

**Renewable Energy Development and Siting Task Force**  
**Nov. 15, 2019**  
**11:45 a.m. - 4:30 p.m.**

**Minutes**

- Wye Mills Solar, Queen Anne's County
  - Wye Mills Solar Project, with a capacity of 13.6 megawatts (MW), serves Johns Hopkins Medicine's East Baltimore Campus. The solar installation features more than 40,000 solar panels across a 97-acre plot of land.*
  - Tesla gave an overview of their solar facility at Wye Mills Solar and members asked questions
  - It was noted that virtual net metering is 13.6MW, so the facility generates 21 million KW-hours.
  - The solar facility powers Johns Hopkins, and provides credits towards their bill.
  - The panels are tilt access, and are rated for up to 50mph winds.
  - Stephen Schatz asked what dictates the height off of the ground.
    - Tesla said it depends on the weather, and they are spaced out based on the shade analysis.
  - Janet Christensen-Lewis, Maryland Farm Bureau representative was curious about the buffer. The trees were short for being planted in 2016.
    - Tesla said they collaborated with the county and based on that, they allowed the growing of native smaller trees, and some bushes. Next season they will work to address the buffer.
  - David Comis, Maryland Energy Administration (MEA) asked if the ground cover was natural.
    - Tesla said it is adjacent to a wetland, so they had to bring in dirt for certain portions. Most of the ground cover is natural. They also mentioned that there is no intention to make it pollinator friendly.
      - John Finnerty, solar energy industry representative said pollinator friendly plantings are built in now, but it probably wasn't available when Tesla had the plans approved years ago.
  - Comis asked if the steel structures go into the ground or if they're in cement.
    - It was noted that they are driven by post into the ground (minimum of ten feet) and can be removed.
  - Lewis asked about their lease.
    - Tesla explained that the lease is 20 years and it can go back to farmland, but there is an option for the owner to buy the arrays and negotiate with the University. The land does not belong to Johns Hopkins. If they are not interested in purchasing, they have 3-5 years to negotiate the contract. If they do not want to purchase, they will recycle the panels. The recycling is done in China.
      - Lewis said there's no guarantee it will go back to farmland.
        - Helen Stewart, power plant research program (PPRP) said it no longer can go back to farmland if the land is exempted from wetland permits, which is the Maryland Department of the Environment's (MDE) policy.

- Jason Dubow, Maryland Department of Planning (MDP) asked if they are going to bring in storage batteries.
  - Tesla explained that they could do that upgrade, and Tesla is working on utility grade batteries, which can store energy at night time when it's cheaper. They have had success with this in the north east, along with the Island of Oahu, which is almost completely battery powered. Several batteries can be installed in a small location.
    - PPRP said they have not had a developer do that yet.
- Schatz asked if they're involved in the community.
  - Tesla noted that they are involved on a larger scale and focus on giving to areas in need, like Puerto Rico. Tesla does not do outreach, customers typically come to them.
- Maryland Environmental Service (MES) Headquarters, Anne Arundel County
 

*At Maryland Environmental Service headquarters in Millersville, Maryland, a 600 kilowatt (KW) solar array over parking lots generates renewable energy on the site.*

  - MES gave an overview of their solar canopies and solar field.
  - The ground mounted system was installed in late 2008. The term of the purchase power agreement (PPA) is 15 years. The parking array was installed in 2016, and the term of that PPA is 15 years.
  - There are 1,488 panels in the solar field, and seven canopies (930 solar modules), along with one dual charging station.
  - Roy McGrath, Director of MES asked if there's changes on runoff regarding carport solar.
    - His staff explained how runoff is managed, like ensuring the gutters are placed in the right direction.
  - In May 2018, MES added a beehive to further help in the process of pollination. In June 2018, MES created two planting beds to accommodate native plantings, known as pollination areas. In Sept., they replaced existing turf areas within the confines of the solar field with native and naturalized clover habitat.
  - Stewart asked if they would ever consider batteries.
    - MES said they would consider it, but would need to look at the economics. It has not yet come up.
  - Dubow asked what percent of the parking lot is covered with solar.
    - MES said about 75% of the parking lot is solar.
  - Stewart asked how durable the panels are, and what happens when it snows.
    - MES explained that they are very durable. Maintenance from Constellation monitors regularly, and the snow typically melts quickly on the black panels.
  - Comis asked if there is a standby fee.
    - MES said no, they pay off the grid for whatever is not generated from solar.
  - Finnerty asked if there is a certain type of vehicle that cannot or should not go through the solar covered parking area to avoid damage.
    - Staff said the maximum height is 12 feet, which is not affected by MES' own fleet vehicles.
  - Lewis asked if they would consider placing more solar to get to 100%.
    - Director McGrath noted that they are in the process of extending their building, where they envision adding additional canopies.

- Annapolis Solar Park, Anne Arundel County
  - The Annapolis Solar Park (ASP) has a production capacity of 18MW of electricity from the 55,000 solar panels on the 80-acre closed Annapolis Landfill. Power purchasing agreements with the City of Annapolis, Anne Arundel County, and the Anne Arundel County Board of Education support the project.*
  - The Annapolis Solar Park gave an overview of their facility.
  - The landfill is capped, not lined. The property is 300 acres, which is owned by the City of Annapolis. There are seven plants - five 2MW and two 1MW.
  - MDE was a critical component of the project.
  - There are 52,000 panels, and trees are not allowed to grow on the capped landfill. ASP takes ground sampling twice a year along with gas collection samplings on a quarterly basis.
  - Comis asked if they will use methane.
    - ASP said no, just flare gas because it is not a constant, steady flow. There is not sufficient energy, as it's decreasing.
  - Snook asked if they have a lot of fluctuations on panels.
    - ASP noted that movement or settling is very minor. The plant has been operational since Sept. 2018. There are concrete supports because they cannot penetrate the cap.
  - Comis asked if they track the wind speed, direction and temperature.
    - It was explained that they are mostly interested in ambient temperature to relay the panel temperature. The panels have thermometers.
  - Snook asked if they can tell which panels are not producing, and replace them when needed.
    - ASP said yes, each array that goes into the combined box is monitored.
  - Lewis asked what the capacity of the panels are.
    - The capacity is about 345 each. Each array and string has 28 panels. It is a 1,500 volt system.
  - Schatz asked if they specialize in building on top of landfills.
    - ASP noted that it is a unique challenge. It is the first one they have completed on top of a landfill, and the first 1.5KW plant. It is currently the largest in the U.S.
  - ASP said they have not seen a lack of wildlife. A lot of birds, bees, and other wildlife come in and out often.
  - A challenge was the slopes. 5% was the limit, so the placement cannot be too steep. Not all of the landfill is used due to steeper slopes.
  - David Tancabel, Director of the power plant research program (PPRP) at the Maryland Department of Natural Resources (DNR) asked why they split it up into give-six groups.
    - ASP said to give different opportunities to different entities. All seven are net metered.
  - Finnerty asked if the wiring feeding into inverters are all on the surface.
    - ASP answered yes.
  - Schatz asked if there are issues with them being so low to the ground.
    - ASP noted that they have not had issues.
  - Stewart asked if they need a certain ground cover since it's a landfill.
    - ASP said yes, since it is eroding.
  - Comis asked if there were lessons learned from building on a landfill.
    - They explained that if you have flares, make sure you have the space to maintain them. They have a seven foot clearance around each one, which takes away

from the amount of space for panels. They also mentioned to make sure you negotiate mowing beforehand.

- Dubow asked if it was hard to find offtakers for the energy.
  - ASP said they had some challenges, but the incentives were there. It was a strange concept to some people.
- Schatz asked about the importance of having the city or county be their client.
  - It was explained that it is a 30 year agreement.
- Stewart asked what happens at the end of the life of the panels. Do they decommission the plant, revamp or postpone the economic life of the plant.
  - ASP said it is not a very expensive plant in terms of maintenance. At the end they can decide to extend the life or not. They return the land to the same condition they arrived in.
- Lewis asked how they dispose of the panels.
  - They said they recycle the photovoltaic panels and then need to find an industry or solution for the next step, which is a problem for the industry as a whole.
- ASP has not yet looked into battery storage.

#### **Attendees**

- Abigail Peryea, MEA
- Allison Cordell, Governor 's Office
- Billy Bishoff, Maryland Farm Bureau representative
- Bob Sadzinski, PPRP, DNR
- Dan Hurley, Public Service Commission (PSC)
- David Comis, MEA
- David Tancabel, PPRP, DNR
- Greg Snook, Chair
- Hannah Schaeffer, Governor's Office
- Helen Stewart, PPRP, DNR
- Janet Christensen-Lewis, Maryland Farm Bureau representative
- Jason Dubow, MDP
- Michael Richard, PSC
- John Finnerty, Solar energy industry representative
- Nimisha Sharma, MDOT
- Roger Austin, PSC
- Roy McGrath, MES
- Stephen Schatz, Governor's Office
- Terry McGean, MML representative