

BOARD OF SUPERVISORS ENVIRONMENTAL COMMITTEE

March 16, 2021

**11:00 A.M.
Electronic Meeting**

Board of Supervisors Members Present:

Board Chair Jeffrey C. McKay
Committee Chair Daniel G. Storck, Mount Vernon District
Supervisor Walter L. Alcorn, Hunter Mill District
Supervisor John Foust, Dranesville District
Supervisor Penelope A. Gross, Mason District
Supervisor Pat Herrity, Springfield District
Supervisor Rodney L. Lusk, Lee District
Supervisor Dalia A. Palchik, Providence District
Supervisor Kathy L. Smith, Sully District
Supervisor James R. Walkinshaw, Braddock District

Others Present:

Bryan Hill, County Executive
Joe Mondoro, Chief Financial Officer
Elizabeth D. Teare, County Attorney
Kambiz Agazi, Director, Office of Environmental and Energy Coordination (OEEC)

March 16, 2021 Meeting Agenda:

[march16-environmental-agenda.pdf \(fairfaxcounty.gov\)](#)

March 16, 2021 Meeting Materials:

[Board of Supervisors Environmental Committee Meeting: March 16, 2021 | Board Of Supervisors \(fairfaxcounty.gov\)](#)

The following is a summary of the highlights of the discussion from the March 16, 2021 meeting.

Today's meeting was called to order at 11:00 A.M.

Item I Opening Remarks

After a brief introduction from Supervisor Storck, Committee Chair, the Environmental Committee accepted the minutes of February 2, 2021. With no further changes, the meeting minutes were accepted into the record.

Chairman Storck recognized Joe Mondoro, Chief Financial Officer, to give an update on the Office of Environmental and Energy Coordination (OEEC). OEEC was established as an office as part of the FY 2020 Budget. It was planned that as the organization matured, more staff would be recommended as the workload increased. Due to the COVID-19 pandemic response, two of the recommended positions from that period were deferred. As part of the FY 2021 Third Quarter Review, additional staffing for OEEC is recommended to support the initiatives the office has undertaken.

Chairman Storck also recognized Kate Daley, Environmental Specialist, OEEC, to give an update on Fairfax Green Initiatives. The Fairfax Green Initiatives Board Matters introduced in February 2019 by Supervisor Storck, Foust and now Chairman McKay, and July 2020 by Supervisor Storck, outline a number of environment and energy action items for county agencies. An updated Implementation Matrix was provided to the Board in the meeting packet. She highlighted progress on action items such as grant-funded environment and energy projects, increasing leadership accountability for climate change initiatives, R-PACE, and establishing a Fairfax Green Bank.

Item II Fairfax County Joint Environmental Task Force

The second topic on the agenda was a presentation of the Fairfax County Joint Environmental Task Force (JET) by Kate Daley, Environmental Specialist, OEEC.

Ms. Daley began her presentation with the establishment of the JET. In April 2019, a Joint Board of Supervisors and School Board meeting was held to establish and announce the JET. Membership was comprised of two members of the Board of Supervisors, two members from the School Board, and members of the community. Focus areas included four priority areas: energy, transportation, waste management and recycling, and workforce development.

The JET focused primarily on county and school operations. Members met monthly from September 2019 to September 2020 to review ongoing county and school efforts to determine where further action was needed. County and school staff were regular contributors to these meetings, supplying information on ongoing operational efforts and data, when needed. Subcommittees developed final recommendations to the JET. A final report was compiled in early October 2020.

Under the four focus areas, the final recommendations were as follows: Energy – Fairfax County Board of Supervisors, School Board, Park Authority and Redevelopment and Housing Authority should commit to being energy carbon neutral by 2040; transportation – transition to electric or zero-carbon alternatives for municipal buses by 2030, and for school buses and eligible fleet vehicles by 2035; waste management and recycling – county and schools should be zero waste by 2030; workforce development – county and schools should partner to create and enhance educational resources, training programs, and other green career development opportunities for FCPS students, adult learners, and working professionals.

The final report was accepted in a Board Matter introduced by Supervisor Storck in October 2020. From October 2020 to February 2021, agencies were involved in a response process to the JET recommendations, resulting in the March 2021 memorandum, and the staff presentations in March and April 2021.

Board Discussion:

Supervisor Gross commented that when the JET was formed, it was a huge task that had to be distilled down to four priority areas. There was no budget or dedicated staff. Camela Speer deserves recognition for her efforts. Task forces with the Board and the community work very well, increasing the conversations between both. The real work is ahead of us.

Chairman Storck echoed her comments and acknowledged the work of his staff member, Camela Speer. Their colleagues with the School Board are working through some of the issues that came up. The Board is optimistic that they will move forward sometime in June 2021.

Item III

Joint Environmental Task Force Energy Recommendations

The third item on the agenda was on the Joint Environmental Task Force Energy Recommendations, given by Susan Hafeli, Deputy Director, OEEC.

Ms. Hafeli began with presenting the JET energy recommendations. The first recommendation was for Fairfax County entities to be energy carbon neutral by 2040. The second recommendation is comprised of four subgoals to ensure the 2040 goal is achieved and related to carbon emissions, clean renewable energy, building energy performance standards for existing buildings, and Net Zero Energy standards for new buildings and major renovations.

The breadth of the JET energy recommendations and aggressive goals require a level of effort beyond existing budget and staff resources. Staff will need to create a comprehensive action plan to address the recommendations. These plans will need to address actions and timelines as well as resource needs, including staffing and funding. They will also need to identify responsible parties, legal issues including authority, and annual appropriations.

The JET recommended very ambitious carbon reduction goals, but they are in line with state and regional reduction goals. These energy goals may be achieved with a sustained commitment over time and through a phased approach. Staff recommends a successive five-year plan approach, much like the Capital Improvement Program. For each five-year period, staff will need to identify what needs to be achieved in that period. Before the period is over, staff will need to develop the next five-year plan, taking into account technological developments, expanded availability of efficient goods and services, market transformations, and legislative actions and incentives.

Ms. Hafeli presented graphs illustrating county emissions, highlighting the four main contributors: Government Buildings, Parks and Recreation, Public Works, and Housing and Human Services.

There are three key inputs of county emissions: the services provided, the carbon intensity of the energy source, and how efficiently the energy is used. She presented another graph that illustrates the carbon intensity of three fuels used in county government operations, including electricity, gasoline, and natural gas. The carbon intensity of electricity varies because it primarily reflects the equipment using the energy. The graph shows a decline in carbon intensity to generate electricity due to the phase out of coal and its replacement by natural gas. The

decline in carbon intensity is expected to continue, due largely to the Virginia Clean Economy Act, which set very aggressive renewable energy and carbon reduction goals. It requires Dominion Energy to be 100 percent carbon free by 2045. It establishes a mandatory renewable portfolio standard that creates economic incentives for renewable energy generation. It declares that 21,000 MW of solar and wind power is in the public interest and will provide incentives for construction. These two resources have periods of active generation that are complementary in generating electricity. As the carbon intensity of electricity falls below that of liquid fuels, electrifying our transport becomes increasingly important to reducing carbon emissions.

The OEEC has identified five areas to put into action to achieve carbon neutrality by 2040: Periodic inventories of government greenhouse gas emissions; stationary emissions, including continued support for, and expansion of the Operational Energy Strategy; mobile emissions, including electrification of county and school buses and vehicle fleet; the ability to generate electricity from renewable sources on-site and to use that self-generated electricity at other government sites; and participation in an off-site renewable energy arrangement.

Staff envisions the goal of carbon neutrality as a policy. Achieving the goal will require action in the following areas: Energy efficiency, Net Zero Energy buildings, renewable energy, and electrification of buses and fleet vehicles. Staff will need to keep informed of technological and other developments in each of these areas to present creative solutions to issues. Staff will need to make deep efficiency retrofits to the existing buildings and facilities and accelerate the transition to Net Zero Energy for major renovations and new construction. Staff will also need to seek additional opportunities in the areas of renewable energy and “beneficial electrification” to replace direct fossil fuel use with electricity. Additional budget and dedicated staff resources are needed to plan, develop, implement, and manage these activities and projects. Existing policies, goals, and targets will need to be revisited and revised to ensure they are consistent with the JET energy recommendations and the long-term goal of carbon neutrality.

The county is currently pursuing energy efficiency improvements in existing buildings pursuant to the Operational Energy Strategy. Projects are achieving a 12 percent improvement in efficiency. A goal of carbon neutrality by 2040 will require much deeper energy efficiency retrofits than what is currently being undertaken. Deep retrofits require an analysis of the whole building and combining multiple complementary conservation measures. These retrofits aim to reduce

onsite energy use by 50 percent or more, compared to the baseline energy use. Based on research, staff believes that reducing energy use in existing buildings by 30 percent is the most reasonable option available at this time. It will not get us to Net Zero Energy in existing buildings, but will provide a start towards that goal, combined with onsite and offsite solar arrangements to get us even closer.

A 2014 General Services Administration report indicated a cost of about \$10 per square foot to achieve a 30 percent reduction in building energy use. Applying this estimate to the Facilities Management Department (FMD) building portfolio yields an estimated annual cost of deep efficiency retrofits of about \$6.5 million. These deep efficiency retrofits are intended to reduce energy use and carbon emissions. There will be cost savings, but it cannot be viewed on the basis of simple payback or return on investment. Energy improvements, like lighting retrofits, can be taken on quickly and inexpensively, while deeper energy reductions often require more expensive replacements of heating and cooling equipment and improvements to the building envelope. Focusing on payback or return on investment fails to capture the full financial perspective and benefits of retrofit measures that reduce energy consumption, including avoided emissions, cost savings associated with repair and replacement, and improved resilience.

In 2020, the county adopted an updated Sustainable Development Policy for new construction and major renovation projects beginning design in FY 2021. This policy requires achievement of LEED Gold certification as well as a minimum 30 percent energy performance improvement for new construction, and a minimum of 25 percent energy performance improvement for major renovations. Beginning in FY 2024, the policy incrementally strengthens the energy performance improvement criteria in future years, with a target of achieving Net Zero Energy eligibility by FY 2031, at the latest. The JET recommendation is significantly swifter. It recommends reaching Net Zero Energy eligibility by FY 2021, unless county staff advises the Board prior to the 30 percent design phase of why the building cannot meet the standard. To reconcile the current policy and the JET recommendation, OEEC proposes a compromise between the two, where Net Zero Energy will be achieved by FY 2027.

The county, schools and other Fairfax entities are beginning to take steps towards onsite solar electricity, by using solar power purchase agreements (PPAs). With the solar PPA, the county purchases solar-generated electricity from a third-party provider at a fixed rate over fixed terms of between 25 to 28 years. PPA arrangements allow for the purchase of renewable electricity with no upfront costs

because the provider is responsible for design, permitting, and installation costs. The provider is also responsible for operation and maintenance over the contract term. Making PPAs even more attractive, is the pricing for rooftops systems that are below the current utility rate. As the efficiency of solar panels increase, we will be able to generate more electricity from the same amount of space. However, given the current technologies, onsite generation of renewable energy, in conjunction with deep efficiency retrofits, is not enough to reach the JET's carbon neutrality goal. Consequently, the county will need to explore offsite energy arrangements. In an offsite arrangement, participants agree to purchase electricity from a solar or wind farm over a period of years. A well-known example of this is the 2020 transaction where Dominion agreed to develop a solar farm with the participation of both Arlington County and Amazon. The solar farm is expected to be producing electricity next year. In addition to exploring offsite arrangements, the county should support legislative proposals to remove barriers to onsite generation, including state and utility restrictions on the ability of an electric customer to generate electricity onsite, or to use that electricity as they see fit. For example, under current Virginia law, electricity generated onsite must be used on that site, with the sole exception being the Fairfax County I-95 Landfill project. This means that locations like parking garages and open spaces are not viable candidates for large solar installations because they do not have significant electric usage and cannot apply the generation to other county electric accounts. Eliminating these types of restrictions will allow for more aggressive renewable energy production targets in upcoming five-year plans.

As mentioned earlier, gasoline and diesel use account for about a quarter of the county's carbon emissions. Achieving carbon neutrality by 2040 will require that we transition from vehicles with internal combustion engines, powered by fossil fuels, to those powered by electricity, using low or zero carbon sources. The county's Operational Energy Strategy includes a focus area dedicated to electric vehicles. The target includes the installation of Level 2 electric vehicle (EV) charging stations at up to 20 county facilities. OEEC recommends that we stay the course with this EV infrastructure recommendation. Staff acknowledges that achieving carbon neutrality will require a transition to 100 percent of electric vehicles and buses. While there is a lot of enthusiasm over EVs, they still only represent a very small share of the market; options with respect to school buses, transit, and trucks are even more limited. This is another instance where successive five-year plans will be needed to achieve the deep carbon emissions reductions associated with carbon neutrality. While there may be limited options for EVs

today, technological, market, legislative, and other developments are expected to provide more possibilities for fleet electrification.

Achieving the goal of carbon neutrality will require a significant and extended commitment and a level of effort beyond the current level of budget and staff resources. However, the energy goals may be achievable with a sustained commitment over time and a phased approach with the successive five-year plans that take into account changing technologies, goods and services, and laws.

The OEEC recommends that the first five-year plan include five key elements: Updating the Operational Energy Strategy energy use goal and targets to support carbon neutrality, and making deep efficiency retrofits in existing buildings; accelerating timelines for the Sustainable Development Policy; staying the course on the installation of EV infrastructure and transition of the fleet; staying the course on onsite renewable energy generation and exploring offsite arrangements; and exploring legislative proposals to remove barriers to onsite renewable energy deployment.

Board Discussion:

Supervisor Lusk began with questions about slide 7 and asked if using creative solutions will require a continual review of innovative technology. He asked how staff will stay up to speed on these technologies and how we are keeping up with battery technologies.

Ms. Hafeli responded that innovative solutions is one of the focus areas of the Operational Energy Strategy. Staff envisioned periodic meetings where agencies share progress and inform the people involved. Unfortunately, not being in the office has had an impact on taking the steps to establish a formal process. Staff is very good at reviewing journals and publications in terms of identifying the developments needed for creative solutions. In respect to battery technologies, these are much further along than they were five years ago. As part of the Virginia Clean Economy Act, the state has created many incentives for Dominion to develop and implement battery solutions.

Supervisor Lusk asked about slide 8 and the \$6.5 million annual cost estimate to achieve 30 percent energy efficiency performance standards. He asked how long that cost will be for and what savings in terms of dollars would look like.

Ms. Hafeli responded that the annual investment would be over the duration of the 18-year period from now until the 2040 deadline. It was developed by taking the square footage of the FMD portfolio and applying the \$10 per square foot figure and dividing it by 18 years. In terms of savings, based on the estimated energy efficiency savings and current electricity and natural gas rates, staff is anticipating approximately \$3.5 to 3.7 million in savings. As the utility costs increase, the savings will increase over time. Those are strictly dollar savings; they do not account for savings associated with avoided emissions. She added that the Virginia Clean Economy Act sets very ambitious goals. The requirement to generate 21,000 MW of renewable power will be the subject of cost recovery proceedings at the Virginia State Corporation Commission and are likely to translate into cost increases for rates, which will increase over time.

Supervisor Palchik commented that she is very excited to see this. She echoed that the goals are ambitious, but she supports them and finds them to be very important. Secondly, she asked about the energy service companies (ESCOs) and how that translates to the school system.

Ms. Hafeli responded that she is not familiar at that moment with where the school system currently is for comparison.

Supervisor Palchik went on to comment that the Sierra Club has been reporting on utilities across the U.S. and how they rank on clean energy generation. She is happy to see that Dominion is above the average. She is looking forward to seeing this improve and will be happy to advocate for legislation at the state level.

Chairman Storck acknowledged staff work on these efforts, especially over time. He asked that Kambiz Agazi follow up with the schools to address Supervisor Palchik's question. He expressed the need to keep the public entities connected to ensure that we do not ask the private sector to do something that we aren't ourselves prepared to do.

Supervisor Palchik added that she agrees with the Chairman and that the education, outreach, and equity pieces are important. We should continue with this outreach and education to help encourage others, specifically for the young generation.

Supervisor Walkinshaw thanked staff and acknowledged their work. The presentation pointed out two of the most challenging and costly aspects of getting to Net Zero Energy buildings, which are deep energy retrofits and beneficial

electrification. Given that the retrofit of carbon-based systems is the most difficult and expensive undertaking, we want to limit the number of times we would have to do that in the future. He recognizes that new construction may not meet Net Zero Energy standards in the design process, but asked if we are spending money now to install things that we will have to replace in five, 10 or 15 years. He asked if there is an interim “do no harm” step that would be less costly to implement now versus years down the road.

Dr. Agazi directed the Board to slide 9, which referenced Net Zero Energy commitment in building construction. The existing Sustainable Development Policy, adopted in September 2020, includes a transition to Net Zero Energy. Prior to that updated policy, there was no commitment to energy LEED building standards. We have now included a 30 percent energy efficiency improvement as a minimum in FY 2021. OEEC’s recommendation is to transition sooner rather than later. That will address how we will go about achieving Net Zero Energy. This will go a long way under the current LEED policy, which is a maximum of 50 percent efficiency.

Supervisor Walkinshaw asked if we would be getting to either 30 percent or even 50 percent efficiency levels while still installing fossil fuel powered furnaces, boilers and water heaters in new buildings.

Dr. Agazi responded that it could be a combination of the two approaches of fossil fuel systems and electric systems in new construction. Staff will look into it and respond to the question.

Supervisor Walkinshaw would like to see the dollar-for-dollar cost assessment relative to spending more now for an electric option, versus spending less for a fossil fuel system that would be replaced in the near future.

Supervisor Herrity referenced the slide for the Virginia Clean Economy Act and the estimated 50 percent increase in electric bills. He also mentioned clear-cutting for solar farms and hoped that we would not be doing this practice in Fairfax County. He commented that a lot more work needs to be done regarding the fiscal impact on Fairfax County and its residents. He asked whether ESCOs or the county receive the cost savings from projects.

Ms. Hafeli responded that the county will be receiving the savings.

Supervisor Herrity asked how the ESCOs were being paid.

Ms. Hafeli responded that the county deviates from the traditional ESCO model and pays the company up front, much like a contractor, and the county receives the energy savings money. Staff arranged with the electric companies to retain the savings.

Supervisor Herrity agreed that was a good strategy. He continued to ask about the return on investment. The citizens and residents are interested in the environment, but we need to figure out where the money will be coming from. We have increased county taxes 45 percent in the last 10 years and that cannot continue. We need to identify where the money will be allocated from. Based on the priorities of our budget, we cannot be everything to everyone. Residents have little control over their energy bills and taxes and these measures will have a significant impact to them, as well as the Virginia Clean Energy Act.

Supervisor Smith commented that she is happy to see the five-year phased approach, as legislative changes need to be advocated for over time, one of those being the California Vehicle Emissions Standards. She asked how to begin looking into implementing these standards.

Ms. Hafeli responded that staff has looked into the ability to sign on to the California Vehicle Emission Standards during the last legislative session, and that process stalled. Staff will continue to look at that this year.

Supervisor Smith would like to know what would be the “biggest bang for our buck” in the first steps in this process.

Chairman Storck added that we would like to achieve these goals by being smart and economical, striking a balance between the two. What we have seen in private industry has been remarkable. We agree that we want to be flexible enough to take advantage of the choices that we have without losing sight of the goals.

Chairman McKay thanked staff for bringing these goals forward. First, the cost of these technologies is going down, as staff presented. Secondly, legislative changes recently have been successful and helpful to the county. The solar program that was just approved due to the legislative changes in the past year will result in future utility savings to the county. There is a cost of doing nothing that could be more costly to our residents that is harder to quantify. Staff coordination will be

important with both county and schools, going forward. He asked how we communicate with other agencies and with schools to meet these environmental goals and if there is an internal working group that will support these goals as they are formalized in the future.

Dr. Agazi referred to slide 7 and highlighted the use of five-year plans and the operationalization of Board policy. Staff has been doing it for a number of years, for example, since the adoption of the Operational Energy Strategy in 2018, and the establishment of the OEEC. Staff has been working with such agencies as Parks, FMD, and the Redevelopment and Housing Authority, and will continue to work closely with schools. The OEEC will continue to take a lead role in all of these pieces, on solar and ESCOs, for example.

Chairman McKay emphasized how critical the coordination agency by agency will be on these goals. Everyone needs to be engaged and participating across the organization and schools. That responsibility doesn't fall solely on one agency. If we lead on these fronts, we have found that schools will follow our initiatives.

Chairman Storck summarized the JET recommendations regarding energy seem to be aligned in all respects but new buildings and major renovations of buildings. He asked Dr. Agazi if that is a fair statement.

Dr. Agazi agreed with that statement. He added that he will address the comments that Supervisor Walkinshaw brought up and respond to the Board.

Chairman Storck asked about the way that they would receive the information regarding construction and renovations.

Dr. Agazi responded that it would most likely be a memorandum to the Board and could be mentioned in the upcoming Environmental Committee.

Chairman Storck also emphasized the goals proposed in the JET that need further information: committing to renewable energy, Net Zero Energy design planning, and addressing the cost savings (life cycle savings). Over time, the cost of energy will be reduced if these measures are taken, and it should be part of the adjustments toward the cost, going forward.

Supervisor Herrity wanted to address a comment by the Board, in response to Supervisor Walkinshaw's comment about not moving forward too quickly before

technology advances. He would like to be on the leading edge, but balance is needed as the cost of these technologies goes down over time.

Dr. Agazi responded to Supervisor Herrity's comment by stating that the memorandum that will be prepared for the Board will take that into consideration. Net Zero Energy is not a new concept, and the transition of equipment to electric and the possibilities and opportunities will be included in the memo to the Board.

Supervisor Foust commented that we have a crisis at hand and going slowly will not be the most cost-effective or efficient way to deal with this crisis. Specifically, we have a lot of momentum and he would like to keep it up. There are the obvious costs associated with the investments that we are making. These pale in comparison to what it is costing to deal with this challenge.

Chairman Storck's final comments were that Ms. Hafeli gave an exceptional presentation. He also acknowledged the work of Dr. Agazi in preparing the information for the Board.

Item IV

Quarterly Review of Environment and Energy Not in Board Packages (NIPs)

The fourth item on the agenda was a Quarterly Review of Environment and Energy Not in Board Packages (NIPs), given by Chairman Storck. He referenced the Fairfax Green Initiatives Update and the Agency Responses to the Joint Environmental Task Force Recommendations.

Board Discussion:

Chairman Storck also reminded the Board of the upcoming Community-wide Energy and Climate Action Plan (CECAP) meetings and asked Dr. Agazi to give a brief update.

Dr. Agazi commented that CECAP Working Group meetings will occur in late March 2021, at which time members will be prioritizing strategies to be considered for the final report. The current timeline for Board adoption of the plan is still scheduled for June or July 2021. Being that this is a community-driven process, the community will be able to understand the plan and should enjoy reading it.

Chairman Storck also informed the Board that the next set of JET recommendations will be presented at the next Environmental Committee in April.

The meeting adjourned at 12:25 P.M.