BOCES Charging for Visiting Districts & SOW Add-Ons

Instructions:

Use these SOW Optional Addition templates to help complete the SOW for the Fleet Electrification Plan (FEP).

These additions to the SOW are completely optional and should only be added if the customer [i.e.: the district (or the BOCES) desires to have them added].

All instructions and must be deleted before submitting the Final Report.

Text that is bolded and in brackets **[like this]** should be populated with the information relevant to your application.

# BOCES Charging Analysis for Visiting Districts

Instructions

If a BOCES does not own their own buses but chooses to study installing chargers to benefit visiting districts, this template can serve as a standalone SOW for the project, which will qualify the BOCES for NYSBIP charging vouchers. If the BOCES also owns their own buses, this template can be added on to the main SOW template.

This addition to the SOW should only be included for BOCES FEP projects that include installing chargers to support visiting districts.

**Scope:**

Electrification Goals

* An overview of the electric bus assessment and the approach to fleet electrification. This may include the proposed timeline and milestones for electrification.

Visiting Bus Analysis

* Analysis of the time and distance involved in each visiting bus route, which is necessary to understand the power requirements of the chargers. The analysis will define the frequency of visiting buses, the duration of bus layovers, and the total energy required to charge the batteries.

Utility Assessment

* An assessment, performed by your Utility, that analyzes your existing grid connection and determines how much additional electrical capacity is required. This assessment will tell you what equipment needs, upgrades, and costs are needed to provide that additional power. The Utility Assessment should also include a rate analysis (to be completed by the utility as available) which summarizes the rates and rebates available and is included in the final cost estimates.

Charging Strategy

* Development of a charging strategy that includes Charger power ratings and quantities and expected charging times throughout the day. Given the variable nature of BOCES support charging, the charging strategy will anticipate when chargers will need to be used by visiting buses and provide recommendations to maximize the number of buses that can be charged during layovers. If applicable, the charging strategy will also estimate the use of the chargers by the public and define rules to ensure school buses have priority at chargers.

Phasing Plan

* Development of a phasing plan identifying necessary capital works projects and phased plan for Charger Installation. This phasing plan should include a schedule and transition cost estimate for Utility upgrade/sitework and Charger purchases. Cost estimates should also include an assessment of the possible savings associated with available incentives at the time of the written report, as well as any potential revenue from the chargers if applicable. The rate analysis (completed by the utility as available) will also be included in the cost estimates and phasing plan.

**Deliverables**:

**[Specify the deliverable associated with this Task.]**

# Additional Task - Solar Feasibility Study

Instructions

This addition to the SOW should only be included when the customer (i.e. the district or the BOCES) wants to install solar panels to support chargers for their fleet. It must be clearly stated that this FEP will only include solar panels that support fleet charging. It cannot include solar panels for any other purpose on the campus.

This additional task should be added in conjunction with the Solar Feasibility study; if a district/BOCES is considering using solar energy to power their chargers they should understand the importance of battery storage.

Include a brief paragraph describing the purpose of this task. If there are multiple consultants/sub-consultants, please indicate which party will be delivering this task.

Specify any deliverables associated with this Charging Analysis. If this Analysis is serving as a standalone SOW, this list of deliverables should include a final report summarizing the findings of the study.

**Scope:**

**[NOTE: Additional items can be added to this scope as seen fit. Before adding anything else, please consult your NYSERDA PM for approval.]**

Assess the feasibility of installing solar panels to support fleet charging

Site Analysis

Cost Estimate

Basic solar array layout

* Where will the solar array be located, how will they be connected to the infrastructure, etc.

**Deliverables:**

**[Specify the deliverable associated with this Task.]**

# Additional Task – Battery Storage to Support Charging

Instructions

This addition to the SOW should only be included when the customer (i.e. the district or the BOCES) wants to install battery storage to support fleet charging. It must be clearly stated that this FEP will only include a study of battery storage that solely supports fleet charging, it cannot include battery storage for any other purpose on campus.

This additional task can be added in conjunction with the Solar Feasibility study, or it can be added independently.

Please include a brief paragraph describing the purpose of this task. If there are multiple consultants/sub-consultants, please indicate which party will be delivering this task.

**Scope:**

**[NOTE: Additional items can be added to this scope as seen fit. Before adding anything else, please consult your NYSERDA PM for approval.]**

Assess the feasibility of installing battery storage to support fleet charging

* Site Analysis
* Cost Estimate

Battery storage layout

* Where will the batteries be located, how will they be connected to the infrastructure, etc.

**Deliverables:**

**[Specify the deliverable associated with this Task.]**

# Additional Task – Workforce Training

Instructions

This addition to the SOW should only be included when the customer (i.e. the district or the BOCES) wants to conduct additional training for their workforce to work with electric school buses and chargers.

Please include a brief paragraph describing the purpose of this task. If there are multiple consultants/sub-consultants, please indicate which party will be delivering this task

**Scope:**

**[NOTE: Additional items can be added to this scope as seen fit. Before adding anything else, please consult your NYSERDA PM for approval.]**

Assess the district’s need for workforce training

* Identify who needs training (drivers, maintainers, or other staff at the depot)
* Identify any potential issues that could be alleviated with workforce training

Identify potential workforce training programs

* Trainings from OEMs, non-profits, in coordination with BOCES, etc.

**Deliverables:**

**[Specify the deliverable associated with this Task.]**

# Additional Task – Total Cost of Ownership Analysis

Instructions

This addition to the SOW should only be included when the customer (i.e. the district or the BOCES) wants to include a comprehensive Total Cost of Ownership (TCO) Analysis. This TCO Analysis should be looking at the TCO for a fully electrified fleet and comparing it to business as usual with a fully diesel/gasoline fleet.

Please include a brief paragraph describing the purpose of this task. If there are multiple consultants/sub-consultants, please indicate which party will be delivering this task

**Scope:**

**[NOTE: Additional items can be added to this scope as seen fit. Before adding anything else, please consult your NYSERDA PM for approval.]**

Estimate the total cost of ownership (TCO) for a fully electrified fleet

* Include buses, chargers, maintenance, infrastructure upgrades, and any other costs associated with electrifying the fleet

Estimate the TCO for the current diesel/gasoline fleet

* Include buses, fuel, maintenance, and any other costs associated with maintaining a diesel/gasoline fleet

Compare the TCO for the electrified fleet and the diesel/gasoline fleet

**Deliverables:**

**[Specify the deliverable associated with this Task.]**