

CLIMATE CHANGE, ENERGY AND ENVIRONMENT COMMISSION
C/o Department of Environmental Services
2100 Clarendon Blvd., Suite 705
Arlington, VA 22201

January 24, 2022

Honorable Katie Cristol, Chair
Arlington County Board
2100 Clarendon Blvd., Suite 300
Arlington, VA 22201

RE: Need to reconsider fossil fuel space and water heating in new ART Bus Facility

Dear Chair Cristol:

The Climate Change, Energy and Environment Commission has serious concerns about the recent staff decision to rely on new fossil fuel systems for all space heating and hot water needs throughout the administrative offices and the maintenance areas of the new ART Operations and Maintenance Facility (AOMF). This decision commits the County to fossil fuel use in this facility for 15 to 30 years. The difference in greenhouse gas emissions between using electricity and gas for this project is stark because this facility will open in 2025, just as the County Government achieves 100% renewable electricity supply for County Government operations.

For reasons we will outline below, we believe alternative HVAC and hot water designs may be feasible for this project that would prevent substantial greenhouse gas emissions and allow the County to reach, or come much closer to reaching, its Sustainable Public Facility Policy (Net Zero) and Community Energy Plan (carbon neutral) goals for this project.

Our primary recommendation is for the County Board to direct County staff to initiate an independent review of these decisions by an expert in designing zero carbon and low carbon buildings comparable to the AOMF to identify the lowest carbon emissions options for this facility. The sooner this action is taken the sooner the results can be incorporated into the design, minimizing possible delays to the project.

C2E2's concerns include the following:

- At C2E2's Environmental Assessment hearing for this project, staff and consultants were not able to explain why gas systems were required for all space and hot water heating needs throughout the facility. Discussion was abruptly ended by staff immediately after it was disclosed that the County's design consultant actually had proposed electric systems for the building, but that County staff favored all gas systems.

- There is no sign that greenhouse gas emissions were calculated at any point during the decision-making process, although doing so is easy. The County cannot hope to achieve its greenhouse gas goals until greenhouse gas emissions are calculated and carefully considered as part of decisions such as this.
- In justifying use of gas for the domestic hot water (DHW) system, County staff and consultants provided three rationales, quoted verbatim below:

“Maintenance personnel prefer tried-and-true systems in an essential building.”

C2E2 concern: This is a common rationale for rejecting clean energy technology. It provides a rationale for doing the opposite of what is required by the County Government’s policy of leading by example. Moreover, the assertion that electric DHW systems for office buildings are untried and unreliable is demonstrably false. Electric DHW systems are common in newer office buildings and schools in Arlington and nationally, including all existing and planned Net Zero buildings, all Amazon HQ2 buildings, JBG Smith’s recently approved Crystal Gateway building, and many others. The technology is mature and local experience is substantial and growing.

“There is no life-cycle cost advantage.”

C2E2 concern: As noted earlier, the cost of GHG emissions was not calculated or considered in making this statement. We are well past the point of choosing fossil fuel systems solely because they are cheaper.

“The storage tanks required will not fit into the allotted spaces in this building, making this system impractical.”

C2E2 concern: The problem is that the space has been designed for gas rather than electric systems. It is much better to correct this problem now rather than build-in fossil fuel usage for another generation because “the space allotted” in the current design is too small.

- The central challenge staff have cited in designing the HVAC system is uncertainty regarding the ability of electric heat pump systems to provide the amount and intensity of heat needed in the bus bays during very cold weather. This concern, which involves a small number of days per year, appears to drive the decision to heat the entire building – administrative offices and bus bays – with gas year-round. An independent review could test the necessity of this outcome. It is possible, for example, that a secondary heating system could be used in the bus bays on very cold days; that the office building area can be made all electric even if the bus bays cannot; or that there are, in fact, reliable heat pump systems available that would meet the needs of the entire facility.
- Whether to provide air conditioning is a significant health and safety decision that drives overall HVAC design. The decision in this case has been made not to

provide air conditioning for maintenance staff. To our knowledge this decision has not been disclosed or reviewed publicly until now. It is not clear that the impact of climate change on extreme heat was taken into account. By the mid-2020s, when this facility *begins* operation, there are projected to be 66 percent more days with a heat index over 95 degrees than in recent history, and the number of such days will continue to grow every year.¹ If air conditioning will be necessary for the health, safety and productivity of County employees, it will be far better, and less expensive, to include it now than to retrofit in a few years. In the event that air conditioning is necessary, a highly efficient geothermal heat pump system may prove to be the ideal system to provide both heat and air conditioning.

- It is not too late to review these decisions. In fact, this is the earliest possible point of public and Board input into these decisions. C2E2 was not briefed on the HVAC and hot water decisions until December 2021, despite efforts to obtain information earlier. It is also our understanding that these decisions were not disclosed during the Public Facility Review Committee process. Decisions such as this are too important to be made behind closed doors without any meaningful opportunity for review.

After reviewing the rationales provided by staff, we see this situation as part of a continuing pattern of decision making not in alignment with County climate goals and policies, including the Net Zero goal that is part of the Sustainable Public Facilities Policy. Some of the rationales also reflect low awareness of the existence of a true climate emergency, and of the County's commitment to lead by example.

We urge the Board to order a third-party review as soon as possible.

Sincerely,



Joan McIntyre
Chair, Climate Change, Energy and Environment Commission

Cc: Members, Arlington County Board
Mark Schwartz, Arlington County Manager
Greg Emanuel, Director, Department of Environmental Services
George May, Deputy Director, DES Facilities and Engineering

¹ See, e.g., *Climate Change Projections for the District of Columbia*, Katherine Hayhoe, Ph.D., Anne Stoner, Ph.D., ATMOS Research and Consulting for Kleinfelder, April 2015, at p. 10, "Summer Heat Index," available online at: https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Attachment%201%20ARC_Report_07-10-2015.pdf.