Electric School Buses: Opportunities for Nevada Schools

MAY 28, 2020
WELCOME!
AGENDA

- Welcome & Introductions
- Why Invest? Benefits of Electric School Buses
- Why Now? Air Quality and Public Health in Nevada
- How? Funding Incentives & Opportunities
- Successful Case Study: Twin Rivers
- Nevada In Progress
- Q&A / Discussion
WHY INVEST?

Benefits of Electric School Buses
WHY? Benefits of Electric School Buses

- 2020: Transportation now the #1 source of greenhouse gas (GHG) emissions in Nevada

- SB 254 goals: reduce GHGs 28% by 2025, 45% by 2030, 100% by 2050

- Local Criteria Pollutants: Clark County in “marginal” nonattainment for Ozone pollution

- Electric school buses:
  - Zero tailpipe emissions
  - 50% less GHGs compared to diesel (Buses get cleaner every year with more renewables!)

Twin Rivers Unified School District in CA has 30 electric school buses
WHY? Benefits of Electric School Buses

- 2,488 yellow school buses transporting 167,635 students every day in Nevada

- Each electric bus can save districts:
  - $2,000 a year in fuel costs,
  - $4,400 a year in maintenance costs
  - $170,000 - 240,000 / bus in lifetime Operations & Maintenance

- Potential funding sources:
  - VW Settlement Money
  - Utility Partnerships
  - Innovative Leasing Options

- 84% of bus market will be electric by 2030 (BNEF)

*Total lifecycle costs for diesel vs electric school buses (U.S. PIRG)*
WHY? Benefits of Electric School Buses

- Kids riding in diesel school buses breathe in **5 to 15 times** more toxins than they would otherwise

- Diesel has also been linked to asthma
  - #1 chronic illness for children
  - #1 cause of school absences

- For children of color, it’s even deadlier
WHY? Benefits of Electric School Buses

- Electric school buses:
  - Improve air quality
  - Better for children’s health
  - Better for students’ academic performance
  - Long-term cost savings on fuel, maintenance, operations
  - Potential cost-savings for all ratepayers
QUICK POLL
WHY NOW?
Air Quality & Public Health in Nevada
Potential long-term health impacts of air pollution

- Cardiovascular and respiratory illness
- Loss of lung capacity and lung function
- Onset of illnesses, such as asthma, bronchitis, emphysema and even cancer
Clark County Air Quality and Health

- 36,000 children and 137,000 adults with asthma in Clark County face greater risks on days with poor air quality*
  - The impact of poor air quality is felt especially by people with breathing sensitivities or lung ailments

*American Lung Association
Clark County Challenges with Air Quality

- Marginal nonattainment for Ozone
  - Southern Nevada’s geography, topography, climate and location make for a perfect oven to cook ozone and trap ozone
  - Clark County has more than 1.4 million vehicles on our roads. Vehicle emissions are a major producer of NOx, which contributes to ozone creation
  - Transport of pollutants from other areas

- Within attainment for Particulate Matter, but still challenging
  - Exceedances caused largely by wildfire smoke, dust storms and fireworks
Ozone Trend (2006-19)
Ozone Precursors

NO\textsubscript{x} (71,194 lbs/day)
- On-Road Mobile: 64%
- Non-Point: 3%
- Off-Road Mobile: 31%
- Point: 2%

VOC (70,245 lbs/day)
- Off-Road Mobile: 48%
- Point: 5%
- Non-Point: 18%
- On-Road Mobile: 29%
Not meeting the NAAQS can mean . . .

- **Public Health**: Higher rates of chronic disease
- **Economic Health**: Economy can grow, but growth must be connected to improved air quality
  - Clean Air Act requires progressively more stringent requirements until the NAAQS is met
  - Additional pollution control equipment for industry
  - Emission offsets up to 1.5 : 1
  - Loss of federal highway dollars
  - Adjacent counties and states become more attractive for new, expanding, and existing businesses
HOW?
Funding Incentives & Opportunities
Presentation Agenda

- Background
- Program Status
- Next Annual Plan (2020/2021)
- Q&A
Senate Bill 299, approved on May 24th 2019, amended NRS 701B.670, to include in the annual plan submitted to the Commission:

“The payment of an incentive to a customer of the utility that is a public school, as defined in NRS 385.007, that installs electric vehicle infrastructure on the property of the public school or purchases electric vehicles dedicated to the transportation of students, not to exceed 75 percent of the cost to install such infrastructure or purchase such vehicles”.

Final Order 19-02001: Funds from 2019/2020 Annual Plan Custom Grant Program should be used to start implementing SB-299.

- Cover up to 75% of the upfront cost of electric school buses and/or related charging infrastructure.
- $1.5 million approved budget
- 1st Program year: 7/1/2019 – 6/30/2020
- Approved applications will have funds reserved for 12 months plus and one-year, one-time extension.
1 application has been received to date and is currently under review. Additional applications are expected prior to 6/20/3030.

NV Energy has had a number of meetings with 4 school districts across Nevada since the start of the current program year to discuss the program, application process, and gauge customer interest.

NV Energy is providing technical assistance on route analysis, benefit/cost analysis, and electricity bill impact to the school districts.

Since the beginning of 2020, NV Energy has collaborated with NDEP to ensure that interested parties are aware of additional funding available through the Clean Diesel Program. The combination of the two funding sources can cover up to 100% of the costs of an electric school bus.

One-on-one application process education and assistance is being provided.
Technical Advisory Services

Technology
- Customer Education
- Integrating Multiple Technologies (sizing solar/storage)
- Operational Use Case Review
- EV Suitability
- EV Make-Ready Needs

Bill Impact Analysis
- Renewables
- Energy Storage
- Electric Vehicles

Rate Analysis
- Evaluating Available Rate Options
- Rate Optimization / Sensitivity Analysis

Business Case Support
- Return on Investment
- Payback Period
- Available Funding Sources
2020/2021 Annual Plan

- The next program year runs from July 1, 2020 to June 30, 2021
- Submitted to the Commission on January 31, 2020, Docket 20-01040
- Full stipulation was submitted by the parties with no changes to the program as filed

- What was proposed:
  - $3,000,000.00 in incentives available
  - 75% of total costs of electric school bus and/or charging infrastructure
  - Charging infrastructure supported by the incentive program may include: chargers, transformers, electric panels, installation labor & materials, planning and engineering services, signage and logos, underground work
  - 5% of total costs may be used for training (operations and maintenance)
  - Approved applications will have funds reserved for 24 months plus and one-year, one-time extension
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Information about how NDEP is awarding VW State Trust funding to improve air quality across Nevada is available at:

https://ndep.nv.gov/air/vw-settlement
QUICK POLL
SUCCESS:
Twin Rivers Unified School District
SUCCESS: Twin Rivers Unified School District

- 127 school buses - 5,000 students - 52 schools
  - 87% of students qualify for free or reduced lunches
- 30 electric school buses -- largest fleet in the country
  - 27 more electric school buses on the way!
- Electric school buses
  - 5 Blue Bird
  - 12 Lion
  - 16 chargers
  - 16 trained drivers
SUCCESS: Twin Rivers Unified School District

- Saving approx 60% on maintenance and 80% on fuel
  - About $15,000 per year

- Financing
  - State provided $7.5 million; utility funded charging infrastructure
SUCCESS: Twin Rivers Unified School District

- **Healthier**: clean air for our children, teachers, parents and neighbors
- **Safe**: built and tested with high back seats and seat belts
- **Cleaner**: zero engine emissions
- **Great Performance**: proven in all types of terrain and weather
- **Quieter**: allowing drivers better communication with and oversight of students
NEVADA IN PROGRESS:
Washoe County & Carson City

ELECTRIC SCHOOL BUSES: OPPORTUNITIES FOR NEVADA SCHOOLS
Webinar
May 2020
NEVADA IN PROGRESS: Washoe County

Jason Geddes,

Energy Conservation & Sustainability
Program Coordinator
NEVADA IN PROGRESS: Carson City

Mark Korinek,

Director of Operations
QUESTIONS?
NEXT STEPS
THANK YOU to our partners