



# Advanced Energy Group – 20Q3 Chicago

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# Chicago Sustainability Commitments

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Chicago has committed to:

- Convert all city Transit Authority buses to electric energy by 2040 –
  - Transportation accounts for 26% of GHG Emissions in the city
- All city buildings to be powered exclusively by renewable sources by 2035
  - C&I Buildings account for 24%

*HOW will Chicago meet these ambitious goals?*

- Focusing on Schools, School Buses and Public Transportation
  - Bigger social impact



# Why School Buses?

- Reduce Energy costs
- Optimize operational challenges
- Improve grid resiliency and management
- Focused Approach to accelerate carbon footprint offset
- Distribution of schools in cities as new Microgrid infrastructure (~660 schools)
- Solar output can generate energy beyond need of schools and buses
- Charge Public Transportation Buses
- Enhance resiliency of schools and neighborhoods during power outages, high-demand periods



## SUSTAINABLE DEVELOPMENT GOALS

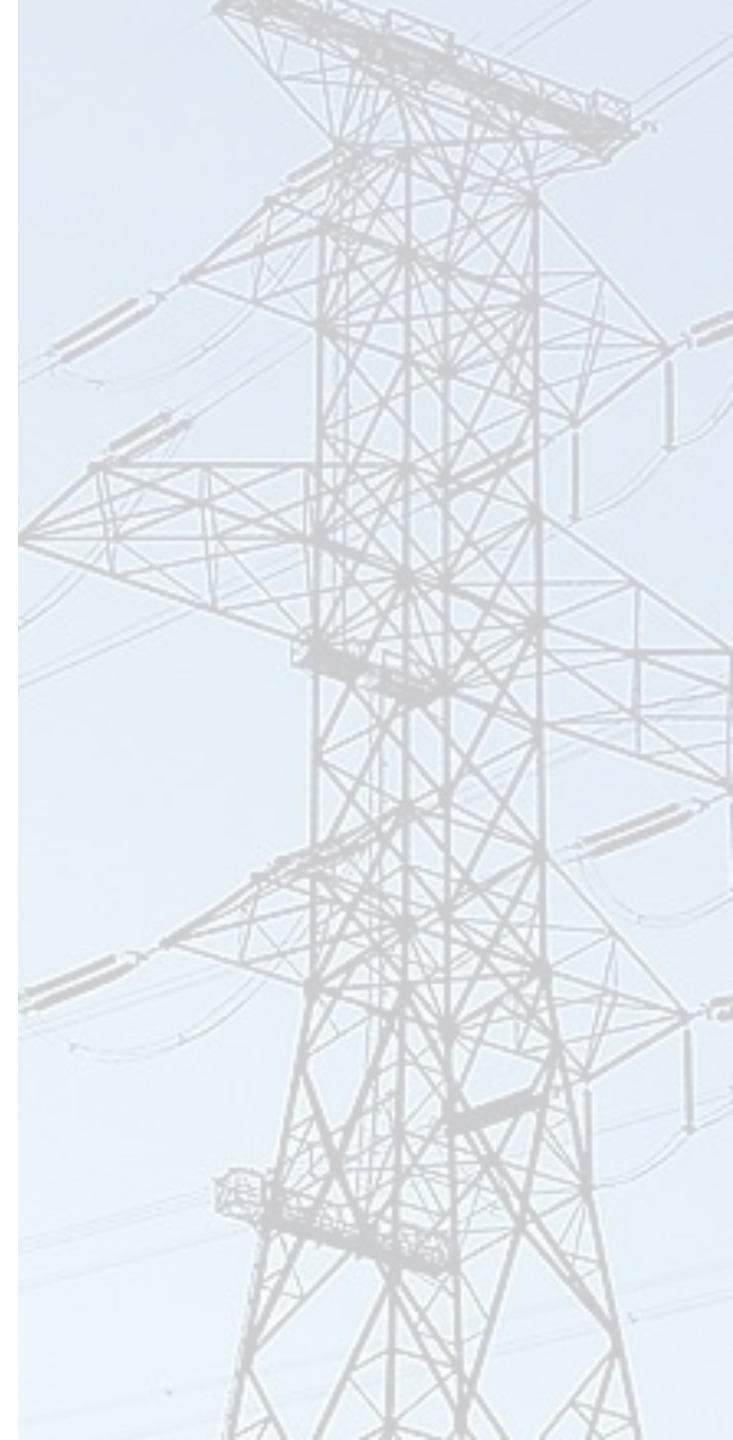


Problem: Restricted budgets prevent cities and schools from moving faster on beneficial electrification of school buses.

Consequently,

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- Less Rapid Electrification
- Managing Renewable Energy Assets (OT) will be a challenge
- Orchestration of Distributed Energy costs become prohibitive
- Fleet Management / Charging Management Logistics will impact grid operations
- **Failure to deliver on clean energy objectives**





Regarding IoT, Technology and Innovation, to achieve Chicago's 2050 Carbon & Equity goals, the most critical obstacle to overcome is *lack of proof that orchestration of technologies justifies school bus electrification now.*