise retail customer accounts in VA & NC
- Utility Generation
 - 19,900 MW of capacity
 - Balanced, diverse fuel-mix



Virginia & North Carolina Service Territory



Dominion Energy Virginia & North Carolina Service Territory



Service Area Locator – Helps to identify sites within our Virginia & North Carolina service territories.

Can be found using link below –
<https://economicdevelopment.dominionenergy.com/va/our-region/service-area-locator/>

Economic Development Team



Felicia Howard -
Vice President
of Economic
Development
Strategy



Richard Imel -
Manager
Strategic
Economic
Development

Bryan Smith -
Economic
Development
Manager -
Eastern VA,
Shenandoah
Valley VA,
North Carolina



Gizelle Siapno -
Economic
Development
Market Specialist -
Central VA,
Northern VA and
Southside VA

Data Center Contacts



Stan Blackwell -
Director of Customer
Service
& Strategic
Partnerships



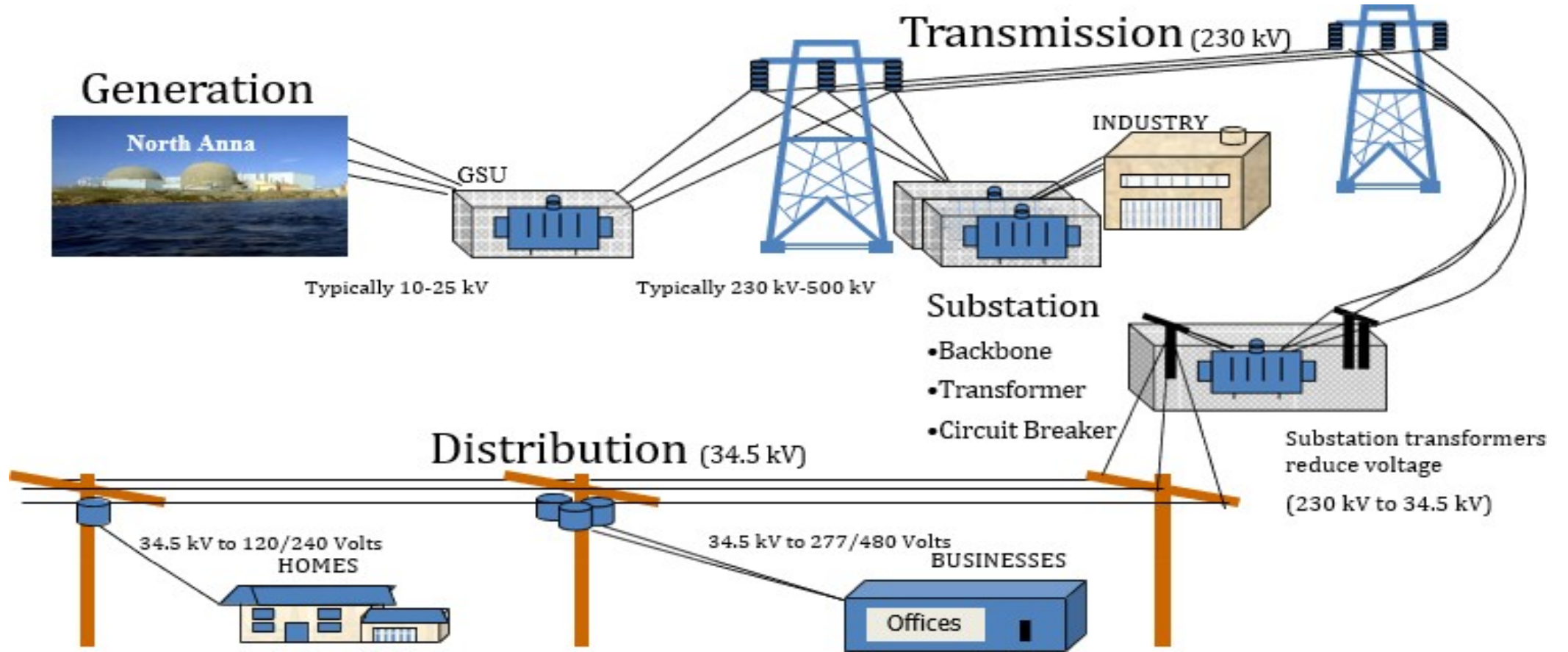
Blair Pritchard -
Sr. Economic
Development
Market Specialist

Explaining Important Terminology



Richard Imel
Manager, Strategic Economic Development
Dominion Energy

Overview of Power Supply



Electricity 101



Unit	Meaning
Kilowatt (kW) Demand	Average rate of energy consumed in a specific period
Peak Demand in kW	Highest 30-minute kW reading during any given month
Kilowatt Hour (kWh) Consumption	Amount consumed per month/year
Megawatt (MW)	1,000 kW = 1 MW
Load Factor (%)	<p>Actual kWh / Potential kWh</p> <p>Actual kWh = Actually read on the meter or a number of actual kWh's provided by the prospect in their RFI</p> <p>Potential kWh = Peak Demand x the number of hours in a billing month</p>

Information Needed



Rate Quote

- Peak demand in kW
- Consumption in kWh (amount consumed per month)
- Load Factor in % (Actual kWh / Potential kWh)

Design Process

- Delivery voltage required
- Approximate hours of daily operation
- Buildout schedule
- Type of operation/industry
- Power quality and reliability requirements
- Load characteristics
- Type of equipment being used
- Power Quality Requirements
- Power Factor
- Number of delivery points
- Date electrical service is required
- Construction power requirements

Discussion: Economic Development Demand for Electric and Site Development Planning



Deborah K. Flippo
**Economic Development Program Manager/
Business Development Manager**
Draper Aden Associates

RFI's

Preferred Format: kW or MW

Need 2 of these 3 variables

- Peak demand in kW (NOT connected load)
- Kilowatt Hour (kWh) consumption
- Load Factor

Secondary Format: MVA

Need all 4 variables

- Amps
- Voltage
- Single or three phase
- POWER factor (NOT load factor)

Info Needed:

- kW and kWh – monthly or annual?
- Exact address or site location, outlines of parcel
- Industry type
- Building size or acreage needs
- Special needs or considerations
- Prospect's questions
- Deadline to get answers back

RFI Examples

TYPE	REQUIREMENT	UNIT OF MEASURE	TIME PERIOD	ADDITIONAL DETAIL
Electric	Power Demand (kVA or kW)	9,000	kW	Given Peak
	Power and Load Factor	0.9 Pf	0.7 Lf	Instantaneous
	Average Daily Consumption (kWh) per 108,000 kWh/day see breakdown below			
	Peak Hours (i.e. 8-12 & 17-21)	36,000	kWh	per 8 hr shift
	Normal Hours (i.e. 12-17 & 21-24)	36,000	kWh	per 8 hr shift
	Off Peak Hours (i.e. 0-8)	36,000	kWh	per 8 hr shift
	Peak Consumption (kWh) per day	151,200	kWh	Daily

We need to submit the information by TOMORROW:

ELECTRIC DEMAND:

Start-up: 630mWh

Full Operation: 1.8M GPD

Please provide Electric information for the following sites noting the startup and full operation requirements:

ELECTRIC POWER. Specific information about capacity, distance of substation power and CapX source for necessary expansion. We estimate a maximum buildout of 2 million sq ft requiring up to 200MW on the 256 ac site.

Electrical Power:

Manufacturer, projected requirement is 28 MW peak load.

In their RFI, the project requested the following information:

- Capacity in megawatts (MW) - proximity to distribution and transmission lines and the current and future capacity of each
- Estimated cost per kWh

Will you see what is available at this site:

1. Is 20MW available today?

2. Is this substation fed from multiple directions?

3. Can we scale up to 100MW or 200MW in 5 years?

Would we simply need to bring an extension cord to your substation?

Do we have this capacity?

65,000,000 kwh/year; 5,416,667 kWh/month; 10,000 kW peak demand

RFI's

Best Practices:

- Confirm the site meets other RFI requirements first
- Share as much of the RFI as you can
- NO assumptions
 - Don't reuse available capacity and site info because it changes.
 - Proximity to a substation or transmission lines isn't always a golden ticket.
- Engage early and often, especially with large or unique projects
- Proactively identify sites and areas of locality targeted for growth so we can plan our infrastructure

Final Questions from Audience

Announcements

Adjournment



Steve Harrison
Vice President, Business
Intelligence & Communications
Hampton Roads Alliance

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