

# Understanding Your Utility Bill

Hosting an electric school bus can have an impact on how much you pay for electricity and the type of electrical infrastructure you need at your site. Charging a bus does not need to be costly but charging at the wrong time can result in your school losing money.

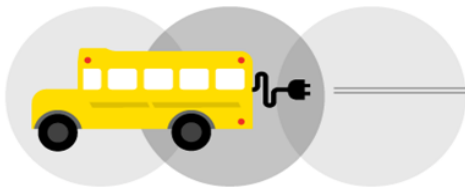
We recommend contacting your local electric utility as part of planning for your electric bus. Your electrical utility can help you understand what type of (if any) electrical upgrades are needed for your facility to host an electric school bus.

Operating an electric school bus should be less expensive than diesel. But realizing these cost savings requires that you review your utility bill to understand how you currently use electricity and how you are billed for this use. You should use this information to develop a charging plan that gives you the flexibility you need to keep the bus in service, but also keeps charging costs as low as possible. Your local utility can help you figure this out for the specific location where your bus will be parked.

There are thousands of electrical utilities in America, nearly each one has its own way of calculating electricity costs and showing those costs on your bill. The following terms may show up on your utility bill.

## Definitions

- **Kilowatt (KW)**
  - o A measure of energy flow.
  - o Each time the bus is recharged, the flow will be about the same number of *kilowatts*.
- **Kilowatt-Hour (kWh)**
  - o A measure of total energy delivered, similar to gallons of fuel.
  - o The *kilowatt-hours* that a bus uses will depend on how far it drives.
- **On-Peak / Off-Peak times**
  - o Times of day with different electric rates.
  - o Weekday electric costs (*on-peak*) may be higher than nights and weekends (*off-peak*).
  - o Ask your electric company about when to charge the bus to avoid *on-peak* times.
- **Demand Charge**
  - o The charge on an electric bill for maximum *kilowatts* (flow) in a given period.
  - o Most utilities have a charge based on the maximum *kW* of energy flow. Charging an electric school bus could increase the maximum *kW* used at a given time, increasing energy charges.
  - o To avoid *demand charges*, recharge the bus at times when the facility uses less energy.
- **Ratchet Demand Charge**
  - o Charge based on the highest on-peak demand *kW* in the past twelve months.
  - o Occasional daytime recharging may be more expensive than nighttime-only recharging.
  - o Ask your electric company to see if you have a *ratchet* charge, and how to avoid it.
- **Time-of-Use Rates**
  - o The different rates that the customer pays for *on-peak* and *off-peak* energy use.



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- **Three-phase power**
  - Industrial-grade, high-capacity power.
  - Required for some bus charging stations. Check VEIC's charging guide to see if you will need this.
  - If needed, ask your electric company about access to *three-phase* power.
- **Transformer**
  - A device that converts high-voltage power from the grid into power for a facility.
  - The size of the *transformer* limits the amount of power in *kilowatts* (flow) available to a building or facility.
  - Ask your power company if your *transformer* can support the additional electrical usage associated with an electric school bus.

