



# Joint Environmental Task Force Energy Recommendations

Susan Hafeli, Deputy Director  
Office of Environmental and Energy Coordination

March 16, 2021

# JET Energy Recommendations

- Recommendation #1: Carbon Neutrality
  - FCG, FCPA, FCPS, and FCRHA should commit to being energy carbon neutral by 2040.
- Recommendation #2: Subgoals to ensure the 2040 goal is achieved
  1. Carbon Emissions: Achieve 50% emissions reductions by 2030, as compared to the 2019 baseline.
  2. Clean Renewable Energy: Produce 25% of the County energy use from in-County renewable energy generation by 2030, and 50% by 2040, using 2019 energy use as the baseline.
  3. Building Energy Performance Standards for Existing Buildings: Decrease total energy usage from all County facilities by 25% by 2030, and 50% by 2040, as compared to the 2019 baseline.
  4. Net Zero Energy Commitment: All new County buildings and major renovation projects *beginning planning and design in 2021* and after must achieve 'Net-Zero Energy' (NZE) performance, unless County staff advises the Board prior to the 30% design phase why a project cannot meet the NZE standard.

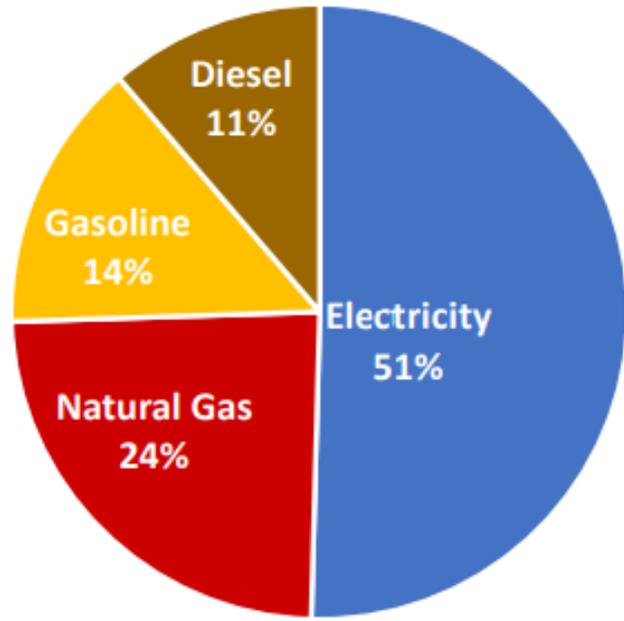
# Successive 5-Year Plans to Achieve a 20-Year Goal

- Recommendation #1 is a challenging goal to address in a single plan – but multiple plans allow for periodic re-assessment and revision.
- A phased approach allows plans to take changes into account, including:
  - Technological development
  - Expanded availability of efficient goods and services
  - Market transformation
  - Legislative action and incentives

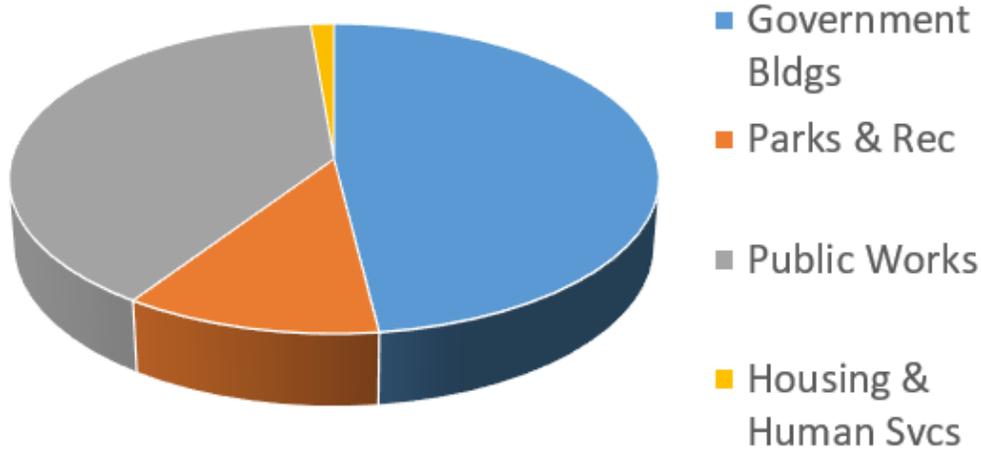
# County Emissions

Buildings and Vehicles are Primary Sources

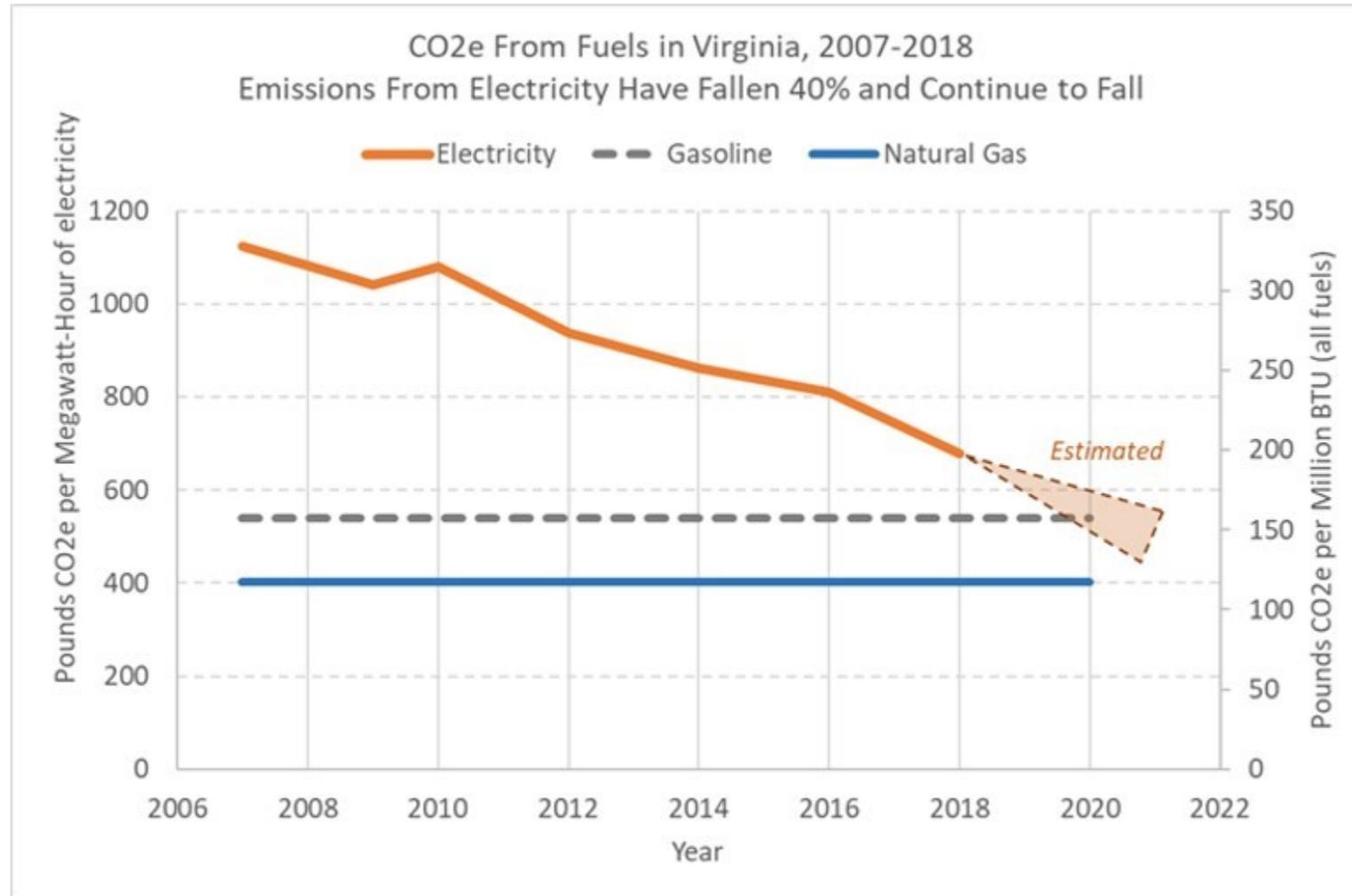
*Emissions from County Operations  
(2018)*



*Electricity Use by Major Service Area  
(2019)*



# A Greener Grid Helps Reduce County Emissions



# Overarching Goal: Carbon Neutrality by 2040

## OEEC'S FIVE REQUIREMENTS

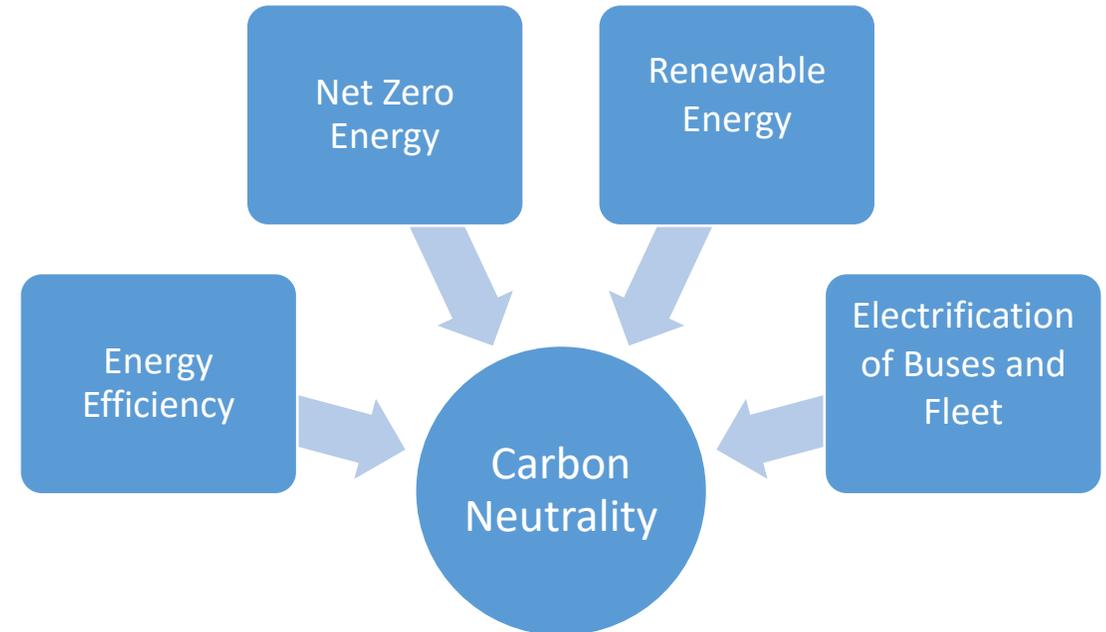
1. **Periodic inventories** of government greenhouse gas emissions.
2. **Stationary Emissions:** Continued support for, and expansion of, the Operational Energy Strategy.
3. **Mobile Emissions:** Electrification of county and school buses and vehicle fleet.
4. The ability to generate electricity from renewable sources **on-site** and to use that self-generated electricity at other government sites.
5. Participation in an **off-site** renewable energy arrangement.



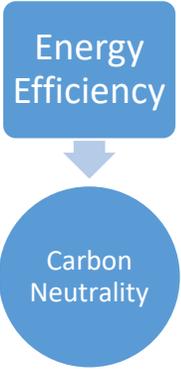
# Initial Steps on a Path Forward – 5 Year Plan

At a minimum, achieving the JET goals:

- Will take **creative solutions** and require continual review of innovative technology in multiple areas.
- Will require **sustained investment** over the next two decades to fund:
  - Deep efficiency retrofits of existing buildings and facilities.
  - Review of transition to NZE for major renovation and new construction.
  - “Beneficial electrification” to replace direct fossil fuel use with electricity.
- Will require revisiting and **revising existing policies, goals and targets**.
  - *Energy Use*: OES goal of 20% reduction in building use by 2029 is less stringent than JET’s total energy reductions of 25% by 2030 and 50% by 2040.
  - *Green Building*: Current policy of NZE for new buildings and major renovations by 2031 is less stringent than JET’s goal of NZE by 2021.



# Energy Use and Efficiency to Support Carbon Neutrality in Existing Buildings



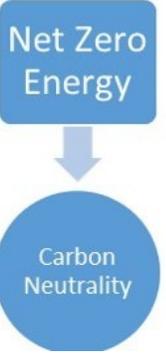
*Existing* – 2018 Operational Energy Strategy designed to support Cool Counties. Achieves average of 12% energy efficiency per project at a cost of \$4.5 Mil per year.

*Proposed* – Revise and redesign Operational Energy Strategy to support Carbon Neutrality. Goal will be to achieve average of 30% energy efficiency per project at a cost of \$6.5 Mil per year.

Initiative	Annual Cost	Target	Annual kWh Savings for a Typical Building	Annual Therm Savings for a Typical Building
2018 OES - Cool Counties	\$4.5 Mil	12% Efficiency	74,748	1,210
Proposed OES - Carbon Neutrality	\$6.5 Mil	30% Efficiency	186,869	3,024

# NZE Commitment in Building Construction

## Sustainable Development Policy for Capital Facilities



Year(s)	Design and Planning	Minimum Energy Performance		
		<u>Existing</u>	<u>Proposed</u>	<u>JET Recomm.</u>
FY 2021	New	30%	30%	NZE
	Renovation	25%	25%	NZE
FY 2024	New	40%	50%	--
	Renovation	35%	45%	--
FY 2027	New	50%	NZE	--
	Renovation	45%	NZE	--
FY 2031	New	NZE	--	--
	Renovation	NZE	--	--

# Renewable Energy Opportunities

- On-site renewable energy generation
- Off-site arrangements
- Legislative proposals to remove barriers to onsite renewable energy



Renewable  
Energy



Carbon  
Neutrality

# Electric Vehicle Initiative

- EV infrastructure:
  - At up to 20 County facilities for County vehicle and public charging
  - in County parking garages for County vehicle charging
- Transition to 100% electric for County vehicles and buses



Electrification  
of Buses and  
Fleet



Carbon  
Neutrality

# A Recommended Path Forward to Support Carbon Neutral Goal: Recap on 5-Year Plan

- Update OES energy use and efficiency target to support carbon neutrality.
  - At least \$6.5M/year for ESCO work as well as dedicated staff resources to reduce energy use 30% in existing buildings.
- Accelerate timelines for the Sustainable Development policy.
  - Move FY 2027 goal to FY 2024 and achieve NZE by FY 2027, not FY 2031.
- Stay the course on deployment of EV infrastructure and fleet.
- Stay the course on on-site renewable energy generation and exploration of off-site arrangements.
- Explore legislative proposals to remove barriers to on-site renewable energy deployment.

# Questions?

Susan Hafeli, Deputy Director  
Office of Environmental and Energy Coordination

[Susan.Hafeli@fairfaxcounty.gov](mailto:Susan.Hafeli@fairfaxcounty.gov)

571-292-4495