MID-COURSE REVIEW: RENEWABLE ENERGY PORTFOLIO STANDARD (RPS)

An Overview of Regional RPS Initiatives, Progress, and Policies

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Mid-Course Review

- The COG 2030 Climate and Energy Action Plan sets ambitious goals for the region, including:
  - 50% reduction in greenhouse gas (GHG) emissions below 2005 levels by 2030.
  - Becoming a Climate Ready Region by 2030 through resilience-building initiatives.
  - Accelerating the transition to clean electricity, zero-emission transportation, and net-zero buildings.
- COG conducting Mid-Course Review to assess progress toward meeting COG 2030 Climate and Energy Goals and will use findings to help inform considerations for establishing new goals and assist with CCAP development
- The Renewable Energy Portfolio Standard (RPS) programs in the District of Columbia, Maryland, and Virginia play a critical role in achieving these objectives, but each jurisdiction's progress and challenges have significant implications for the COG's goals.

ACTIONS FROM 2030 CEAP

- **Climate Action Area** = priority areas to identify performance indicators and survey questions
- **Priority Collaborative Actions** could translate to local government survey questions

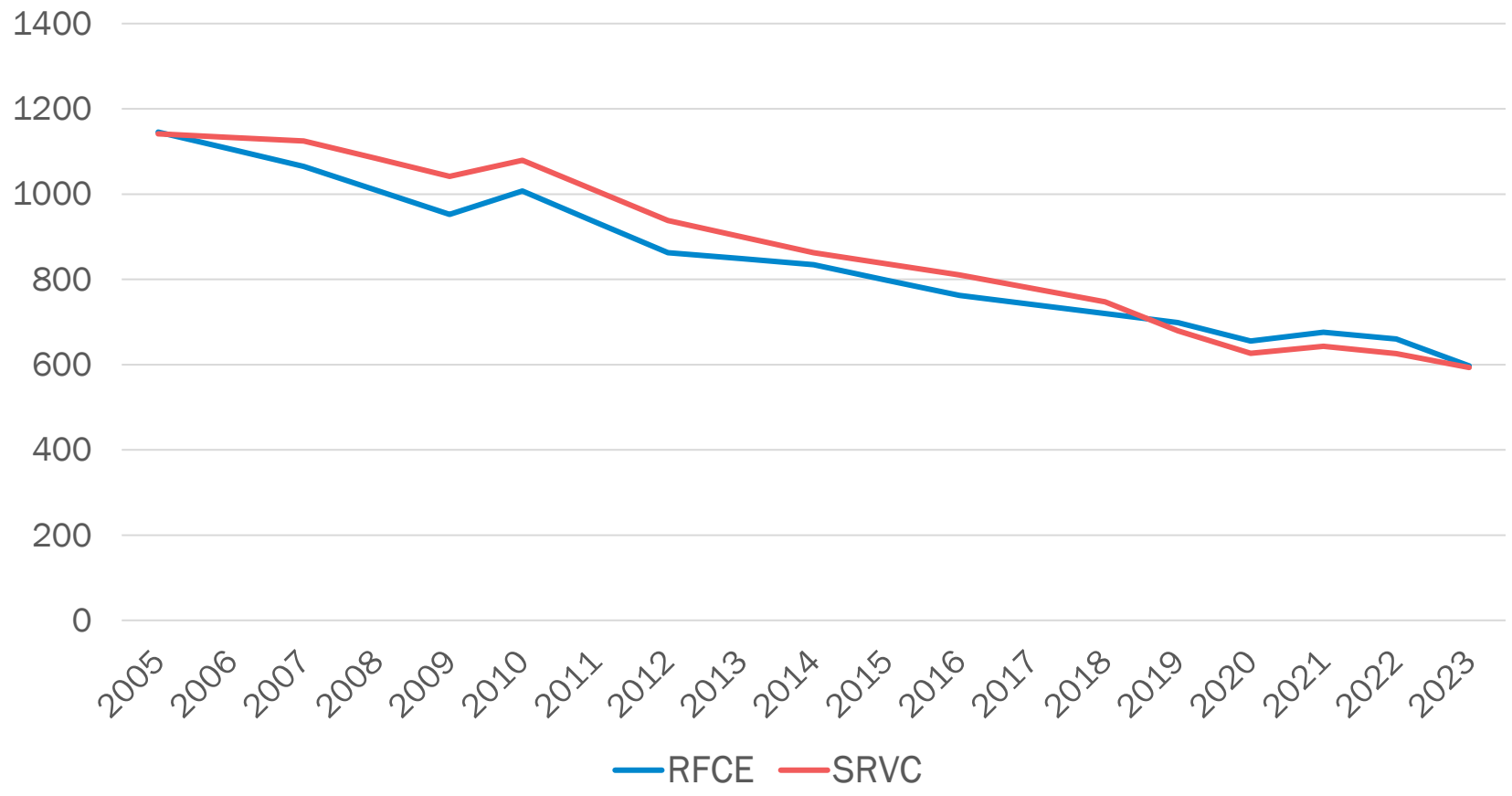
2030 Plan Climate Mitigation Strategy

Climate Action Area	Action ID	Priority Collaborative Action
Planning	PL - 1	Advance Climate Planning and Track Progress
Equity	EQ - 1	Enable Equitable Planning Practices
	EQ - 2	Prioritize Sustainable Energy Access for All
Clean Electricity	CE - 1	Advocate for Aggressive Renewable Portfolio Standards
	CE - 2	Accelerate Development of On-Site Renewables
	CE - 3	Accelerate Deployment of Battery Storage
	CE - 4	Accelerate Development of Microgrids for Critical Infrastructure
	CE - 5	Accelerate Development of Large-Scale Off-Site Renewables
	CE - 6	Advocate for and Implement Community Choice Aggregation
Zero Energy Buildings	ZEB - 1	Expand Building Benchmarking Requirements
	ZEB - 2	Accelerate Deep Building Retrofits
	ZEB - 3	Enhance Green Building Codes and Policies to Facilitate Net Zero Energy Building Development
	ZEB - 4	Expand Proper Disposal and Leak Detection of Refrigerants
Zero Emission Vehicles	ZEV - 1	Expand Light-Duty Electric Vehicle Deployment
	ZEV - 2	Accelerate Electrification of Medium- and Heavy-Duty Vehicles
	ZEV - 3	Build Out Regional Electric Vehicle Charging Network
Mode Shift and Travel Behavior	MSTB - 1	Invest in Infrastructure that Increases Transit, Carpooling, and Non-Motorized Travel
	MSTB - 2	Bring Jobs and Housing Closer Together
	MSTB - 3	Enhance Options for Commuters
Zero Waste	ZW - 1	Implement Curbside Organics Recycling Programs
	ZW - 2	Reduce Solid Waste Generation
	ZW - 3	Build Markets for Circularity
Sequestration	SQ - 1	Strategically Plant New Trees on Publicly Owned Land
	SQ - 2	Enhance Regulatory Capacity to Manage Tree Canopy and Forest Protection
	SQ - 3	Enhance Incentives and Financing Mechanisms for Tree Planting and Preservation on Privately Owned Lands

Renewable Energy Portfolio Standard (RPS)

- The Renewable Energy Portfolio Standard (RPS) is a regulatory mandate requiring electricity suppliers to source a certain percentage of their energy from renewable resources.
- Objectives:
  - Increase renewable energy usage
  - Reduce greenhouse gas emissions
  - Promote clean energy industry growth

eGRID Subregion Annual CO2e Total Output Emission Rate (lb/MWh)



48%

District of Columbia RPS – Goals and Targets

- The District of Columbia has one of the most ambitious RPS goals in the country.
- The CleanEnergy DC Omnibus Act of 2018 set a target of 100% renewable energy by 2032.
- Specific targets include:
  - 5.5% from solar by 2032
  - 100% renewable electricity supply for all by 2032
  - 10% of energy from local solar generation by 2041 (per the Local Solar Expansion Amendment Act of 2022)

District of Columbia RPS – Current Progress

- Solar Energy Expansion:
  - The total solar energy systems certified under the RPS program increased from 15,102 in 2022 to 17,208 in 2023.
  - Total solar capacity in 2023: 268.4 MW, which exceeds the estimated 210.2 MW required to meet the 3% solar requirement for 2023.
  - Community Renewable Energy Facilities (CREFs): Grew to 367 certified facilities in 2023, serving over 9,115 subscribers.

District of Columbia RPS – Challenges

- SREC Market Volatility
  - Prices of Solar Renewable Energy Credits (SRECs) remain high, trading at $440 per credit in 2023, which is the highest among Mid-Atlantic states.
  - Some electricity suppliers failed to retire the required SRECs, leading to compliance payments of $1.8 million in 2023 (a sharp increase from $72,250 in 2022)
- Slow Interconnection of Solar Projects:
  - The Public Service Commission (PSC) has worked to improve interconnection, including introducing Virtual CREFs (VCREFs).
  - The commission also launched a public interconnection queue for developers to track solar project approvals.

Maryland RPS – Goals and Targets

- The Maryland RPS, established in 2004 and expanded through multiple revisions, currently requires:
  - 50% renewable energy by 2030
  - 14.5% of electricity from solar by 2030
  - 0.14% offshore wind energy in 2024; 2.61% in 2026; 13.02% from 2027 onward
  - 0.05% geothermal energy in 2023; 1.00% in 2028 and beyond
- Governor Wes Moore's 2024 Executive Order:
  - Accelerating the transition to 100% clean electricity by 2035.

Maryland RPS – Current Progress

- General Compliance with RPS:
  - The 2022 Maryland RPS compliance report found that suppliers largely met their obligations through renewable energy credits (RECs). However, Maryland is falling behind in meeting its 2030 targets due to supply-side constraints.

Maryland RPS – Challenges

- Delays in Solar Deployment:
  - Maryland lags in utility-scale solar installations due to siting and interconnection issues.
- Offshore Wind Expansion Delays:
  - The state originally approved 2.5% offshore wind carve-outs, but projects are delayed due to economic conditions.
- Electrification Increasing Demand:
  - Maryland's electricity demand is rising due to building electrification and the expansion of data centers. The EmPOWER Maryland program, which previously helped stabilize demand, is now shifting focus towards electrification, leading to net increases in electricity consumption.

Maryland RPS – Recent Policy Initiatives

- Offshore Wind Reforms:
  - More flexible procurement for offshore wind projects.
  - Elimination of interconnection restrictions to encourage multi-jurisdictional development.
- Nuclear Integration Consideration:
  - Exploring advanced nuclear technology as part of Maryland's clean energy mix.
- Solar Market Incentives:
  - Ensuring a stable Alternative Compliance Payment (ACP) to boost solar investments.

Maryland RPS – Overall Progress

- Behind Schedule:
  - Maryland is not on track to meet its 2030 goals, especially in offshore wind and large-scale solar.
- Key Challenges:
  - Slow interconnection approvals for solar.
  - Delays in offshore wind expansion.
  - Rising electricity demand exceeding clean energy deployment.
- Potential Solutions:
  - More aggressive transmission upgrades.
  - Accelerated permitting for clean energy projects.

Virginia RPS – Goals and Targets

- Virginia's mandatory RPS was established in 2020 through the Virginia Clean Economy Act (VCEA):
  - 100% carbon-free electricity by 2045 (Dominion Energy)
  - 100% carbon-free electricity by 2050 (Appalachian Power)
  - Intermediate targets require steady increases in solar, wind, and battery storage

Virginia RPS – Current Progress

- Growth in Solar and Wind Projects:
  - Virginia has approved several new solar and wind projects as part of its 2023 RPS Plan.
  - Six new solar Power Purchase Agreements (PPAs) and one renegotiated PPA were approved for inclusion in Virginia's RPS compliance.
- REC Procurement:
  - Dominion Energy and Appalachian Power are relying heavily on REC purchases to meet RPS obligations, rather than directly building in-state generation.

Virginia RPS – Challenges

- Lack of In-State Renewable Development:
  - Many of Virginia's RPS compliance credits come from out-of-state renewable energy sources.
- Electrification Increasing Demand:
  - Virginia's electricity demand is rising due to building electrification and the expansion of data centers.
- Delays in Offshore Wind Deployment:
  - The Coastal Virginia Offshore Wind (CVOW) project is in progress but facing economic and logistical challenges.
- Over-Reliance on Natural Gas:
  - Modeling scenarios indicate Virginia still relies heavily on natural gas to meet peak demand periods.

Virginia RPS – Recent Policy Initiatives

- New Clean Energy Procurement Rules:
  - Encouraging shorter-term REC contracts to diversify compliance options.
- Mandated Public Reporting:
  - Utilities must disclose assumptions used in their RPS compliance modeling.
- Expanding PPAs:
  - New multi-year PPAs approved for renewable energy purchases.

Virginia RPS – Overall Progress

- Moderate Progress:
  - Virginia is meeting short-term RPS goals, but long-term reliance on out-of-state RECs and natural gas poses a risk.
- Key Challenges:
  - Slow in-state clean energy development.
  - Delayed offshore wind projects.
  - Limited grid storage solutions.
- Potential Solutions:
  - Stronger mandates for in-state renewable projects.
  - Expanded battery storage and demand response programs.

Implications of RPS Programs for Meeting the COG Regional Climate Goals for 2030

- Supply and Interconnection Delays
  - Maryland and Virginia face significant delays in permitting and interconnection for new solar and wind projects.
  - The DC grid struggles with integrating large amounts of distributed solar, which requires infrastructure upgrades.
- REC Dependence
  - Virginia and Maryland rely heavily on RECs (rather than direct renewable generation), meaning much of their "clean energy" is imported from other states.
  - COG's goal of local clean energy generation may be harder to achieve if utilities continue to rely on out-of-state RECs.

Implications of RPS Programs for Meeting the COG Regional Climate Goals for 2030

- Equity and Energy Access
  - COG prioritizes equitable energy access, yet high SREC prices in DC and slow deployment of community solar in Maryland and Virginia limit opportunities for low-income households to benefit from clean energy.
- Offshore Wind Delays
  - Maryland and Virginia's offshore wind targets are essential to meeting regional climate goals, but economic uncertainty and transmission challenges may slow progress.

Policy Adjustments Needed to Align RPS Programs with COG's 2030 Goals

- To fully align the RPS programs with COG's climate and energy objectives, states must:
  - Increase In-State Renewable Development
    - Maryland and Virginia should set stricter mandates for in-state renewable projects, rather than relying on out-of-state RECs.
    - DC should expand incentives for battery storage and grid resilience to handle increased solar penetration.
  - Accelerate Offshore Wind Deployment
    - Maryland and Virginia must streamline permitting and grid interconnection for offshore wind projects.
    - Investments in transmission infrastructure should be prioritized to support offshore wind integration.

Policy Adjustments Needed to Align RPS Programs with COG's 2030 Goals

- Expand Community Solar and Equity Programs
  - Lower barriers to solar adoption for low-income residents in Maryland and Virginia.
  - Expand community solar programs to reduce reliance on expensive SRECs in DC.
- Strengthen Grid Modernization and Energy Storage
  - Faster interconnection approvals and increased battery storage mandates are needed to improve grid resilience.
  - Virginia should expand battery incentives to meet its 2030 storage targets.

Conclusion

- DC is leading the way in aggressive RPS targets, but high SREC costs and grid challenges remain.
- Maryland is behind schedule, and permitting, transmission, and interconnection delays could prevent meeting the 2030 goals.
- Virginia's RPS targets are the least aggressive, and reliance on out-of-state RECs and delayed offshore wind projects pose risks.
- Without stronger policy adjustments, COG’s goal of 50% GHG reduction by 2030 may not be fully met. However, with expanded state-level efforts, the region can achieve a cleaner and more resilient energy system by 2030.

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