



The trusted partner in energy transformation

# The Opportunity for Microgrids in Mobility



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AlphaStruxure is a joint venture between:



# The utility grid may not be ready for EVs.

The U.S. grid is already under **immense strain** as it needs to **double capacity in 25 years** while coping with extreme weather.

Transportation electrification will **challenge the grid further** as it places large-scale loads on the grid.

Transportation **must be urgently transformed**. To do so, we may need to think outside the grid.



- Normal Risk:** low likelihood of electricity supply shortfall
- Elevated Risk:** shortfalls may occur in extreme conditions
- High Risk:** shortfalls may occur at normal peak conditions

**2x**

More weather-induced power outages from 2014 – 2023 than in previous decade

**19.5x**

Increase in U.S. avg. total annual EV load, from 24,000 GWh in 2023 to 468,000 GWh by 2040 (est.)

**#1**

Largest source of U.S. GHG emissions is transportation

**22.8 M**

Medium- and heavy-duty vehicles on the road in the U.S.



# Need clean power, fast? You may need a microgrid.

## Solves 5 Challenges:

### Availability & Reliability



**Up to 100%**

Power needs met with on-site energy resources

### Lead Times



**As low as 1 year**

From a signed contract to an operational facility

### Energy Costs



**Predictable**

Energy costs are defined in long-term contract

### Emissions



**Zero-carbon**

Achievable



# Case Study: Brookville Bus Depot

Brookville Bus Depot — Montgomery County, MD



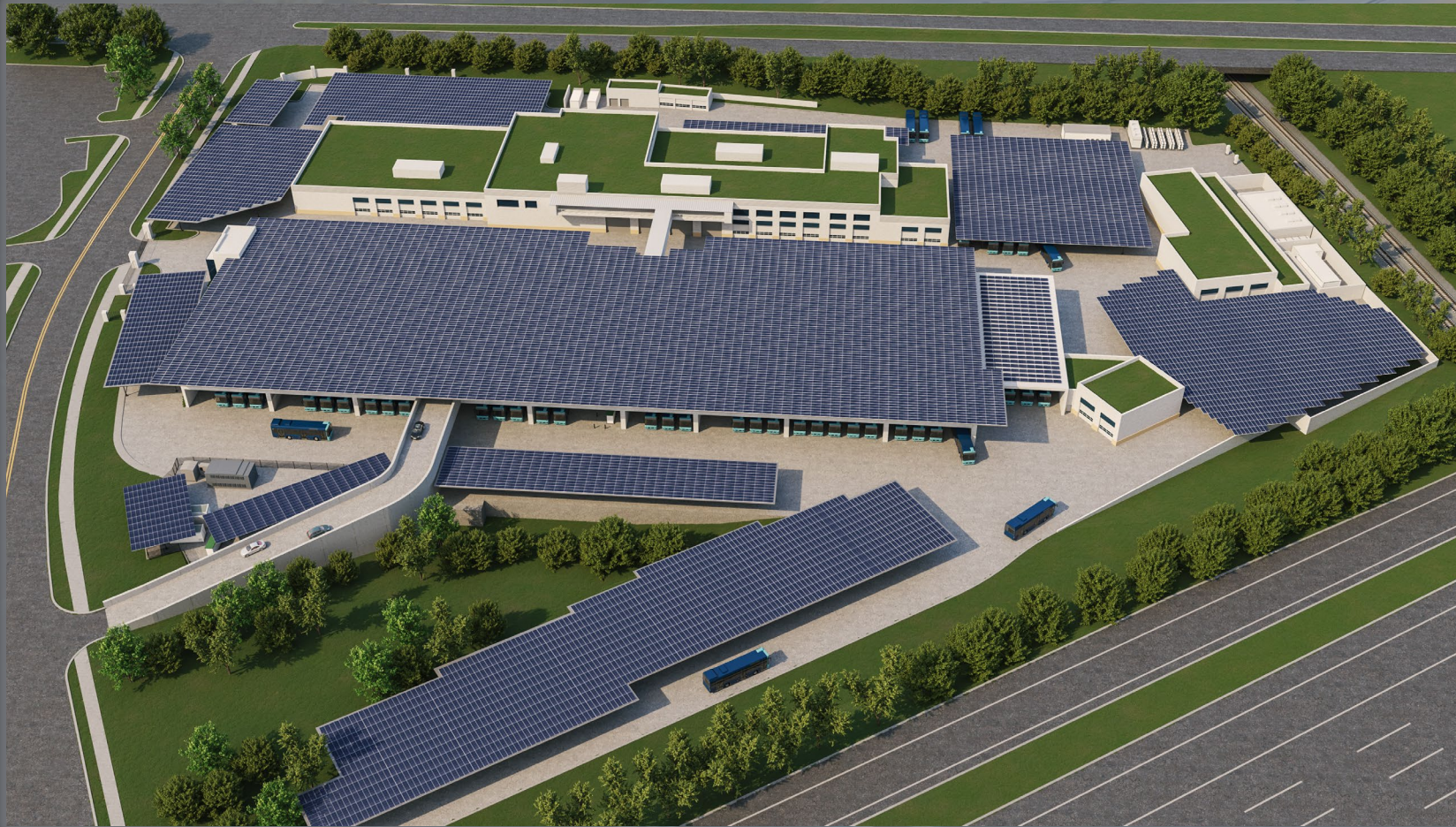
- **6.5 MW microgrid** featuring solar, battery storage, and generation that can charge up to 100 e-buses, **avoiding 78,000 tons of emissions**
- **Up to 4.14 MW** of EV charging capacity: (18) 180 kW chargers, (2) 450 kW pantograph chargers
- Delivers **resilience** to communities who depend on public transportation

***The largest operating self-sustaining transit depot in the U.S.***



# Case Study: EMTOC Bus Depot

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



- **7 MW microgrid** capable of powering 200 mixed-fleet vehicles by 2035, with **81% hydrogen buses** and **19% battery electric buses**
- **Up to 2.52 MW** of EV charging capacity: (10) 180 kW chargers, (2) 360 kW pantograph chargers
- One of the first bus depots to produce hydrogen using microgrid energy rather than grid energy
- **4,000 metric ton** Scope 1 & 2 emissions reduction

***First transit microgrid on East Coast to feature on-site hydrogen production***

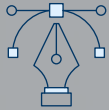


# AlphaStruxure

Our mission is to empower public- and private-sector organizations to achieve ambitious energy transformations — without the CapEx or complexity.

Our purpose is to decarbonize energy infrastructure at speed and scale.

## Design



We tailor energy infrastructure to achieve your goals.

## Finance



We eliminate upfront costs and take on financial risks.

## Build



We manage an efficient and safe build process.

## Own



We own the energy infrastructure across its lifecycle.

## Operate



We digitally monitor to maintain contracted performance levels.

## Maintain



We deliver zero CapEx asset optimization and upgrades.

Our joint venture combines Carlyle's capital backing with Schneider Electric's 185+ year legacy and its track record of over 350 successful projects across North America.

CARLYLE

Schneider  
Electric



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