



# County of Fairfax, Virginia

## MEMORANDUM

**DATE:** June 9, 2021

**TO:** Board of Supervisors

**FROM:** Bryan J. Hill  
County Executive *J Hill*

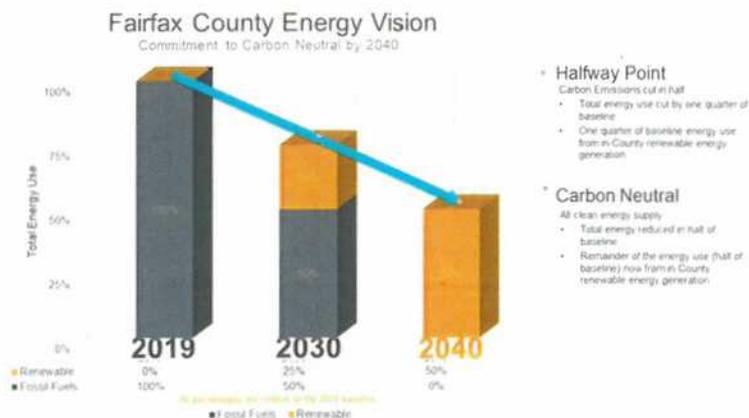
**SUBJECT:** Update to Operational Energy Strategy to Incorporate JET Energy Goals

A May 4, 2021, Board Matter, jointly sponsored by Chairman McKay and Supervisors Gross and Storck, directed the Office of Environmental and Energy Coordination (OEEC) to develop a carbon neutrality declaration and supporting energy and climate policy statements for discussion at the June 15 Environmental Committee meeting. The purpose of this memorandum is to supplement those materials with a proposed update to the Operational Energy Strategy, as discussed herein.

### Background

In October 2020, the Joint Environmental Task Force (JET) released its [Final Report](#) setting climate change and environmental sustainability goals for county government and school operations. The JET recommended an overarching goal of energy carbon neutrality by 2040 and sub-goals and recommendations in the areas of building energy efficiency, renewable energy, waste, and transportation. The report also included goals regarding workforce development to be implemented in tandem with these energy and emissions reduction goals.

The energy and emissions-reduction goals are intended to reduce greenhouse gas (GHG) emissions from county operations as swiftly as possible and thereby mitigate the effects of climate change. The goals and their effect on energy use are illustrated in the graphic below:



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The JET recommendations were the subject of an October 2020 Board Matter, a [March 2021 NIP](#), presentations before the Board's Environmental Committee in [March](#) and [April 2021](#), and a May 4, 2021 Board Matter jointly sponsored by Environmental Committee Chair Storck, Chairman McKay, and Supervisor Gross. The May 4 Board Matter directed OEEC to develop two documents for discussion at the June 15 Environmental Committee meeting: (1) policy statements that support the JET recommendations, as modified by the Board, across the focus areas of energy, transportation, waste management and recycling, and workforce development; and (2) a declaration, similar to the Cool Counties Declaration, tied to the JET's carbon neutrality recommendation to express the County's leadership and encourage others to make similar public commitments.

Implementation of the policy statements and declaration described in the May 4, 2021, Board Matter require supporting strategies and actions. Consequently, OEEC proposes a substantial revision to the Operational Energy Strategy (OES), which was originally adopted in 2018. The revision updates many of the OES targets to incorporate the JET recommendations as modified by the Board.

#### **Purpose of OES Update**

The OES is intended to promote cost-effective solutions and an energy-conscious culture for county government agencies and employees by identifying goals, strategies, and actions in 10 focus areas, including energy use and efficiency, green building, electric vehicles, and waste management. The proposed update will revise the OES by incorporating the overarching goal of energy carbon neutrality by 2040 as well as the sub-goals as modified by the Board.

The OES update does not include items that are not directly related to reducing county operational energy use and associated carbon emissions. These items either are or will be the subject of different strategies and progress on them will be tracked elsewhere. For example, improving options for safe biking and walking is more appropriately addressed in the ActiveFairfax Transportation Plan, rather than the OES, because self-propelled, human-powered travel including activities such as walking, biking, and rolling (scooter/wheelchair/stroller) are being considered in the ActiveFairfax plan development. Similarly, Workforce Development is not directly related to reducing county operational energy use and so is not included in the OES update.

#### **Revisions to OES by Focus Area**

The Operational Energy Strategy was intended to be a living document. As recognized in the Strategy Overview, periodic review and updating would be required to help ensure that the OES goals, targets, and actions remained meaningful.

Since the OES was developed and adopted, the need to reduce energy use and associated carbon emissions has grown more urgent. The JET's call for energy carbon neutrality by 2040 reflects this urgency. Updating the OES to incorporate the JET goals, sub-goals, and recommendations, consistent with Board discussion and direction, ensures that the OES remains relevant and

continues to advance the Board’s long-standing commitment to environmental stewardship and support for its priority of a [clean, sustainable environment](#).

The proposed OES update includes a new Focus Area regarding the overarching goal of energy carbon neutrality and emissions reductions; a new Focus Area is required because the original OES does not have an emissions reduction target. In addition, targets for six of the original ten Focus Areas are also updated, as shown below and also on Attachment A. Explanations are provided when a Focus Area revision differs substantively from the JET recommendation as modified by the Board and memorialized in the May 4 Board Matter.

<i>New Focus Area: Emissions Reductions</i>	
Current Target	Proposed Revision
N/A	<ol style="list-style-type: none"> <li>1. Energy carbon neutral by 2040.</li> <li>2. 50% emissions reduction by 2030.</li> </ol>
<p><u>Difference:</u> Regarding the 2030 emissions reduction target, to eliminate ambiguity and provide consistency with other targets, use of an FY 2018 baseline is proposed instead of the 2019 baseline recommended by the JET.</p>	

<i>Focus Area: Energy Use and Efficiency</i>	
Current Target	Proposed Revision
Reduce energy use 20% by 2029, or the equivalent of about 2% per year over a 10-year period (2019-2029).	Using an FY 2018 baseline: <ol style="list-style-type: none"> <li>1. Decrease total energy use 25% by 2030.</li> <li>2. Decrease total energy use 50% by 2040.</li> </ol>
<p><u>Difference:</u> The revision proposes use of an FY 2018 baseline, not the 2019 baseline recommended by the JET or the 2016 baseline in the original OES. An FY 2018 baseline eliminates ambiguity, aligns tracking with the budget cycle, and ensures that projects already funded through the OES are included in reported savings.</p>	

<i>Focus Area: Green Buildings</i>	
Current Target	Proposed Revision
Achieve LEED Silver on all new construction and renovations on facilities with an occupied area greater than 10,000 square feet.	<ol style="list-style-type: none"> <li>1. All projects beginning planning and design in 2021 must be Net Zero Energy (NZE) unless the Director advises the Board otherwise.</li> <li>2. All facilities entering design must be electric-ready by 2022 and electric-only by 2024.</li> </ol>
<p><u>Difference:</u> During the March 16 Environmental Committee meeting, questions were raised regarding the decarbonization of energy-using equipment in buildings that are in design or under construction. Responses to those questions were provided in an April 5 memorandum to the Board. Item #2 reflects the recommendations discussed in that memorandum.</p>	

<i>Focus Area: Innovative Energy Solutions</i> <i>Rename "Renewable Energy"</i>	
Current Target	Proposed Revision
Implement a rooftop solar pilot project at the Springfield Warehouse capable of generating electricity equivalent to the facility's expected annual electricity consumption.	Using an FY 2018 baseline: 1. Produce 25% of county electricity from renewables by 2030. 2. Produce 50% of county electricity from renewables by 2040.
<p><u>Difference:</u> The two JET recommendations use the term "county energy" with respect to production goals. The revision uses the term "county electricity," which corresponds to the type of energy produced by renewable generation systems. In addition, the revision deletes the qualifier "in-county," thereby keeping the focus on the county's use of renewable energy. For consistency with the other proposed revisions, the baseline is FY 2018, not 2019 as recommended by the JET.</p>	

<i>Focus Area: Electric Vehicles</i> <i>Rename "Fleet Electrification"</i>	
Current Target	Proposed Revision
<ol style="list-style-type: none"> <li>1. By 2025, ensure that Level 2 charging infrastructure is installed at up to 20 major governmental facilities.</li> <li>2. By 2030, ensure that 5% of government passenger vehicle purchases are electric or plug-in hybrid.</li> </ol>	<ol style="list-style-type: none"> <li>1. County buses and fleet vehicles will be electric or a non-carbon emitting alternative by 2035.               <ol style="list-style-type: none"> <li>a. By 2035, 99% of Connector bus fleet miles traveled will be with non-carbon emitting vehicles.</li> </ol> </li> <li>2. No diesel buses will be purchased after FY2024 unless the Director informs the Board as to why.</li> <li>3. For non-bus fleet vehicles that may not have non-carbon emitting alternatives, develop a plan to mitigate vehicle emissions.</li> <li>4. Install necessary charging infrastructure for county fleet vehicles.</li> <li>5. Apply for grant funding for county fleet vehicles when possible.</li> <li>6. Reserve parking for hybrids and EVs at county government buildings.</li> <li>7. Use the social cost of carbon when considering costs for county fleet vehicles.</li> </ol>

<i>Focus Area: Goods and Services</i>	
Current Target	Proposed Revision
<p>By 2020, require that all major appliances, such as refrigerators and televisions, are EnergyStar-certified, unless it can be shown that an energy-efficient option is not available. (Procedural Memorandum pending approval.)</p>	<p>Review purchasing (e.g., what is being ordered and used) and develop a sustainable purchasing program.</p>

<i>Focus Area: Waste Management</i> <i>Rename "Waste Reduction and Recycling"</i>	
Current Target	Proposed Revision
Build on the county's 2016 recycling rate of 50% by diverting at least 3% more waste by 2030.	<ol style="list-style-type: none"> <li>1. By 6/30/2021, create a plan to be Zero Waste, and be Zero Waste by 2030.</li> <li>2. Conduct a trash and recycling audit.</li> <li>3. Encourage expanded composting.</li> </ol>

**Anticipated Funding Approach**

The Introduction to the 2018 OES recognizes that achieving the goals and targets of the Operational Energy Strategy would require financial commitments from the Board, departments, and agencies. Initial capital outlays, adequate staffing and resources, and dedicated funding were described as essential both to undertake the energy and cost-saving action in the OES and to realize their benefits.

The Board has demonstrated its financial commitment to the OES since its July 2018 adoption. Specifically, the Board has approved carryover funding in the amount of \$4.5 million in fiscal years 2018, 2019, and 2020 to support OES building energy improvement; it also has funded numerous other OES projects during quarterly reviews, including the conversion of streetlights to LED technology and the purchase and installation of electric vehicle charging stations. In addition, the Board authorized the creation of OEEC effective July 1, 2019, in part to oversee the implementation of the OES.

Many of the goals and sub-goals recommended by the JET and included as revised targets in the OES update are magnitudes of order greater than those set forth in the initial OES. As such, the challenges to achieving the updated targets will be much greater. As explained in a [March 9, 2021 memorandum to the Board](#), and also during the Board's [March 2021](#) and [April 2021](#) Environmental Committee meetings, achieving carbon neutrality by 2040 will require sustained, substantial investment over decades. This investment is needed to fund and maintain efforts including deep efficiency retrofits of existing buildings and facilities and "beneficial electrification" to replace direct fossil fuel use with electricity in a way that reduces overall emissions and energy costs in the building energy and transportation sectors.

The costs of achieving many of the updated OES targets have not yet been determined, however, and will depend on many factors. A primary factor will be the action plans that staff will need to develop collaboratively over time. These action plans, in turn, will depend on factors including the extent and timing of energy reductions, available supply and other market opportunities or constraints, and evolving technologies. Another significant factor is the cost of additional staff, such as project managers, needed to develop, implement and manage the supporting strategies and projects.

A complicating factor in the development of cost estimates is the absence of experience with respect to comparable completed projects. For example, the county has yet to design and construct a Net Zero Energy (NZE) building; as a result, its ability to determine the incremental

cost of NZE is constrained. Similarly, because the county has not yet conducted any pilot programs regarding fleet electrification, it cannot refer to past experience when estimating costs.

In light of these uncertainties, at this time OEEC anticipates continuing to request funding for OES projects through quarterly reviews, as it has over the last several years. In the near term, OEEC expects to request \$15 million at carryover to begin the implementation of the new OES targets. Additionally, as major plans are adopted, including the Community-wide Energy and Climate Action Plan and Zero Waste, OEEC will work closely with the Department of Management and Budget to propose funding in the FY 2023 Advertised Budget to supplement the quarterly reviews. This approach should help allow staff to develop and present a clearer picture of the costs and funding needs associated with OES initiatives and specific projects. It also should help more clearly identify the cost benefits associated with reducing carbon emissions, which in Fairfax County include, but are not limited to, human health effects, property damage from increased risk of floods and natural disasters, disruption of energy systems, and the value of ecosystem services.

### **Conclusion**

In just the three years since the Operational Energy Strategy was adopted in 2018, it has become widely recognized that meeting climate goals will require drastic reductions in current levels of energy use and resulting carbon emissions. The Board is now considering adopting an overarching goal of carbon neutrality by 2040, as well as related energy and climate goals. If the Board adopts these goals, then it will need the supporting strategies and actions set forth in the updated OES to ensure that the goals can be implemented.

If you have questions, please contact Kambiz Agazi at 703-324-1788 or via email at [Kambiz.Agazi@fairfaxcounty.gov](mailto:Kambiz.Agazi@fairfaxcounty.gov).

Attachment A, Current and Proposed OES Targets

cc: Joseph M. Mondoro, Chief Financial Officer  
Rachel Flynn, Deputy County Executive  
Kambiz Agazi, Director, Office of Environmental and Energy Coordination

### Current and Proposed OES Targets

Focus Area	Current OES Targets	Proposed OES Targets
Emissions: Over-arching Goal*	N/A	1. Energy carbon neutral by 2040. 2. 50% emissions reduction by 2030.
Energy Use and Efficiency*	1. 20% reduction in kBtu by 2029	1. Decrease energy use 25% by 2030. 2. Decrease energy use 50% by 2040.
Water Use and Efficiency	1. 20% reduction for new construction or renovations	No change
Green Buildings	1. LEED Silver	1. Projects beginning planning and design in 2021 are net zero unless the Director advises the Board otherwise. 2. Facilities entering design are electric-ready by 2022 and electric-only by 2024.
Renewables*	1. Pilot project at Springfield Warehouse	1. Produce 25% of county electricity from renewables by 2030. 2. Produce 50% of county electricity from renewables by 2040.
Fleet Electrification	1. Level 2 chargers at up to 20 government facilities by 2025 2. 5% of passenger vehicle purchases are EV by 2030	1. County buses and fleet vehicles will be electric or a non-carbon emitting alternative by 2035. 1a. By 2035, 99% of Connector bus fleet miles traveled will be with non-carbon emitting vehicles. 2. No diesel buses will be purchased after FY2024 unless staff informs the Board as to why. 2a. For non-bus fleet vehicles that may not have non-carbon emitting alternatives, develop a plan to mitigate emissions. 3. Install necessary charging infrastructure for county fleet vehicles. 4. Apply for grant funding for county fleet vehicles when possible. 5. Develop a plan to use 100% non-carbon emitting fuels for county fleet vehicles by 2030. 6. Reserve parking for hybrids and EVs at county government buildings. 7. Use the social cost of carbon when considering costs for county fleet vehicles.
Goods and Services	1. By 2020 require that all major appliances are ENERGY STAR	1. Review purchases and develop a sustainable purchasing program.
Waste Management	1. Divert 3% more waste from 2016 to 2030	1. Be zero waste by 2030. 2. Create a plan to be zero waste by 6/30/21. 3. Conduct a trash and recycling audit. 4. Encourage expanded composting.
Awareness and Engagement	1. FEEE will host at least 4 events per year	No change
Utility Cost Management	1. Quarterly review of best practices	No change
Reporting and Collaboration	1. Report on OES in Sustainability Initiatives and to the BOSEC	No change

\*Baselines are FY 2018.