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***CNYSBA Roundtable***  
***Electric School Bus Mandate***  
***Long Range Fiscal Analysis and Data Driven Decision-Making***  
***for School Boards***

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What we all need to know:

- Is it feasible?
  - How do we pay for it?
  - What questions should we be asking?
  - How do we prepare?
- By the end of the presentation, I will also answer the pre-workshop question submissions.*

# Zero-Emission Buses-Quick thoughts on the transition

What does the Zero Emission Bus Initiative mean for school districts in New York State?

**Source: ChatGPT**



The Zero Emission Bus Initiative in New York State holds several implications and benefits for school districts in the state:

**1.Improved Air Quality:** As part of the initiative, public transportation agencies are transitioning to zero-emission buses, which significantly reduces air pollution. This means cleaner air for everyone, including students and staff in school districts located in urban areas with improved air quality.

**2.Health Benefits:** Reduced exposure to harmful emissions from traditional buses can lead to better respiratory health, particularly for children who may be more susceptible to air pollution-related health issues. This can result in fewer cases of asthma and other respiratory conditions among students.

**3.Environmental Education:** School districts can use the Zero Emission Bus Initiative as an educational opportunity. They can teach students about the importance of sustainable transportation, reducing greenhouse gas emissions, and the technology behind zero-emission buses, aligning with environmental and science curriculum goals.

**4.Community Partnerships:** Collaboration with local public transportation agencies involved in the initiative can lead to shared resources and opportunities. This may include shared charging infrastructure, joint educational programs, and cost-sharing arrangements that benefit both school districts and public transportation agencies.

**5.Grants and Funding:** As part of the state's commitment to sustainable transportation, there may be grants and funding opportunities available to school districts for initiatives related to reducing emissions from school buses. This financial support can aid districts in transitioning to greener transportation options.

**6.Reduced Operating Costs:** While the initial investment in zero-emission buses can be significant, they tend to have lower operating costs compared to traditional diesel buses. Over time, school districts may experience cost savings on fuel and maintenance, which can be redirected to other educational priorities.

**7.Long-Term Sustainability:** Supporting the Zero Emission Bus Initiative aligns with broader sustainability goals and efforts to combat climate change. School districts can contribute to reducing greenhouse gas emissions and promoting environmental responsibility.

**8.Community Engagement:** School districts can engage with their communities on the topic of sustainable transportation and environmental stewardship. This engagement can foster a sense of shared commitment to reducing carbon emissions and protecting the environment.

In conclusion, the Zero Emission Bus Initiative in New York State has the potential to positively impact school districts by improving air quality, enhancing health outcomes, providing educational opportunities, fostering partnerships, offering funding possibilities, reducing operating costs, promoting sustainability, and engaging the community in environmentally responsible practices. It represents an opportunity for school districts to contribute to a cleaner and healthier environment for their students and communities.

# Zero-Emission Buses-Quick thoughts on the transition

What is the cost of the Zero Emission Bus Initiative to school districts in New York State?

**Source: ChatGPT**

The cost of the Zero Emission Bus Initiative to school districts in New York State can vary widely depending on several factors, including the size of the school district, the number of buses in their fleet, and the specific technology and infrastructure chosen for electrification. Here are some key considerations:

- 1.Initial Bus Purchase Cost:** Zero-emission buses, such as electric or hydrogen fuel cell buses, tend to have a higher upfront purchase cost compared to traditional diesel buses. School districts will need to budget for these higher acquisition expenses when transitioning to cleaner technologies.
- 2.Charging Infrastructure:** If a school district chooses electric buses, they will need to invest in charging infrastructure. The cost of installing charging stations at bus depots or schools can be significant, depending on the number of buses and the capacity of the charging equipment.
- 3.Maintenance and Training:** While zero-emission buses often have lower operating costs over their lifespan, there may be initial expenses associated with training maintenance staff to work with the new technology and ensuring they have the necessary equipment and tools for maintenance and repair.
- 4.Electricity Costs:** Electric buses require electricity to charge, which will be an ongoing operational cost. The electricity cost will depend on the local utility rates and the energy efficiency of the buses.
- 5.Grants and Funding:** It's important to note that there may be grants and funding opportunities available to school districts to help offset the upfront costs of transitioning to zero-emission buses. These grants can significantly reduce the financial burden on school districts.
- 6.Total Cost of Ownership (TCO):** School districts should consider the Total Cost of Ownership, which includes the purchase price, operating costs (fuel, maintenance, etc.), and any potential savings in operating expenses over the lifetime of the buses. Zero-emission buses may have a favorable TCO over time, despite the higher initial costs.
- 7.Resale Value:** Some zero-emission buses may have a higher resale value compared to traditional buses at the end of their life cycle, which can mitigate some of the initial costs.

It's important for school districts to conduct a detailed cost-benefit analysis and consider long-term financial planning when evaluating the adoption of zero-emission buses. While the initial investment may be higher, the environmental and health benefits, potential cost savings over time, and available grants can make the transition to cleaner transportation a financially viable and environmentally responsible choice for school districts in New York State.

# Zero-Emission Reporting Requirements

## Zero Emission Buses (ZEBs)

Annual Progress Reporting Requirement Begins in the 2024-25 School Year:

- Sufficiency of the district's electrical infrastructure to support ZEBs.
- Number Charging station and other components.
- Labor force training to date.
- Number and proportion of ZEBs purchased, leased or utilized.
- Number of ZEBs anticipated in the next two years.
- Number and Proportion of ZEBs utilized by transportation service providers.
- Number and Proportion of ZEBs anticipated to be utilized by transportation service providers in the next two years

# Zero-Emission Buses-Funding Applications

**Zero Emission Bus Update- Funding application period starts November 29<sup>th</sup>.**

Governor Kathy Hochul has just announced that the State will soon release **\$100 million of the \$4.2 billion Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022** in which **\$500 million is earmarked the transition to zero emission school buses.**

*“This announcement supports the Climate Leadership and Community Protection Act goal to reduce greenhouse gas emissions 85 percent by 2050 and Governor Hochul's 2022 State of the State initiative to require all new school buses sold in New York State be zero-emission by 2027 and all school buses on the road be zero-emission by 2035.”*

For school districts, this means that beginning in the school year 2027-28 through 2035-36 all school bus purchases must be Zero Emission Buses (ZEBs)

The announcement included the following statement:

*“...the New York State Energy Research and Development Authority (NYSERDA) released the program rules, officially launching the pre-application process through which bus manufacturers and dealers can apply to qualify for the New York School Bus Incentive Program (NYSBIP). The program rules will guide the total Bond Act allotment of \$500 million for zero-emission school buses and infrastructure. The application process to receive **funding will open on Wednesday, November 29, 2023.** To provide more information about the NYSBIP goals, guidelines, process, and timelines, ....For continued program updates, please [join our mailing list](#).*

# Zero-Emission Buses-Funding Applications

The announcement went on to say:

*Recently, Governor Hochul announced the [New York State Electric School Bus Roadmap](#) and the [Electric School Bus Guidebook](#) to help New York P-12 schools transition bus fleets to zero-emission. These resources provide school districts and bus operators with the technical assistance necessary to remove fossil fuel vehicles from service and help reduce transportation emissions with a focus on disadvantaged communities and high-need school districts. Both the Roadmap and Guidebook pinpoint critical factors and decisions that school districts and bus operators face when considering zero-emission buses. Additionally, NYSERDA and the utility providers who cover the majority of the State’s school districts will provide technical assistance to support school districts and fleet operators plan for the transition.*

The New York State Council Of School Superintendents (NYSCOSS) recently reported:

*“The EPA also announced \$500 million in rebate funding for their clean school bus program. This is the second round of this program. Here is a [one-pager](#) on the initiative.”*

# Zero-Emission Buses-Quick thoughts on the transition



**To Determine Budget Impact ...** Budget implications can include:

1. Determine the difference is the price of a Zero-Emission bus and the buses you currently purchase... start no later than the 2027-28 school year.
2. Calculate your bus replacement schedule with inflation or cost increases in mind as best you are aware of them.
3. If you pay cash for your buses now, determine how the cost of a Zero-Emission bus affect your budget.
4. If you buy more than one bus per year now, and need to continue with that trend, determine how these continued purchases, if they will now be for Zero-Emission buses, affect your annual budget and long-term budget plans and goals.
5. If you purchase buses now using Bond Anticipation Notes (BANs) renewable over 5 years, compare the cost of interest and issuance and then reissuance costs from your current bus replacement schedule to the purchase of Zero-Emission buses as state aid will be paid over 12 years. (12-years of issuing and then reissuing BANs and 12 years of Transportation Aid)
6. If you purchase buses now using Serial Bonds (SBs) compare the cost of interest and issuance costs from your current bus replacement schedule to the purchase of Zero-Emission buses. (12-year BOND and 12 years of Transportation Aid). Keep in mind the difference in issuance cost of BONDS vs BANs.
7. For school districts that partially or completely contract for busing, determine what can the school district expect for pricing over the initial five-year ramp up period and the seven-year compliance timeline?
8. What other items or factors could affect school district budgets? Training & Capital Project work at Transportation Facility.
9. What financial mechanisms are or should be in place to minimize the affect of this transition on the school district Budget?
10. What happened if the voters refuse to purchase Zero-Emissions buses or pay for a Zero-Emission Compliant Transportation Facility?



# Zero-Emission Buses - Quick thoughts on the transition



## We need a Q & A With Answers

A sample of questions in need of answers can include:

1. Is there assurance by energy companies across the state the “the Grid” will be able to provide adequate “energy” to charge all the Zero-Emission buses and Transportation Facilities on demand when needed and as needed?
2. Will there be any acceptance of late-filed transportation contracts and waiver of penalties due to administrative oversight?
3. Will there be funding for the School Bus Driver Instructor’s program by the State Education Department or NYS?
4. Will there be a temporary suspension of the retiree earnings cap to help address school staff shortages to include school bus drivers?
5. Is there sufficient state funding for “Grid” infrastructure, Transportation Facility upgrades and bus purchases considering the potential for projected state budget deficits?
6. Is there any assurance that Transportation Aid and Building provided to transition to the Zero-Emission Bus initiative will not jeopardize Foundation Aid or other Expense driven aids in the future?
7. Will Capital Project approvals at the Office of Facilities Planning be timely enough to make Building Aid be available to turn the current Transportation Facility into a Zero-Emission bus facility? (Need for Preliminary Review?)
8. With approximately 50,000 buses to replace, beginning in at least five years, over about a seven-year period, what is the anticipated rate within which vendors can produce and deliver Zero-Emission Buses?

# Zero-Emission Buses - Quick thoughts on the transition

## We need a Q & A With Answers



A sample of questions in need of answers can include:

9. Will there be any state aid or grants available for the training of staff for the repair and maintenance of the Zero-Emission buses?
10. Are there any special safety considerations needed for Zero-Emission buses (storage, fire safety or. Maintenance) (Please interface with local fire departments.)
11. Will there be changes to the Fire Code and Fire and Safety Reports to the State Education Department because of the acquisition of Zero-Emission buses? Will or could this result in increased costs: are these data and assumptions unknown?
12. What grants will be available to school districts, what is the value of those grants, what are the eligibility requirements for the grants, how often will they be available and how long will they last? (Caution: there a big difference in budget effect.)
13. Is there any assurance any type State Grants and Infrastructure improvements to the “Grid” provided to transition to Zero-Emission buses will not jeopardize Foundation Aid or other Expense driven aids in the future?
14. Is deference granted to smaller or less wealthy school districts or school districts in general, as they compete to secure Zero-Emission Buses from vendors and the ability to create infrastructure to support them or will competition between Bus Company contractors and School Districts for the buses and infrastructure components be inevitable?
15. What will be the amount of state investment is needed in the statewide “Grid” infrastructure and how long will it take?
  - Will statewide infrastructure upgrades occur simultaneously as the complete transition to Zero-Emission buses is required to occur in 2035?
  - Is it possible, that all School Districts, Bus Company contractors and the “Grid” will be ready by the 2035-36 Fiscal Year?

# Zero-Emission Buses - Quick thoughts on the transition



## We need a Q & A With Answers continued

A sample of questions in need of answers can include:

16. Notwithstanding the investment needed in statewide “Grid” infrastructure, the transition to Zero-Emission buses is purported to include state support in the form of grants, Building Aid and Transportation Aid. Has there been a study on the actual state contribution in dollars over time to fund this initiative and does the state have sufficient resources to produce that support beginning now through at least 2035-2023 and beyond as financing for these buses could continue for over a decade?
17. Will there be the formation of a statewide task force to include New York’s school transportation industry stakeholders (Suppliers, Contractors, School Districts State Associations) to guide transition to electrification to identify barriers to success, and that the distribution of state financial support is timely, efficient, effective, equitable and adequate?
18. Will there be support of the school bus dealership model to provide service and technical support to School Districts and Bus Company contractors as this innovative technology transitions into bus fleets and changes over time?
19. Will the state allow for diversified “Near-Zero” Emissions fleet where a Zero-Emission electric bus is not practical due to safety, environmental and economic factors?
20. What will be the conditions by which a waiver for school districts to delay transition to electric buses granted?
21. How will the State Education Department Office of Facilities Planning assist in the approval process and acquisition of Building Permits between now and 2035 to ensure that the almost simultaneous capital projects for facilities upgrades of over 300 School Districts and Contractors are completed in time?
22. What is the anticipated costs to all school districts? How much Transportation Aid will NYS need by at least 2035-36?
23. What is the anticipated costs in Capital Construction? How much Building Aid will NYS need by at least 2035-36?

# Zero-Emission Buses - Quick thoughts on the transition

## Capital Construction Matters



### Creating a Zero-Emission Transportation Facility:

1. What changes are required to transform the current at the transportation facility for a Zero-Emission bus fleet?
  - a. Will the current lift capacity in your bus repair and maintenance bays lift a Zero-Emission bus?
  - b. Will Storage or Maintenance bay size alterations be needed?
  - c. How much storage space for batteries will be required in Transportation Facilities?
  - d. Can or should Zero-Emission buses be stored and charged inside the Transportation Facility?
  - e. Can and or should Zero-Emission buses be stored outside at the same storage distances used by current bus fleets about the space between buses or within the Transportation Facility parameter?
2. Depending on the characteristics of each school district's transportation program, what will it cost in total project size and related financing to turn the current Transportation Facility into a Zero-Emission bus facility?
3. How long will it take to turn the current Transportation Facility into a Zero-Emission bus facility?
4. What are the anticipated issues that can arise as you plan, seek voter approval, and SED approval to turn the current Transportation Facility into a Zero-Emission bus facility? (Timing, financing costs, construct cost inflation, construction escalations and contingencies, and availability of items in the capital project, location of chargers and metering at various locations; voter rejection; SED approval time.)
5. To what degree are charging stations uniform between different bus manufacturers? What about the future?
6. If vendors are not able to provide Zero-Emission buses/chargers as needed by school districts, is there a downside to having multiple buses/chargers from different manufacturers?

# Zero-Emission Buses - Quick thoughts on the transition



## Practical Matters

Consider the following practical matters about Zero-Emission buses as the school district plans replacement schedules to begin in 2027-28 and end with a full Zero-Emission fleet in 2035-36:

1. Length of routes in topography, temperature, time, and miles
2. Road conditions and terrain to include traffic, road conditions and special conditions such as low weight threshold culvert covers bridges and roads
3. The time it takes to recharge the batteries for the next day or a return trip to the school district
4. What will be the process for charging “out of district buses” and what invoicing structure will be created to provide the invoice to recoup the cost of charging?
5. Are there additional safety or security issues with the transition to Zero-Emission buses and related infrastructure?
6. Is your local Fire Department ready for this transition?
7. **Are your voters/residents ready for this transition?**

## NYSSBA Resolutions for Consideration

- *RESOLVED, that the New York State School Boards Association supports the repeal of the law that mandates all school vehicles be zero emission vehicles*
- *RESOLVED, that the New York State School Boards Association support legislation at the state and/or federal level for a waiver for small and rural school districts from the law that mandates that all school vehicles be zero emission vehicles.*
- *RESOLVED, that the New York State School Boards Association advocate for the State to conduct feasibility studies/review regarding utilities/infrastructure, logistical, and fiscal aspects of the zero-emission school vehicle mandate, and to revise the mandate as the reviews/studies deem necessary.*

## New York State Education Department Zero Emission Bus Charging Infrastructure: State Aid Q&A

1. What aid source should be used to fund zero emission bus charging stations and associated infrastructure work?
  - Transportation Aid only. Regardless of if the charging stations and associated infrastructure work are installed as part of a larger project that would be covered by Building Aid, the charging stations, infrastructure, and the labor are explicitly covered by Transportation Aid under §3623-a(2)(f) and §3602(7)(e).
2. Transportation Aid-eligible infrastructure expenses (further clarified below) will be treated as capital expenditures and amortized over 12 years. Is that correct?
  - Yes; whether paid upfront with cash or financed, all ZEB-related capital infrastructure expenses will be amortized over 12 years. NYSED has created a ZEB Aid Estimator for planning and budgeting. [CLICK HERE!](#)

3. What are approved “charging station installation” expenses that would utilize Transportation Aid?
- Chargers (including plugs, charging pads, and/or overhead retractable cords)
  - Charger mounts and any supports for them (pedestals, pole/wall/cord-mounting hardware)
  - Software applications to manage charging, billing, access, and administration
  - Load management/microgrid/V2G controllers, software, and associated equipment
  - Ongoing service for maintenance of physical and software components
  - Trenching for the purpose of bringing wiring to the charging stations and associated parking lot patching (for expenses up to \$10,000 only)
  - Backup generators (to service bus charging only)
  - Upgrades to the power service not covered by the utility make-ready programs:
    - New or upgraded power distribution center, switchgear, switchboards, or panelboards (including fencing/covering if outdoors)
    - New or upgraded sub-metering
    - New or upgraded transformers and transformer pads (including fencing/covering if outdoors)
    - New or upgraded wiring and conduit between property line box, supply equipment, and chargers
  - Solar photovoltaic installation (to service bus charging only) and/or battery storage
  - New in ground bus lifts (when existing lifts are confirmed to have insufficient capacity for EV buses)
  - Design fees (to get a permit from OFP, stamped plans are required by a licensed design professional) including structural, civil, geotechnical assessment, as needed and permitting
  - Site acquisition (for expenses up to \$10,000 only)

4. If there is no building on site and there are related costs to support charging infrastructure, are expenses eligible for Transportation Aid?
  - Yes. There may be a need for charging to be located at a site without a building due to power source /grid restrictions or centralized site location. The bus garage is not the only location charging may occur.
  
5. Will NYSED provide Building Aid to support the construction of a small building to house said infrastructure?
  - Yes, to pay for reasonable and appropriate expenditures for the construction of the building.
  
6. Will a charging infrastructure project need to be submitted and approved by NYSED's Office of Facilities Planning?
  - Yes, any work that would otherwise require an OFP permit must still be submitted for review, approval, and permit prior to the work being bid. The Transportation Aid eligible components of the project must be submitted as a separate project number for accounting purposes. The drawings and specifications may be combined with other non-transportation aid eligible scopes of work, but a separate project number and paperwork submission is required.



## Zero Emission Buses and Vehicles:

- Key dates 2027 and 2035
- 12 Years of BANs? BONDS?
- Infrastructure?
  - Statewide
  - Local
- State Aid?
  - Building Aid?
  - Transportation Aid?
- Grants?
 

<u>\$20,000,000,000</u>	=	<u>\$20,000,000,000</u>	=	<u>\$200</u>
<u>\$500,000,000</u>		<u>\$500,000,000</u>		<u>\$5</u>

  - NYSERDA?
  - NYS \$4.2 Billion Bond Issue
- There are ~50,000 non-zero-emission buses in NYS
- Size of the replacement issue:
  - (50,000 buses X \$400,000 per bus=\$20,000,000,000)
  - Chargers and Infrastructure?
  - Availability?

# Zero-Emission Bus Mandate

What we all need to know:

- **Is it feasible?** Yes, with enough resources and time.
- **How do we pay for it?** A combination of state support (Grants, Transportation Aid, Building Aid) and Voter Approved Debt Service (BANs or Bonds) or Cash.
- **What questions should we be asking?** There are many... include professionals such as transportation and energy consultants, vendors, architects, construction managers, the internal school community and school district taxpayers in your search for an understanding of the opportunities and challenges to this initiative.

**Is there a realistic study that supports the state and local school district financial implications (costs) long-term, for infrastructure and the purchase and maintenance of ZEBs and the related facilities to accomplish the mandate within it's stated timeframe?**

- **How do we prepare?** Focus on Long-Range Financial Analysis and Planning, coupled with Professional and Community Engagement.

# Zero-Emission Bus Mandate

Pre-Session Participant Questions with the answers provided during the virtual meeting:

1. Should we be paying cash for buses?
2. What happens if voters do not approve the purchase of E-buses?
3. What is the penalty for non-compliance of the mandate?
4. What does NY intend to do about the burden on the power grid?
5. How does the cold affect battery life?
6. What kind of training will bus mechanics need?
7. Who pays for charging when a bus needs to be at away sporting events?
8. What tax base pays for the infrastructure to charge buses?
9. How is NY making sure the battery material isn't mined inhumanly?
10. How do you heat and cool the buses prior to students boarding them on cold/hot days?
11. How do bus routes with a lot of hills affect battery life?
12. What efforts are being made at the state level to include other ultra-low emission options such as propane?
13. Would you please speak to the type of aid (Building Aid vs Transportation Aid) that districts will receive on these projects and why one would be better than the other?
14. How much is a replacement battery?
15. Any movement on timeline being pushed out?
16. What happens if district intent to purchase but it's voted down (penalties, loss of aid, etc.)?
17. Opportunities to include Hybrid versions?
18. Options for districts who don't receive as much "need" aid and how they will afford the electric transition?



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## *CNYSBA Roundtable*

### *Electric School Bus Mandate*

### *Long Range Fiscal Analysis and Data Driven Decision-Making for School Boards*

## *Questions and Comments*

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