Metropolitan Washington
Council of Governments

Metropolitan Washington Regional Schools Roundtable on Energy
Meeting Summary: November 27, 2018

Attendees:
*Indicates participation by phone
Nathaniel Allen, US DOE
Karen Anderson, Montgomery County Public Schools*
Richard Benjamin, Montgomery County Public Schools
Katie Bergfeld, DOEE
Laura Johnson Collard, MAEOE*
Ira Dorfman, Greater Washington Region Clean Cities Coalition
Bill Eger, City of Alexandria
Ellen Eggerton, City of Alexandria
Gary Graff, Fairfax County Public Schools*
Caterina Hatcher, EnergyStar
Andrew Held, DOEE
Jeanne Jabara, Prince William County Schools
Richard Jackson, Alexandria City Public Schools
Elizabeth Law, Frederick County Sustainability Commission*
Cathy Lin, Arlington Public Schools*
John Lord, Loudoun County Public Schools
Reilly Loveland, New Buildings Institute*
Crystal McDonald, US DOE
Kevin Milsted, Prince William County
Justin Moss, Fairfax County Public Schools*
Elizabeth Peterson, Frederick County Sustainability Commission*
Shela Plank, Montgomery County Public Schools
Bill Steigmann, Frederick County Sustainability Commission*
Tim Stevens, Sierra Club
Susan Stillman, Town of Vienna
Chris Taylor, Pepco
Cahli Thomas, DOEE
Jeet Viswanathan, Alexandria City Public Schools
Debra Yap, Alexandria City Public Schools*

COG Staff:
Sulaiman Almaroof, COG DEP
Leah Boggs, COG DEP
Tim Masters, COG DEP

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1. **WELCOME, OPENING REMARKS AND PURPOSE**
   Leah Boggs, COG DEP

Leah Boggs called the meeting to order. The purpose of this meeting is to see where schools fit in within COG's climate and energy planning activities, as it has not been addressed in detail previously, and also to see what COG's role is in supporting schools achieve energy efficiency and other environmental goals they may have.

2. **WHAT'S GOING ON!**

Attendees introduced themselves and addressed three questions regarding schools that were posed by COG staff with regard to the built environment, energy benchmarking, facilities management, and energy/renewable energy strategic planning: 1) What's working? 2) What's not working? 3) What are your needs?

Montgomery County Public Schools (MCPS) has their School Energy and Recycling Team (SERT) program promoting energy conservation in schools, as well as recycling and system-wide environmental efforts. A lot is working. What needs improvement is the communication aspect of maintaining buildings and equipment. Tracking down issues is difficult even with energy benchmarking data that they regularly review. Montgomery County's schools are state-funded. The County requires all of their commercial buildings to use Energy Star's Portfolio Manager and benchmark their buildings. The schools have chosen to do this too.
The Greater Washington Clean Cities Coalition has worked with school districts, focusing on transportation – promoting alternative fuel sources for school buses and electric school buses. The other area they work on is infrastructure development for electric vehicles.
Prince William County Public Schools have an energy management program that provides energy education. They also have a sustainability program, but this is not going as well as the energy management program. The schools need capital for project improvements. There are a variety of buildings that require more energy efficient equipment.
Fairfax County Public Schools has had much success with their energy efficiency and sustainable building design projects/initiatives. Hoping to deploy renewable energy systems in County schools. There is a great need for staff training on energy issues.
Pepco actively works with school districts with regard to renewable energy system installations and energy benchmarking.
DOEE does regulatory work, but also have education and outreach programs on energy. They help track energy use in the District of Columbia Public Schools. DOEE also works on green building programs through their Urban Sustainability Administration.
Loudoun County Public Schools (LCPS) has been an EnergyStar "Partner of the Year" for 9 consecutive years. LCPS has previously worked with COG to stop other benchmarking schemes come to fruition in the region so that schools can follow the EnergyStar benchmarking protocol through Portfolio Manager, which works effectively and is free for school use. In the US, many schools have become more energy efficient, which has created greater competition to be EnergyStar certified. LCPS looks at this as a positive phenomenon and hopes to push its efficiency further and improve. There is a need to integrate school systems without animosity amongst elected officials, as there is a separation between school board members and school supervisors.
Alexandria City Public Schools is hoping to overcome the separation of school board members and school supervisors by actively working together. In Alexandria, the Environmental Action Plan has goals and targets that include energy efficiency and green building goals. This plan also applies for

Alexandria's schools. The City has had some successes regarding facilities management. There is opportunity for continued energy priority development, as well as broad sustainability goal development. A challenge is finding the necessary funding to make improvements, and this may be an opportunity for COG to assist with external funding opportunities. Energy data down to the building scale is not available, but this may be a focus in the future. The work that the City is doing is focused on education and communication with staff to make goals and targets come to fruition. In addition to the Environmental Action Plan update, the City is updating its Green Building Policy and schools are being included in this process.
Arlington County's Community Energy Plan includes their public schools, which is not the case with many other Virginia jurisdictions.
Falls Church City Public Schools is incorporating best practices into their schools.
EnergyStar is developing strategies regarding beneficial electrification, distributed generation, and resiliency.

School governance plays a key role in schools' ability to take action and attract funding. In Virginia, school board members and school supervisors are separate. In Maryland, there is not the same separation. In Montgomery County, for instance, local government operates within the school systems, schools receive funding from County, but schools act independently to some extent.

3. TARGET DISCUSSION 1: ENERGY BENCHMARKING AND STRATEGIC PLANNING

Speakers from US DOE Zero Energy Schools Accelerator

Crystal McDonald - Energy Management Planning and Benchmarking
US DOE's Zero Energy Schools Accelerator engages with stakeholders to assemble best practices that can be shared across the country to help others develop and implement their own energy programs. Benchmarking is the first step for schools. Establishing a baseline from which to measure progress is crucial. For the Better Buildings Challenge, DOE encourages stakeholders to use Energy Star's Portfolio Manager to benchmark energy use, as it is free and available to everyone.

Once schools begin to realize their energy use profiles, they become aware of challenges and opportunities to be addressed. DOE has a lot of technical resources for stakeholders to take action once these challenges/opportunities are identified. The Better Buildings Solution Center is a resource for finding solutions. Partners are asked to identify any specific barriers they may face and record how those barriers are overcome so that others can replicate solutions to similar problems. DOE also has technologies offices and 17 labs with technical experts that can address any issues related to the built environment. DOE can connect schools to these resources. Much of this information is on the website as well. Additionally, DOE's State and Local Solution Center addresses issues like program design, energy planning, and energy project financing. DOE also looks to partner schools with local and state governments for a more centralized source of technical expertise. Schools can be designated emergency shelters, which also calls for resiliency issues to be addressed. DOE is working with some schools to increase resiliency.

Discussion:

- LCPS has emergency generation capacity that can only cover refrigeration and some lighting. They are not equipped to be shelters. Dominion Energy and NOVEC have hospitals, public safety centers and schools as priority reconnects. However, the schools are not prepared for instantaneous use in case of an emergency. Others are in the same situation as LCPS.
- ACPS use DOE's resources and their programs. Energy efficiency is a secondary management concern, but the resources that school energy managers have are very useful.

- All PWCPS schools built since 2010 are LEED Silver. One of the problems is that population is growing rapidly. They use EnergyCAP to benchmark energy use and inform decision-making. Another challenge is that there is extensive after-school usage of buildings. Battery storage is another piece of this discussion, especially with reference to backup generation. Alternative fuels are also an option. Often cost becomes the main barrier.
- DOE sees an opportunity for school districts to work with alternative fuel providers. Their Alternative Fuels Data Center has a lot of information on this with regard to schools.
- DOE's Building Energy Asset Score program provides a tool for assessing the physical and structural energy efficiency of buildings. The tool also provides energy efficiency upgrade opportunities. Another DOE energy management tool to take note of: VOLTTRON. Other energy management tools mentioned by jurisdictions include Senseware, ECAM, and Energy Star's Portfolio Manager, which has an account sharing feature. Energy Star has resources specifically for schools that help identify opportunities to lower energy consumption.
- MCPS download weekly energy data from utilities and compare that across a 5-year average to see changes in energy consumption. This is used to identify potential energy and cost savings, and to incentivize behavior change.
- Currently, most schools do not have dashboards from which to see energy consumption. This could be a useful tool to engage school staff and students on energy efficiency issues. FCPS is the exception – they communicate energy data down to that level.
- In DC, energy data is published for all public buildings including schools. The public can view energy consumption trends, as well as costs and carbon emissions on the Energy Benchmarking DC website. DC passed legislation to do this. DC's code updates will require any new construction projects to be net zero energy buildings after 2026.
- Energy Star Treasure Hunts are a great way for students to get involved and find energy and cost savings.
- Some Virginia schools have energy budgets that make up less than 1 percent of the entire school budget. Thus, relatively little thought is given to energy management under such circumstances. However, energy budgets nationwide are generally more significant than this.

Nate Allen - Advancing Energy Efficiency Improvements in Schools
In 2014, NREL did a technical feasibility study on net zero energy buildings around the US. The report found that it is feasible to build these projects. There are a few districts doing this now with goal being to balance energy efficiency with on-site renewable energy. DOE continues to produce resources related to achieving net zero buildings.

DOE's Better Building Challenge has about 12 different accelerators that are targeted, short-term efforts, one of which deals with schools. The goal of the accelerator is to identify barriers to net zero energy design. The resources provided by DOE's Better Buildings Solution Center are free and provide excellent guidance for implementing measures to get schools to net zero energy. The Zero Energy Schools Accelerator is currently focusing on the role of energy and sustainability managers in the construction process that would allow them to engage with the design team and be able to coordinate energy management to meet sustainability goals – they are finalizing a roadmap for this at the moment and it will be published on the Zero Energy Buildings Resource Hub.

Through a carefully orchestrated and integrated design process, net zero energy buildings and net zero energy ready buildings do not necessarily cost more than the average building. Usually, the costs are higher when more people are involved in the design process, but often these costs are mitigated through savings during project development. There is a need for more sophisticated legal help. DOE is trying to compile the best examples of procurement language incorporating building energy goals. A report will be published on this in the near future.

4. TARGET DISCUSSION 2: LINKING ENERGY BENCHMARKING AND STRATEGIC PLANNING TO CO-BENEFITS

Reilly Loveland, New Buildings Institute
The New Buildings Institute advocates for renewable energy and net zero carbon buildings. Growth in the market of net zero energy buildings has grown dramatically in the last few years. Schools are leading in this regard. Students and staff benefit across all aspects with zero energy schools. There have been plenty of studies about how more daylight or better ventilation makes building users healthier and more productive.

Schools offer opportunities for education and energy benchmarking can play a significant role in this. The Garden Grove Unified School District in California decided to invest in zero energy. Their science classes use the school's energy benchmarking data to make cost effective changes to the school through data analysis. They harnessed student progress to drive the process of achieving net zero energy. Another example is in Kentucky. Lafayette County Public Schools has a very robust energy curriculum that they use to benchmark energy data and do energy audits with students. This has resulted in achieving net zero energy or net zero energy ready schools. Their programs and data are publicly available.

Crystal McDonald, US DOE Zero Energy Schools Accelerator Program
DOE's resources for STEM activities are now under the umbrella of STEM Rising. There are examples of student and staff engagement. There are student green teams. The Los Angeles School District has a "Heroes to Zero" program, which has had a big impact on their energy use and energy budget. DOE has plenty of resources regarding student engagement and incentive programs. The Aurora City School District has created a batching program where the students have to participate in certain energy management activities to build skills and earn digital badges. These digital badges can contribute to financial aid for those students. On the workforce side, DOE has many training opportunities (webinars, labs, etc.) to educate staff. Better Buildings has a workforce development program focused on different certifications in the energy space.

Discussion:

- LCPS can invite the support staff, including energy managers, to work with students periodically at the leisure of instructional staff. It is not acceptable for support staff to invite themselves to go work with students. They are invited often, but it is not acceptable to push this from the support staff side.
- Virginia's Department of Education recently approved an environmental science course (previously there has not been one). They have put an energy benchmarking and auditing portion into the curriculum. Hopefully, there will be more engagement with the students moving forward.
- Energy Star has a college course that provides the opportunity for students to do energy benchmarking in schools. This can be a win-win for the school and the college student.

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5. CLOSING DISCUSSION: WHAT ARE THE RESOURCES REGIONAL SCHOOLS NEED TO IMPLEMENT AND ADVANCE ENERGY INITIATIVES?

COG has supported one or two school efforts in the past. For example, COG helped the City of Falls Church secure a geothermal power grant for one of their high schools. They also provide cooperative purchasing opportunities. COG has laid out the region's Climate and Energy Goals (GHG emissions reduction goals include 10% below BAU by 2012 (back down to 2005 levels), 20% below the 2005 levels by 2020, and 80 % below 2005 levels by 2050.). This includes transportation goals, energy consumption goals, and built environment goals. Some School Boards are more comfortable embracing these issues than others. Finding overlap with financial incentives is important.

School Boards are not members of COG, which presents some challenges to school leadership. Meeting regularly could be done, but it should go through the School Boards and should have the support of school leadership. Getting long term buy-in from School Boards is probably the best approach. In the interim, attendees would like to meet again in the spring to discuss next steps.

COG's support can be useful to many school districts. One thing COG could do is help schools understand and get involved with PPAs in a school context and how they could take advantage of these types of financial opportunities. COG is in the unique position to help drive net zero throughout the region, as it is a place where all these local communities come together and work together.