

Renewables Opportunities

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VT 2020 CLIMATE ACTION COMMITMENT
UPDATE PROCESS – SPRING 2020



15 member subcommittee:
faculty, staff & students
from CAUS, CLAHS, COE,
COS, VTES, Facilities
(Utilities, Engineering,
Energy)

Renewables Opportunities Subcommittee

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Rob Glenn, Virginia Tech Electric System (VTES), Director

Kim Briele, Facilities, Director, Engineering Assessment

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Heidi Hahn, Student, Environmental Policy & Planning

Paul O'Horo, Student, Electrical & Computer Engineering

Rachel Spector, Student, Environmental Conservation & Society

Carol Davis, Town of Blacksburg

Renewables Opportunities Subcommittee

Purpose:

- Describe evolution of **Virginia Tech Electric System** (VTES) and its relationships with provider APCO/ AEP, Town of Blacksburg, and town customers
- **Review progress** VT has made in “replacement of high-carbon fuels” and reduction of GHG emissions related to electricity, including renewable energy use and plans
- Compare VT electricity and renewables progress to **peer institutions**
- Assess plans for electricity improvement and develop scenarios and pathways for future VT electricity including **100% renewables** scenario
- **Evaluate** energy, GHG, economic, and rate **impacts** of electricity scenarios including 100% renewables



Preliminary Findings: Renewables Opportunities

- **Peer universities** aggressively pursuing 100% renewable including UVA and W&M
- State now requires agencies **30% of their electricity from renewable sources by 2022** and utilities statewide must provide **30% renewable power by 2030 and 100% by 2050.**
- VT can be 30% renewable electricity in 2020 by purchase of **Renewable Energy Certificates** (RECs) from APCO
- VT is constrained by **APCO contract through 2027**, but can work with APCO to achieve mutual benefits.
- VT has a 110-KW solar system on Perry Parking garage and plans for a 330-kW system on Sterrett Building.

Preliminary Findings: Renewables Opportunities

- Additional **solar opportunities** exist on rooftops, vacant campus land, and VT agricultural land.
- There exist many **financing and ownership mechanisms** to develop solar systems or acquire renewable credits.
- The Working Group set the following priorities toward achieving renewables : (1) VT system ownership, (2) VT Foundation ownership, (3) power purchase agreements (PPA) with utility or 3rd party ownership, 4) RECs/VPPA acquiring virtual PPA (VPPA) and renewable energy credits () without power from utility or 3rd party.
- VT renewable energy has **opportunities for academic education and research**

Perry St. Parking Garage: 2011 (110 kW)



Sterrett Rooftop Solar Project Plan: 340 kW



Preliminary Goals and Pathways: Renewables

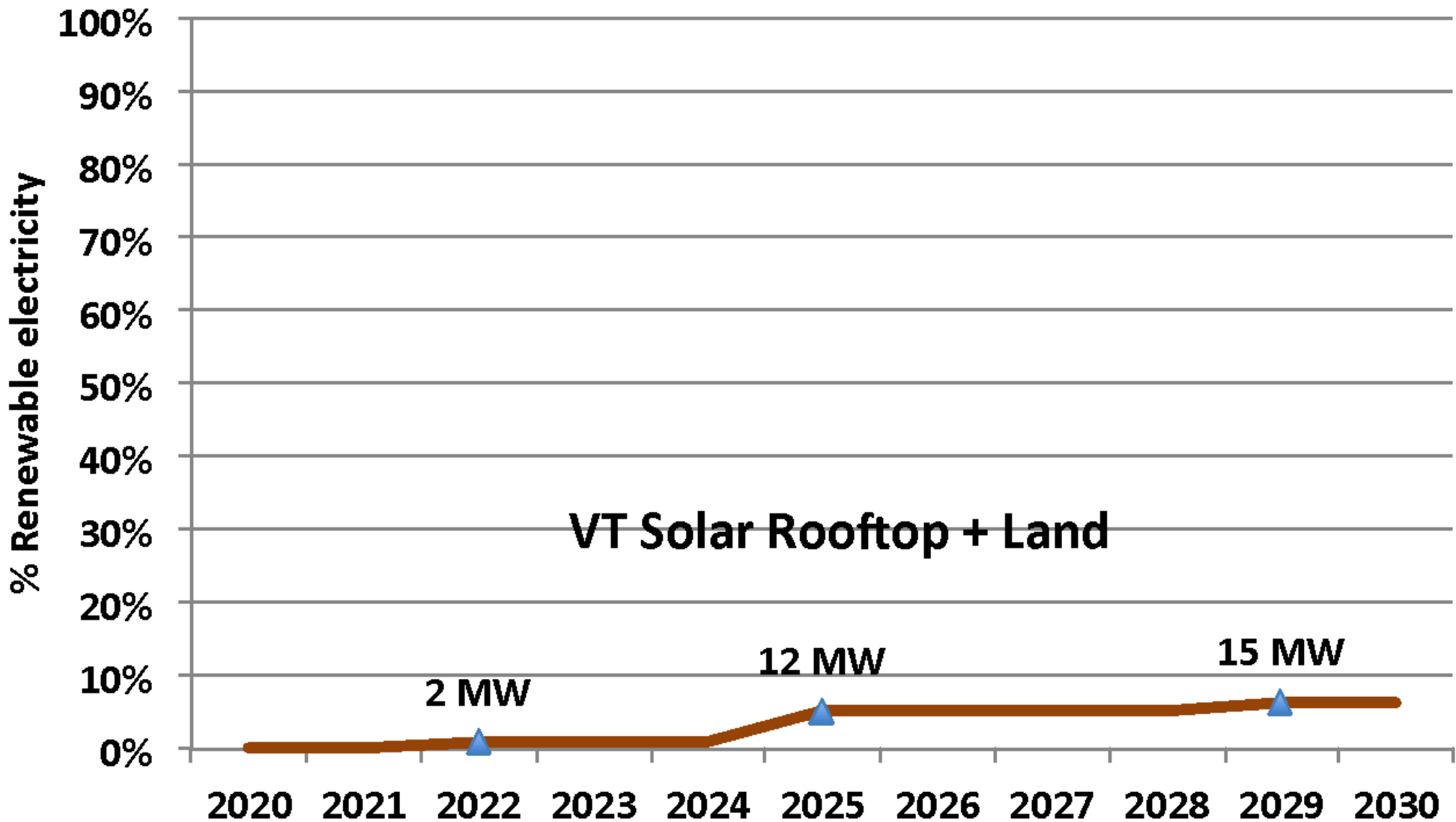
PRELIMINARY GOALS:

- **100% Renewable Electricity by 2030**

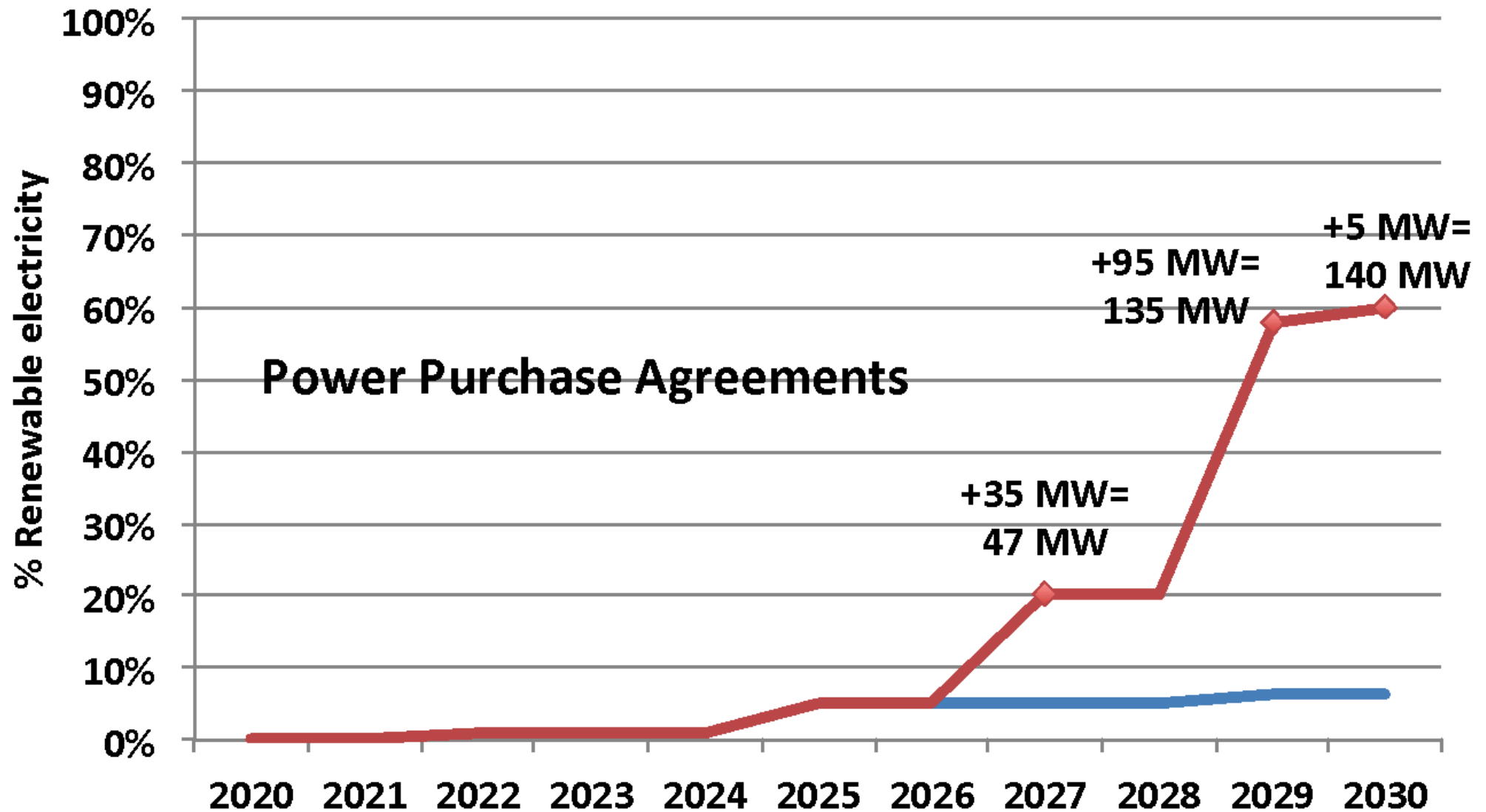
POTENTIAL PATHWAYS TO GOAL:

- In 2020, 30% (20% RECs from APCO + 10% APCo portfolio)
- By 2022, add 2 MW on campus and on VT land (including “signature project”)
- By 2025, add 10 MW campus and on VT land in region including agrivoltaics
- By 2027, 50% renewable electricity via VT capacity (10 MW=5%), PPA SWVA (35 MW=15%), APCo (20%), VPPA (10%)
- By 2027 or earlier, add 10 MW energy storage to campus testbed/showcase for research at VT Power & Energy Center
- By 2029 add 90 MW campus and VT land (+3 MW, total 15 MW) + PPA in SW Virginia (+85 MW, total 120 MW)
- By 2030, 100% renewable electricity with 60% renewable production (VT solar (15 MW), PPA in SWVA (125 MW)), 30% APCo portfolio, and 10% VPPA/RECs

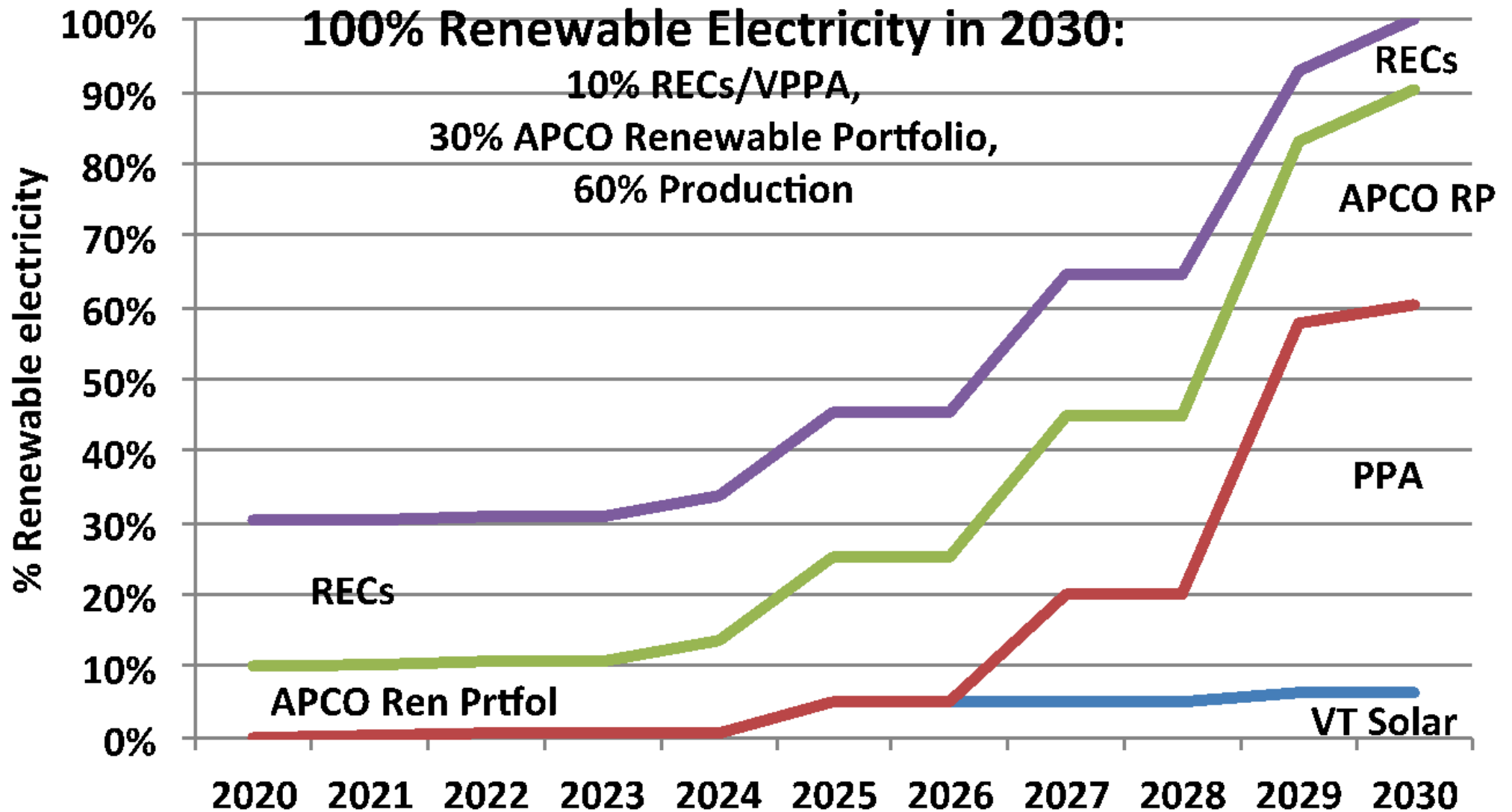
Potential Pathway to 100% Renewable Electricity



Potential Pathway to 100% Renewable Electricity



Potential Pathway to 100% Renewable Electricity



Renewables Opportunities Subcommittee



Bath-Alleghany-Rockbridge Electric Coop Community 550 kW Solar Array



Agrivoltaics: Co-use/Co-benefit Solar and Agriculture



Austin Ange,



Virginia's '100% renewable by 2050' Clean Economy Act clears final hurdle

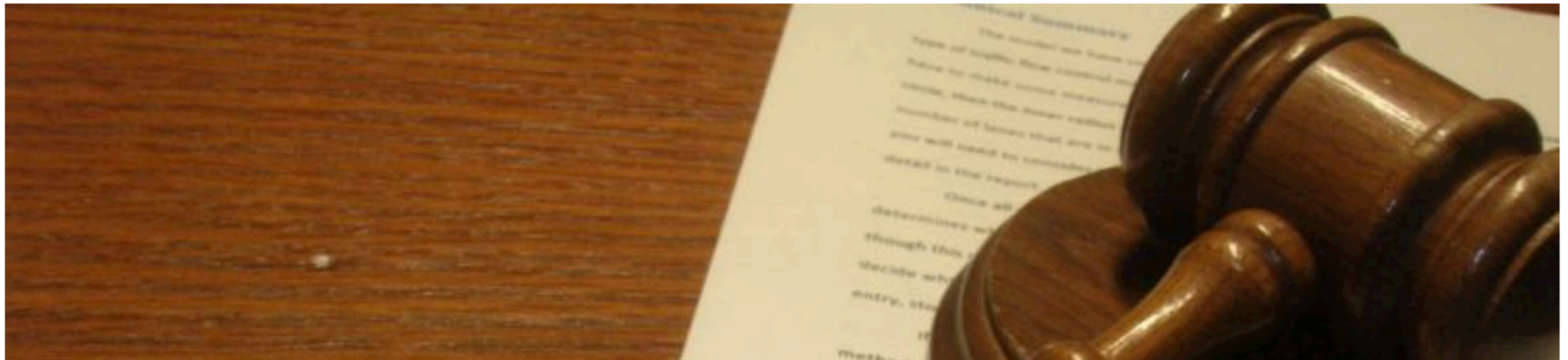
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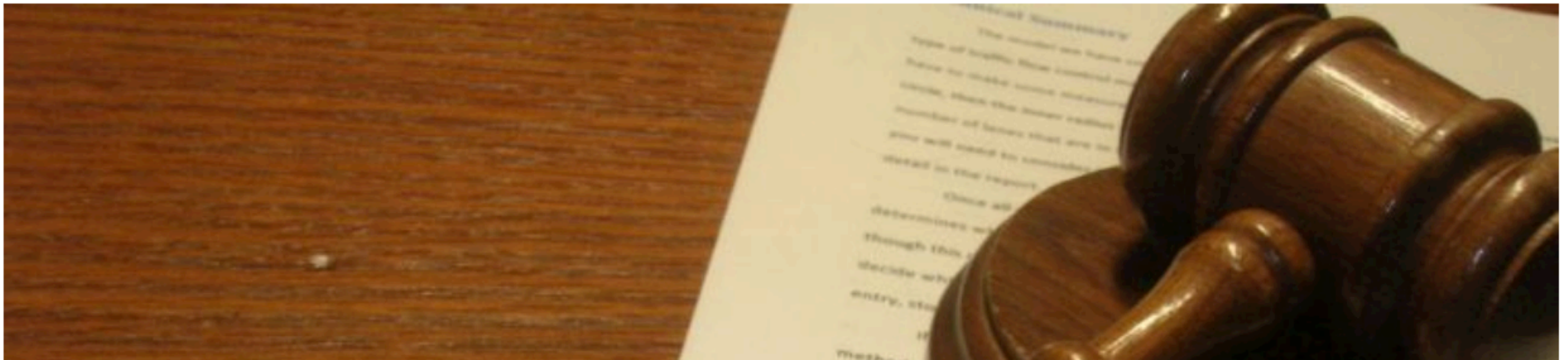
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CLIMATE ACTION COMMITMENT UPDATE

Thank you for your attention. We invite you to engage. Please visit the CAC website (link below) to:

- Watch the other committee videos
- Read the CAC Interim Report
- Complete the climate action survey
- Register for a Zoom forum
- Engage through an online bulletin board
- Contact us

<https://svpoa.vt.edu/index/VTCACRevision.html>