

## Electric Sector Modernization Plan: EDC Submission – Draft Proposed Structure

### 1.0 Executive Summary

- 1.1 Vision: Enabling a Just transition to a reliable and resilient clean energy future
- 1.2 Plan overview and alignment with the Clean Energy and Climate Plan
- 1.3 Service territory overview (customers, load, transmission, distribution, generation)
- 1.4 How our customers will experience the clean energy transition
- 1.5 [Demand Assessment and Investment Drivers](#)
- 1.6 [Stakeholder Engagement and Feedback](#)
- 1.7 5-year Electric Sector Modernization Plan Investment Summary [and Outcomes Achieved](#)
- 1.8 [Climate Impacts and Building Resilience](#)
- 1.9 [Workforce and Societal benefits of a Just Transition](#)
- 1.10 [Conclusion and Next Steps](#)

### 2.0 Compliance with the EDC requirements outlined in the 2022 Climate Act

### 3.0 Stakeholder Engagement

- 3.1 Customer outreach
- 3.2 [Municipal outreach](#)
- 3.3 EJC outreach
- 3.4 Stakeholder meetings and information exchange (incl. two technical sessions)
- 3.5 Stakeholder input and tracking – [including explanation of stakeholder input not incorporated](#)
- 3.6 Key takeaways from stakeholder engagement
- 3.7 [Future Stakeholder/Community engagement process \(Forecasting, Solution Alternatives, Community Impacts\)](#)
- 3.8 [Ongoing and new proposed stakeholder working groups](#)

### 4.0 Current State of the Distribution System

- 4.1 State of the Distribution System and Challenges to Address
- 4.2 Planning sub-regions
- 4.3 Sub-region 1
  - 4.3.1 [Maps](#)
  - 4.3.2 Customer demographics
  - 4.3.3 Economic development
  - 4.3.4 Electrification growth
  - 4.3.5 DER adoption ([Battery Storage and PV Solar](#))
  - 4.3.6 [Grid services \(Demand response, Smart inverter Controls, Time-varying rates\)](#)
  - 4.3.7 Capacity deficiency
  - 4.3.8 Aging infrastructure
  - 4.3.9 Reliability and resilience
  - 4.3.10 Siting and permitting
- 4.4 Sub-region N (as above)
- 4.5 Technology platforms that we have in place today

## **5.0 5- and 10-Year Electric Demand Forecast**

- 5.1 5- and 10-year electric demand forecast at the [EDC territory level](#)
- 5.2 Sub-region 1
  - 5.2.1 Aggregate demand – summer and winter
  - 5.2.2 Weather normalized econometric forecast
  - 5.2.3 Large load (step/spot load)
  - 5.2.4 Energy efficiency
  - 5.2.5 [DER Growth: Solar PV, Battery Storage, Grid Services](#)
  - 5.2.6 Electric vehicles
  - 5.2.7 Heat Electrification
- 5.3 Sub-region N (as above)

## **6.0 5- and 10-Year Planning Solutions: Building for the Future**

- 6.1 Summary of existing investment areas and implementation plans (existing asset management and core investments, [including Rate Case, Grid Modernization, Approved CIP Programs, Decarbonization, Heating, Electric Vehicle and Energy Efficiency Programs](#))
- 6.2 Design criteria changes (if applicable)
- 6.3 Technology platforms we are implementing (including AMI [with data access](#), VVO, FLISR, ADMS, DERMs (to optimize 20-year solution set), Automated interconnection tools, etc.
  - 6.3.1 [Description of implementation justification and expected benefits](#)
- 6.4 Planning sub-regions
- 6.5 Sub-region 1
  - 6.5.1 Major substation projects
  - 6.5.2 Non-Wire Alternatives
  - 6.5.3 Alternative cost allocation [approaches](#) to interconnect solar projects – [exploration of different approaches – pros and cons](#)
  - 6.5.4 Alternative cost allocation [approaches](#) to interconnect battery storage projects – [exploration of different approaches – pros and cons](#)
  - 6.5.5 Equity and EJ outreach
- 6.6 Sub-region N
  - 6.6.1 Major substation projects
  - 6.6.2 Non-Wire Alternatives
  - 6.6.3 [Alternative cost allocation approaches to interconnect solar projects – exploration of different approaches – pros and cons](#)
  - 6.6.4 [Alternative cost allocation approaches to interconnect battery storage projects – exploration of different approaches – pros and cons](#)
  - 6.6.5 Equity and EJ outreach
- 6.7 Sub-region N (as above)
- 6.8 [New Clean Energy Customer Solutions](#)

## **7.0 5-year Electric Sector Modernization Plan**

- 7.1 Investment Summary 5-year chart – Base reliability, existing programs (e.g., CIP, EV, EE, GridMod, AMI), and new proposals. Impact on GHG emission reductions

- 7.1.1 Alternatives to proposed investments – [Estimates of Impact of Investment Plan Alternatives](#)
- 7.1.2 Alternative approaches to financing
- 7.1.3 Customer benefits
- 7.2 Investment Summary 10-year chart
- 7.3 [Execution Risks – Siting, Permitting, Supply Chain and Workforce Challenges](#)

## **8.0 2035 - 2050 Policy Drivers: Electric Demand Assessment**

- 8.1 [Review of Assumptions and Comparisons across EDCs](#)
- 8.2 Buildings: Heating electrification and energy efficiency assumptions and forecasts
  - 8.2.1 Technology assumptions
  - 8.2.2 Adoption propensity assumptions
  - 8.2.3 Building code assumptions
  - 8.2.4 Demand response scenarios – impacts on heating demand
- 8.3 Transport: Electric vehicle assumptions and forecasts
  - 8.3.1 Technology assumptions
  - 8.3.2 Adoption propensity assumptions
  - 8.3.3 Mileage, and time of day assumptions
  - 8.3.4 Managed charging scenarios – impacts on EV demand
- 8.4 DER: PV/ESS – State incentive driven assumptions and forecasts
  - 8.4.1 Technology assumptions
  - 8.4.2 Adoption propensity assumptions
  - 8.4.3 Time of day assumptions
- 8.5 Offshore wind forecasts (procurement mandates, GIA status, POIs)
- 8.6 [Currently projected clean energy resource mix](#)

## **9.0 2035 - 2050 solution set – Building a decarbonized future**

- 9.1 [Clean Energy Solutions including](#) Behind the meter incentive design scenarios (impact on electrification demand)
  - 9.1.1 Buildings: Winter demand response scenarios and associated preliminary incentive designs
  - 9.1.2 Transport: Electric vehicle charging demand management scenarios and associated preliminary incentive designs (discussion of both \$/kW incentives to attract participation and ongoing c/kWh incentives to subsidize O&M especially in targeted EJ communities)
  - 9.1.3 Other load management response scenarios and associated preliminary incentive designs
  - 9.1.4 Battery storage charge management and associated preliminary incentive designs
- 9.2 Aggregate substation needs
- 9.3 Non-wires alternatives – impact on substation deferral
- 9.4 Decarbonized gas solutions – geothermal, hydrogen, renewable natural gas (linked to ESMP and heat pump deployment plans)
- 9.5 System optimization – impacts on electrification demand

- 9.6 Alternative cost-allocation and financing scenarios – impact on investments
  - 9.6.1 CIP 2.0 (Solar) projects and cost allocation
  - 9.6.2 CIP 3.0 (battery storage) projects and cost allocation
- 9.7 Enabling the Just Transition through Policy, Technology, and Infrastructure Innovation
  - 9.7.1 Aggregation of all clean technology incentives (in respective scenarios) focused on EJ communities
  - 9.7.2 Discussion of potential to use incentives and dis-incentives to align with distribution upgrades
  - 9.7.3 Potential incentive allocation movement among clean technologies ultimately flowing toward disadvantaged communities

9.8 [New Technology platforms](#)

**10.0 Reliable and Resilient Distribution System**

- 10.1 [Review of the Commonwealth’s Climate Assessment and Hazard Mitigation and Climate Adaptation Plans](#)
- 10.2 Distribution reliability programs
- 10.3 Distribution resiliency hardening programs
- 10.4 Asset Climate Vulnerability Assessment (such as Flood Impacts, Wind Speeds, High Heat Impacts, Ice Accretion, Wildfire and Drought)
- 10.5 [Framework to address Climate Vulnerability risks through Resilience Plans](#)

**11.0 Integrated Gas-Electric Planning**

- 11.1 [Challenges in considering integrated gas-electric planning](#)
- 11.2 Transparent electric sector modernization plan
- 11.3 Coordinated gas-electric planning process
- 11.4 Safe and reliable gas infrastructure
- 11.5 Alternative gas infrastructure
- 11.6 Gas-electric coordinated planning working groups ([goals, objectives, actions and timelines](#))
- 11.7 [Next Steps](#)

**12.0 Workforce, Economic, and Health Benefits**

- 12.1 Overview of key impact areas
- 12.2 [Jobs training](#) and impacts [to disadvantaged communities](#)
- 12.3 Workforce training ([with action plans](#)) – barriers for building the workforce needed to [build and operating the grid of the future](#)
- 12.4 Location economic development impacts
- 12.5 Health Benefits

**13.0 Conclusion**

- 13.1 Next steps
- 13.2 Process to support updates to ESMP throughout the 5-year cycle
- 13.3 Reporting and Metrics [Requirements with common EDC table](#)
- 13.4 Process to report to DPU and Joint Committee on Telecom, Utilities and Energy

**14.0** Appendix

14.1 Supporting materials

14.2 Glossary