

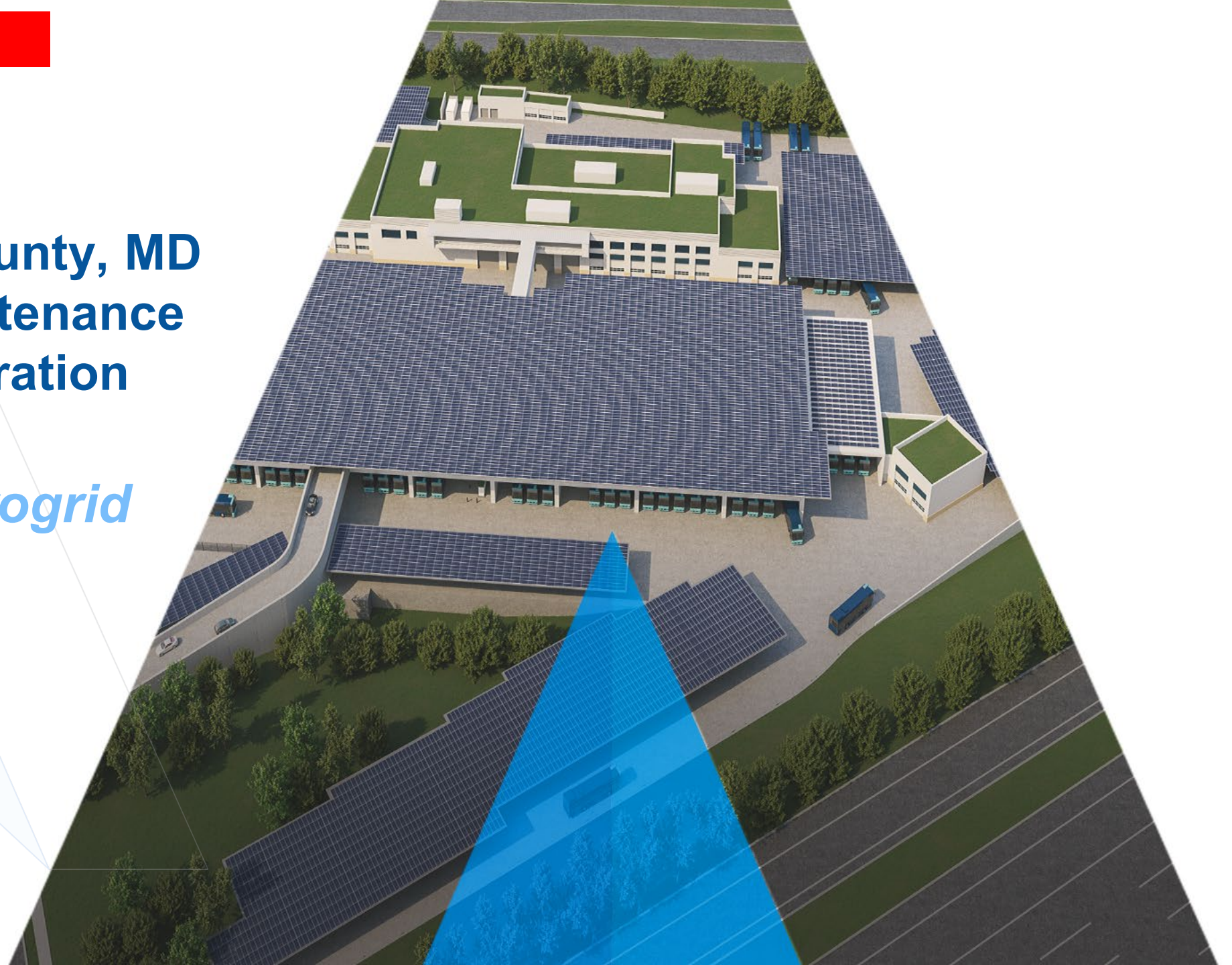
Embargoed: May 18, 2023

Montgomery County, MD Equipment Maintenance and Transit Operation Center (EMTOC)

*Integrated Microgrid
Solution*



AlphaStruxure



““

This project represents a significant milestone in our ongoing efforts to achieve our ambitious climate action. Of particular excitement is the integration of green hydrogen production, powered by the microgrid, highlighting our commitment to pioneering cutting-edge renewable solutions and leading by example when it comes to sustainable, resilient transportation.”



Marc Elrich
County Executive
Montgomery County, MD



David Dise
Director
Montgomery County, Department of General Services

Jamie Cooke
Deputy Director & COO
Montgomery County, Department of General Services

Calvin Jones
Division Chief
Montgomery County, Department of General Services

““

“Once built, the EMTOC microgrid will be the gold standard for resilient, sustainable public transit. This project also further establishes Montgomery County, MD, as the nation’s leading municipality when it comes to embracing the transit infrastructure of tomorrow.”



AlphaStruxure

Juan Macias
Chief Executive Officer, AlphaStruxure

““

AlphaStruxure and Montgomery County are once again redefining the benchmarks for sustainable and resilient transit infrastructure. Once completed, this groundbreaking microgrid will stand unparalleled across the nation, representing the County's commitment to innovation and progress.”



Schneider
Electric

Annette Clayton
Chief Executive Officer
Schneider Electric North America

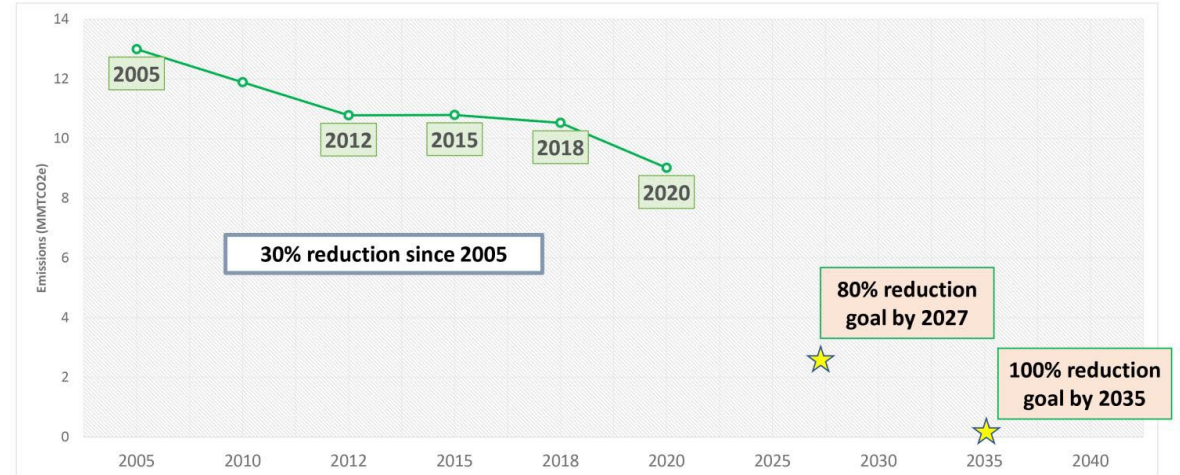
Montgomery County's Climate Action Plan

Net zero carbon emissions by 2035



- The County's Climate Action Plan establishes the goal to **cut greenhouse gas (GHG) emissions 80% by 2027 and 100% by 2035**.
- **Between 2005 and 2020**, the County's measured community wide GHG emissions **decreased by 30 percent**.
- In 2020, residential and commercial energy consumption accounted for 49% of measured emissions and **transportation-related emissions accounted for 40%**.
- Statewide, Maryland is working towards a **50 percent zero-emission bus fleet by 2030**.
- Montgomery County's **Department of General Services**, the **Department of Transportation**, and the **Office of Energy and Sustainability** are spearheading the ambitious drive towards achieving **net zero emissions in transportation by 2035** by leading the transition of the county's transit fleet and depot infrastructure.

Montgomery County's Measured GHG Emissions



Source: Metropolitan Washington Council of Governments (MWCOC) Montgomery County GHG Inventory

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Montgomery County & AlphaStruxure

A long-term partnership to achieve the County's sustainability and resiliency targets



- Montgomery County's commitment to infrastructure that's resilient to climate change became a higher priority after the 2012 derecho when many residents lost power.
- **In 2018**, Montgomery County partnered with Schneider Electric to create two Energy as a Service (EaaS) microgrids delivering resilient and sustainable energy for the Public Safety Headquarters and Correction Facility. Represents one of the first **EaaS microgrid projects globally**, and was **awarded PEER Platinum Certification** for excellence in design and operations.
- Through a public RFP **in 2020**, the County awarded AlphaStruxure, a joint venture of Schneider Electric and Carlyle, an EaaS microgrid project to finance, design, build, own, operate, and maintain the Brookville Smart Energy Bus Depot Microgrid.
- Today's EMTOC announcement follows the completion of the **Brookville Smart Energy Bus Depot—the County's first fully constructed microgrid-powered bus depot**, led by AlphaStruxure.
- EMTOC is the **second of three bus depots** in the county, only transit depot rated by the state of Maryland as critical for emergency response activities for Montgomery County.
- EMTOC and Brookville projects are aligned with the County's priorities to **reduce emissions from public transportation** while **enhancing the resilience** of the community and infrastructure assets.



Federal, state and local officials join with executives from AlphaStruxure and Schneider Electric and Carlyle for the "first plug-in" of an EV bus at Brookville ribbon cutting



Brookville Smart Energy Bus Depot

EMTOC: The largest renewable transit bus depot in the nation

First on the East Coast to Feature On-Site Green Hydrogen Production



Integrated, Resilient Energy System powering a mixed fleet



EMTOC Microgrid Solution Overview:

- County study demonstrated the need for a transit solution with **advanced range capabilities**. **Hydrogen Fuel Cell buses** have a range of operational characteristics that fulfill county transit requirements.
- By embracing hydrogen fuel technology, the County **will enhance its equitable Bus Rapid Transit (BRT) network** and create new career and training opportunities for underserved communities.
- With an on-site electrolyzer, solar, and battery energy storage, EMTOC will be **the first transit bus depot on the East Coast to feature green hydrogen production**.
- The microgrid will be capable of **powering a mixed fleet** of battery, and fuel cell electric buses, as well as EMTOC's five buildings.
- In the event of an extended grid or power outage, EMTOC will **be able to run indefinitely in "island mode"** using solar power and battery storage
- Reduces emissions by **4,000 metric tons of CO2 per year** while delivering resilience during climate events and power outages.
- The microgrid is delivered **without capital expenditures** through an **Energy as a Service agreement** ensuring predictable operating expenses and guaranteed performance



7MW Microgrid with 4.5 MW Charging Capacity

Solar, BESS, will power an on-site electrolyzer for green hydrogen production



Microgrid scope

- 5 MW Solar Photovoltaics
- 2 MW/7.35 MWh battery energy storage
- 4.5 MW charging capacity
- 24/7 Monitoring and Operations through AlphaStruxure's Network Operations Center
- AlphaStruxure Integrate digital platform manages microgrid performance and operations in a cyber-secure environment

IntegrateTM
by AlphaStruxure

Powered by Schneider Electric's
EcoStruxure[™]

Expected to begin construction Q4 2023 with a planned completion date of Q1 2025.

CASE STUDY

Brookville Smart Energy Bus Depot

Montgomery County, MD

Challenge:

- Transition **70 buses** from diesel to electric
- Contribute to the County's goal to reach **net-zero emissions by 2035**
- Maximize on-site renewable energy
- Ensure uninterrupted transit bus services under any power circumstances

Solution:

- Integrated **6.5 MW Microgrid** with on-site generation, electric bus charging, and multiple energy sources
- Solar canopies and battery energy storage
- Delivered with no upfront capital investment via the Energy as a Service business model
- Long-term partner to design, build, own, and operate the on-site infrastructure



Results

70 electric buses
will eliminate:

78K+ tons

of carbon dioxide over 12 years of
driving over 10K miles per day

160K+ tons

of greenhouse gas emissions
(GHGs) over 25 years



100% Operating Capacity
in the event of extreme weather
events or power outages



Operational flexibility with full
control over dispatch and bus routing



Long-term cost predictability
of energy supply

**Avoid utility tariffs and
demand charges**

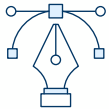


AlphaStruxure

AlphaStruxure

AlphaStruxure enables organizations to achieve ambitious, tailored energy transformations — without the CapEx or complexity.

Design



We design and engineer tailored energy infrastructure to achieve your goals for greenhouse gas reduction, resilience, reliability, and cost stability.

Finance



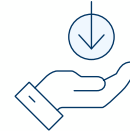
Direct access to strategic capital from Carlyle removes funding roadblocks and reduces financial risk to accelerate your energy transformation.

Build



Partnering with industry experts, we manage the construction of your energy infrastructure to ensure an efficient, safe, and streamlined build process.

Own



We are accountable for the energy infrastructure across its lifecycle, and therefore hold a long-term interest in your success

Operate



Operation of assets through the **Integrate** digital platform and Microgrid Network Operating Center (NOC) to deliver long-term outcomes.

Maintain



As experts in the evolving technology landscape, we deliver zero CapEx asset optimization and upgrades.

Unique joint-venture combines Carlyle's capital backing and investing experience with Schneider Electric's 185+ year legacy and its track record as the #1 microgrid technology provider, with over 350 successful projects across North America.

CARLYLE

Schneider
Electric

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AlphaStruxure

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