

# VIRGINIA STATEWIDE LONG-TERM ENERGY PLANNING FRAMEWORK

## FORECASTING, MODELING AND POLICY SIMULATION

PRESENTED BY:

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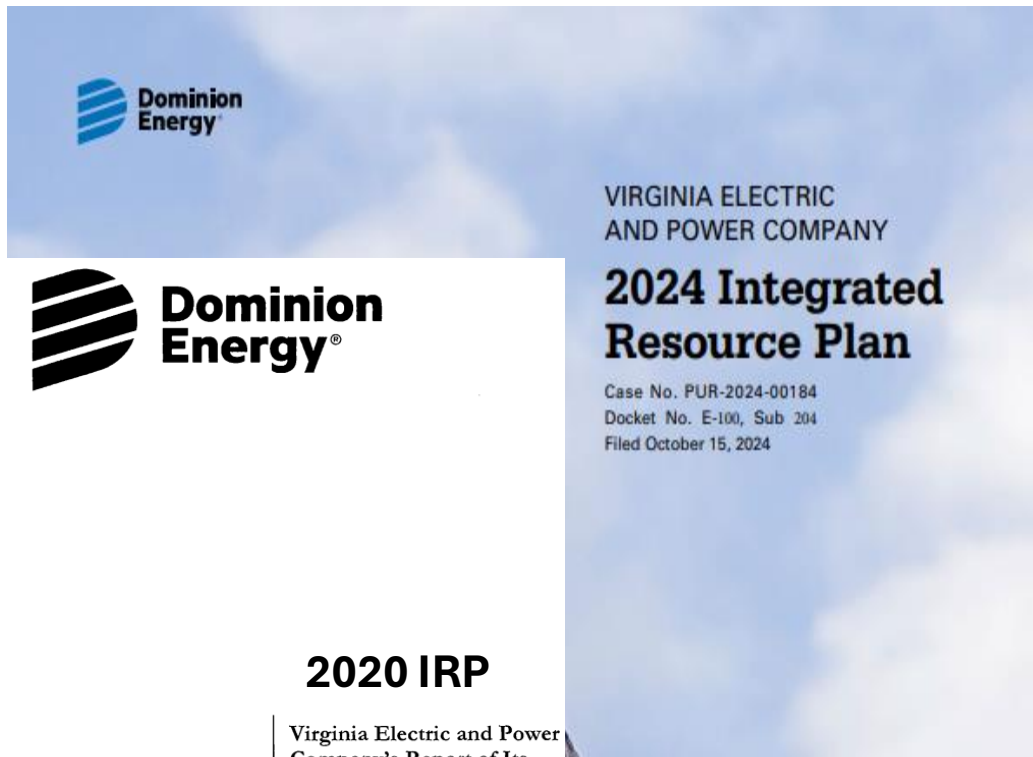
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State long-term energy planning and policy primarily depend on:

## DOM IRPs

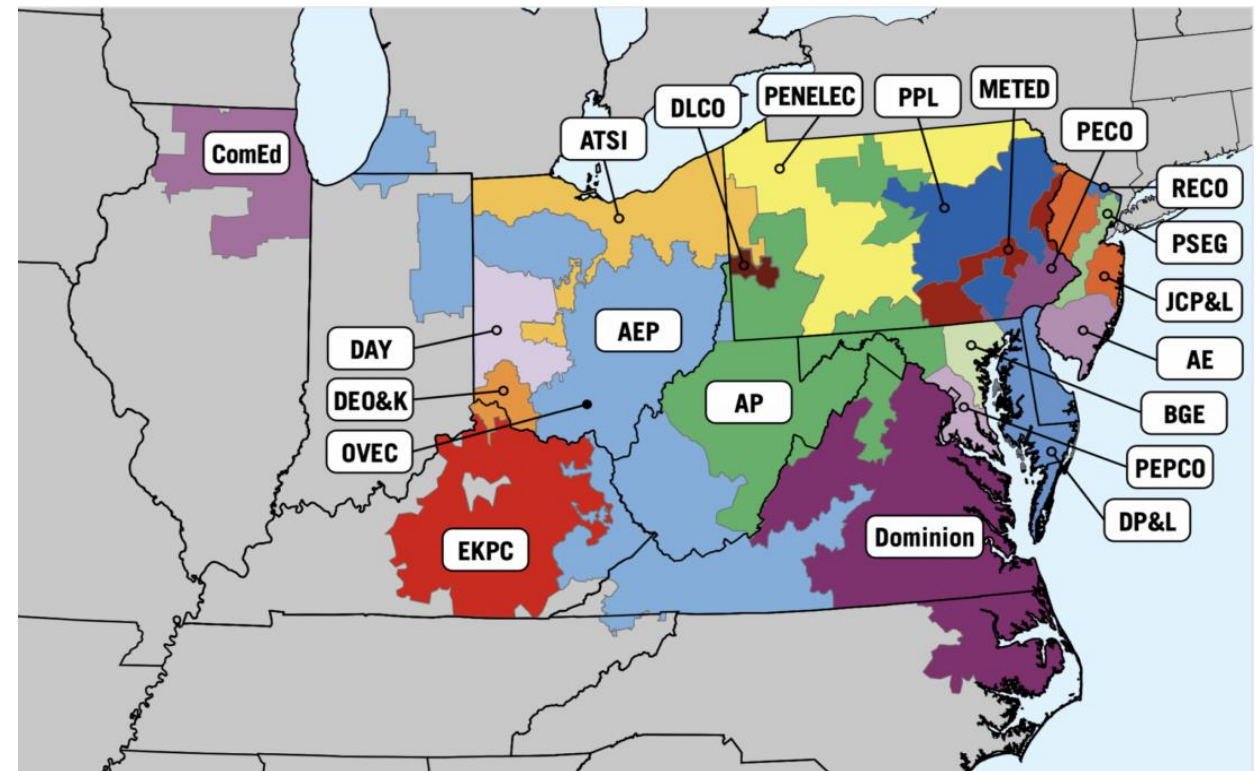


## 2020 IRP

Virginia Electric and Power Company's Report of Its Integrated Resource Plan

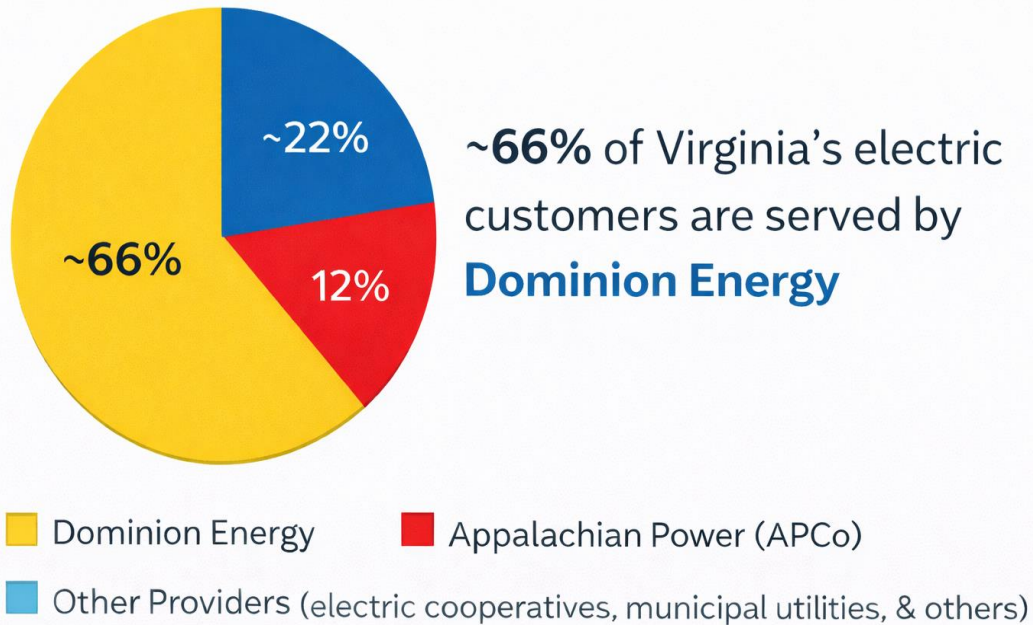
Before the Virginia State Corporation Commission and North Carolina Utilities Commission

## PJM Regional Forecast

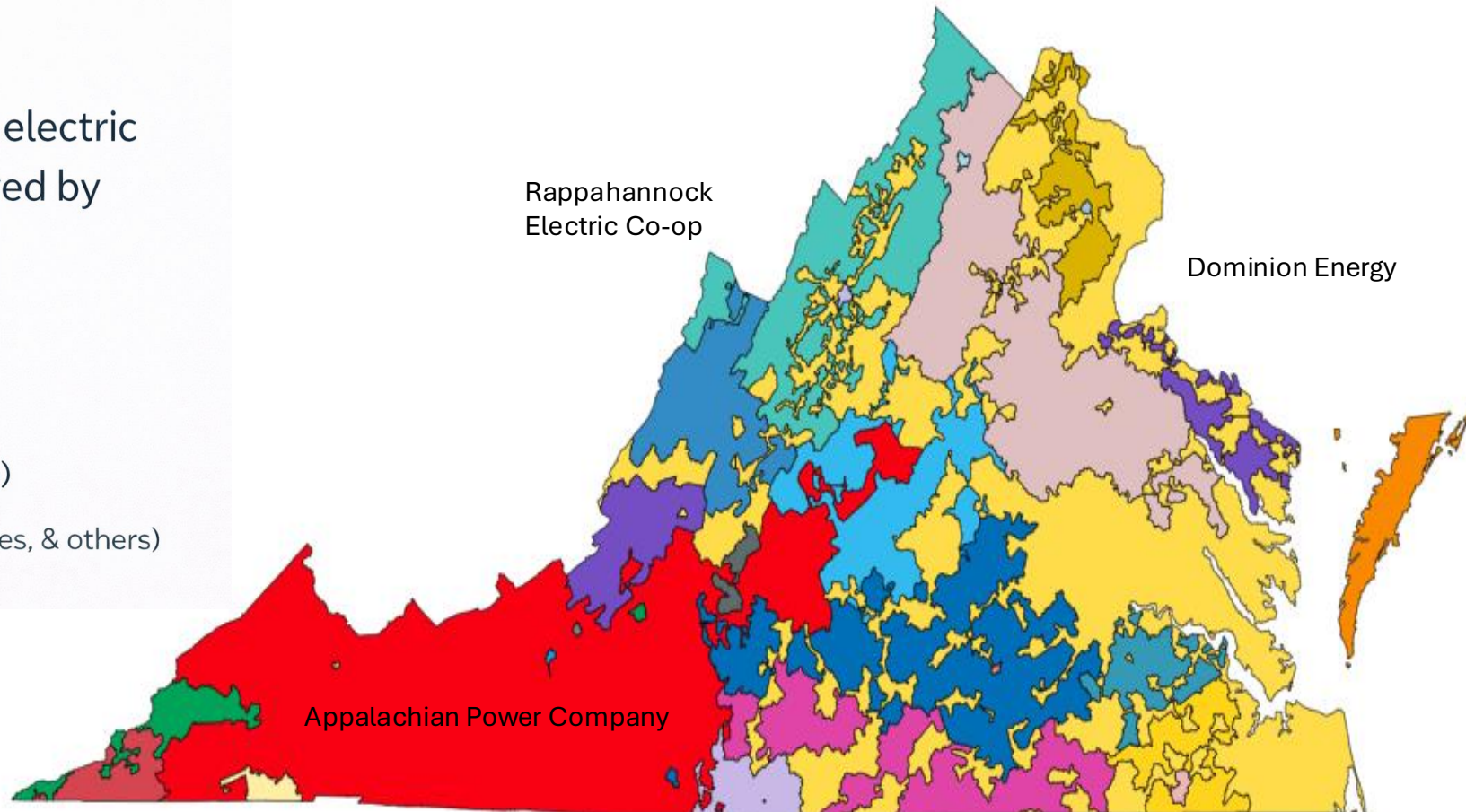


**Confidential**  
**Working Draft – Do Not Share or Cite**

## Share of Electric Service Customers in Virginia



## There are ~ 33 Electric Service Providers in Virginia



**Statewide energy planning requires to integrate IOUs, co-ops, municipals, IPPs, etc., making system-wide analysis inherently complex.**

## Forecasting Part I

### Forecasting (Long-term)

- Load
- EV
- Data centers
- Energy
- Electricity Prices
- Technology cost
- Extreme Events



## Energy Modeling Part II

### Capacity Expansion

- Generation mix
- Build out plan
- System Cost
- Emissions
- Fuel cost

### Resource Adequacy

- Reserve Margin Requirement
- Unserved Energy & LOLE
- ELCC

### Transmission Planning

- Optimal Siting
- Transmission bottlenecks
- Renewable Curtailment
- DA/RT Prices



## Policy Simulator Part III

### Energy Policy Simulator

- Job and GDP impact
- Carbon Pricing
- Investment



## Use Cases

Comprehensive Virginia Energy Plan Analysis

Participate in IRP Review

Simulate policy bills during General Assembly Session

State-wide Annual modeling and Forecasting Report

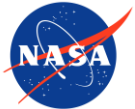
Evaluate Innovative Technologies

## Forecasting

### Part I



VA energy demand, sales, fuel, generator, and emissions datasets used for calibration and statewide trend checks.



Weather, climate, temperature, and renewable-resource inputs for load sensitivities and weather-aware assumptions. **MOU in review.**

### PJM/Utilities/SCC

IRPs, utility filings, large-load information, service-territory assumptions, and company-specific planning inputs. **CEII data**



## Energy Modeling

### Part II



### National Labs

Technology cost trajectories, renewable potential, storage, EV, electrification, and scenario benchmarking. **Technical Assistance with NLR on Transmission Modeling**

### PJM/Utilities/SCC

IRPs, utility filings, large-load information, service-territory assumptions, and company-specific planning inputs. **CEII data**

### Consultants

Peer Review of our work, Suggestions and Feedback



## Policy Simulator

### Part III



**80 Hours of MOU** with Energy Innovation to help Customize Energy Policy Simulator tool

### Vendors



Software setup and Implementation,

# Part I: Forecasting

