

Montgomery County Climate Action Plan

Comments by Powerupmontco

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The Montgomery County Climate Action Plan is recommending a number of bold steps toward mitigating the County's greenhouse gases and carbon emissions. Powerupmontco has several concerns about the County Action Plan and its implementation. We also have suggestions for achieving those ambitious goals.

Montgomery County Climate Action Plan Goal: All electricity consumed in the county will be generated by renewable resources by 2030.

Current state law: The current Maryland Resource Portfolio Standard requires that 50% of consumed electricity be generated from renewable resources by 2030. 14.5% must be solar and at least 1,200 MW are reserved for off-shore wind. Maryland Code, Public Utilities § 7.703.

Proposed state law: The proposed Climate Solutions Now Act calls for net zero carbon emissions by 2045. Both the Maryland State Senate and the Maryland House of Delegates are considering this Act in the current legislative session.

Montgomery County Action Plan initiatives to achieve plan goals and our concerns:

1. An Opt-out Community Choice Energy program.
 - a. Under this program all county electric consumers will be switched from their current providers (either Pepco's standard offer service "SOS", or a reseller) to the county program. The county program will purchase electricity for all consumers and then resell the electricity to consumers. The county program will contract with generators of electricity. By 2030, the county will contract with only renewable generators. County consumers are forced to opt-in but are allowed to opt-out of the program. **State legislation is required to authorize this program.**
2. Requiring new private buildings or extensively remodeled roofs to install solar PV panels during construction. The county may subsidize this activity but it would mainly rely on private investment. **The plan did not provide any details regarding the costs to the county or the private entities.**
3. Promote Private Solar PV systems.
No estimates of the amount of subsidy the county would pay, the amount of cost the consumer would cover, what provisions for social equity would be made or any other details were provided.
4. Public facility solar photovoltaic installations and groundwork.
The county can install PV panels on its own buildings and on solar canopies over its parking lots. **No estimates of the cost and the amount of electricity generated were provided.**
5. The state could change its 2030 RPS from 50% to 100%. **The county has no control over this action. It would take state legislation.** In the current session at the state house, there is a bill to achieve net zero emissions by 2045, not 2030.

Alternative recommendations:

1. **Propose a Carbon Tax:**

Change the county current tax on electricity consumption into a carbon tax. The tax rate should be high enough so that the sum of the price and the tax for electricity generated by renewable sources is less than the sum of the price and the tax for electricity generated from fossil fuel generators. This system would provide an incentive to consumers to move to renewable energy resources and would also provide an incentive for resellers to purchase more electricity from renewable resources.

There is a lot of information needed to administer a precise carbon tax through the county kwh tax. For example, it would be necessary to know for every reseller and the Pepco SOS, what type of fuel and what type of technology is used to generate the electricity each reseller's purchases. Even within fuel types the carbon content can vary, especially for coal. There are a variety of fuels used for generation and it might be difficult to determine the carbon based content of these fuels. Sometimes fuels can contain a mix of different carbon based content, such as a mix of wood or waste products from a paper plant. Even determining the carbon based content for relatively homogenous fuels such as natural gas can be challenging because the amount of carbon per kwh is dependent on the type of generating plant used. For example, a combined cycle plant uses less carbon per kwh than a combustion turbine.

2. **Utilize Three Different Categories of Fuel and a Tax Rate Specific to Each Category:**

As an alternative to a precise carbon tax we suggest using three categories of fuel and a tax rate specific to each category.

1. Category 1 would be **zero emissions generating plants, including nuclear, solar, wind and hydro**. In Maryland today most of what is in this category would be nuclear. The tax rate for this category could be 0.5 cents per kWh which is a decrease from the current approximately 1.1 cent rate.
2. Category 2 would be **all plants that burn a fuel containing carbon except for coal**. This category would include natural gas, petroleum products, waste products and wood. I would suggest a 3 cent per kWh for this category.
3. Category 3 would be **coal** and I would suggest the tax rate be 5 cents per kWh.

If energy consumers buy only wind energy or any other Category 1 source, the tax rate decreases to 0.5 cents per kwh. However, not many consumers or resellers purchase from just one category.

A typical reseller in MD probably buys 40% category 1 (mostly nuclear), 50% category 2 (mostly natural gas) and 10% coal. The tax associated with that mix of plant would be 2.2 cents per kWh determined as 40% times 0.5 cents + 50% times 3 cents + 10% times 5 cents.

Resellers can easily compute the tax. Resellers typically contract with specific generators for about 80% of their electricity needs in our area. Resellers know the type of fuel used by the contracted generator. For the rest of their supply, they rely on the PJM markets. For the portion of their supply coming from the PJM markets, the reseller can obtain inputs from PJM regarding the percentage of electricity generated by fuel type. The county could audit the resellers to check on the tax rates. The tax rate could change on a monthly or quarterly basis depending on each resellers' purchases.

3. **Upgrading the electric grid to allow for dual directional flow of electricity and multiple points of energy storage.**

Currently, the electric grid is designed for one way transmission of electricity from large generators to local substations then to distribution transformers and finally to consumers.

Because the electric grid cannot store energy, if generators fail customers must be cut-off to maintain the viability of the system.

In the future when there is significant investment in solar panels in every corner of the county, to take full advantage of those solar panels, the electric grid must allow electricity to flow from any source of electricity to any place where there is demand for electricity. Therefore, in order to take full advantage of solar generated electricity the electric grid must be redesigned.

There is a need for battery storage because solar generation is intermittent – when a cloud passes in front of the sun, solar panel generation declines. New classifications of service and customers are needed to efficiently incorporate battery storage within the public utility environment. For example, a group of customers could form a co-operative that would buy and operate a battery storage system within the grid.

The Public Service Commission is the only entity that has the authority to require the electric utilities to redesign their plant and to offer the services needed to fully implement that county's solar generation goals. Therefore, it is necessary for the county to develop an ongoing process to actively pursue policy changes before the Public Service Commission.

Montgomery County Climate Action Plan Goal: Zero greenhouse gas emissions from buildings by 2035.

Current Situation: 50% of the county's Greenhouse gas emissions are generated by buildings. The 50% can be divided into buildings using electricity (30%) and buildings using natural gas (19%). This goal here is to eliminate emissions associated with buildings utilizing natural gas.

The Climate Action Plan (page 101) estimates that existing residential buildings are associated with 59% of GHG emissions from buildings, existing commercial buildings 40%, new residential 0.8% and new commercial 0.4%.

County Proposed Plan: Achieve zero greenhouse gas emissions from all county commercial and residential buildings by replacing fossil fuel equipment currently utilized in buildings to electric options by 2035.

The problem: How to address natural gas emissions produced by existing residential buildings. Implementing the policies recommended by the County's Climate Action Plan Goals (listed below) would be unpalatable to the staunchest climate action supporters. As long as the price of natural gas is extremely low compared to alternative heating solutions, most commercial and residential consumers will continue to choose gas over electric. Unless there is a national carbon tax, this policy would be extremely difficult to adopt. Switching to electric heat supported by renewable generating sources today is the equivalent of self-imposing a carbon tax.

Montgomery County Climate Action Plan initiatives to achieve plan goal and our concerns:

1. Requiring commercial building owners to replace fossil fuel equipment with electric options before a building is sold, leases are renewed, a new tenant occupies a space, or when owners undertake major renovations. ***The plan provides no details regarding the total cost of this program or how the county might share the cost with the owners.***
2. Requiring residential building owners to replace fossil fuel equipment with electric options before a building is sold, or when owners undertake major renovations. ***The plan provides no details regarding the total cost of this program or how the county might share the cost with the owners.***
3. Expanding the Building Energy Benchmarking Law to include large multifamily apartments and a performance requirement on all buildings. ***The plan provides no details regarding the total cost of this program or how the county might share the cost with the owners.***
4. Incentives for electrifying existing buildings. ***This is a reasonable program but again the plan provides no details regarding the total cost of this program or how the county might share the cost with the owners.***
5. Requiring all new buildings to be all electric. ***This may be possible with the help of a county incentive program outlined below but again the plan provides no details regarding the total cost of this program or how the county might share the cost with the owners.***
6. Ban natural gas in new construction. ***The ban will increase the cost of heating new buildings and may decrease economic activity within the county.***
7. Net zero energy building code for new construction. We agree that a net zero energy building code is an important goal. ***However, the draft plan does not provide a glide path to direct how the county will get there from where the county is currently. The draft plan does not discuss the cost of achieving this goal. While it may be cheaper in the long run to build a net zero building, most business decisions are made in the short-run. Therefore, as we recommend below, it is better to start with incentives and a steady movement towards that goal than to require immediate compliance.***

Alternative recommendation:

Adopt the proposed Montgomery County Climate Action Plan requirement for all electric homes and buildings for ***new construction only***, and provide incentives to help owners who wish to make the transformation to electric heat on a ***voluntary basis***.

1. The County can provide grants and loans to help with the transformation to electric heat.
 - a. The grant should be an inverse function of buyers or owners' income relative to the county average. ***That is the lower the individual's income, the higher the percentage of the purchase price is a grant.***
 - b. ***The size of the grant should be tied to the energy efficiency of the replacement technology.***
For example, the grant should be larger for a geo-thermal heat pump than for a standard more efficient unit. Tying the grant to the efficiency of the unit was part of most utility programs in the 1990s.

2. The portion of the cost that is not covered by the grant should be eligible for a **low-interest loan from the county green bank** – it must be remembered that many Americans did not have refrigerators until the 1930's when New Deal loan programs allowed the price of the refrigerator to be included in the new 30 mortgages.

3. The **green bank's ability to loan should be dramatically increased** by the county selling economic development bonds and depositing the receipts from the bonds into the green bank.