

TRA24-02 - Supply and Delivery of Charging Equipment and Software for Electric School Buses - Specification - Charging Management Software - Technical Specifications

Line Item	Specifications	ChargeFWD		Evergi Software Consulting Limited		EV Gateway		FLO Services Inc		Foreseeson Technology Inc.	
		Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information
1	Capable of integration with other manufacturers' charging equipment. Please indicate the manufacturers and models of charging equipment to which the software is compatible with.	Yes	Yes our software is compatible with any OCPP 1.6 charging equipment.	Yes	BetterFleet is continuously adding integration with charger companies. Currently our platform is integrated with ABB Heliox and Siemens. We are in the midst of integrating with Kempower and actively speaking to other charger companies. ABB Tritium Phihong (Zerova) Heliox Siemens Kempower Jema Hitachi Tellus Alpitronic	Yes		Yes	In addition to meeting OCPP compliance across FLO's hardware and network management platform we also offer implementation services that can enable third-party manufacturers of OCPP capable charging stations to integrate with EV charging networks supported by FLO. A recent example of this open integration approach can be seen with the successful onboarding of ABB manufactured charging station. ABB is one of the largest EV charging manufacturers globally and their Tera 53 DC Fast Charger model and 24kW Wall box DCFC have both been implemented using OCPP 1.6J and are available exclusively for the use of BC Hydro and Hydro Quebec on their respective charging networks.	Yes	In addition to manufacturing and selling our own EV charging equipment ChargePoint has over 8 years of experience integrating EVSEs from other manufactures onto our network. The ChargePoint Network supports the OCPP v1.6J and 2.0.1 protocol making it possible to integrate any charging station that communicates via the protocol onto our network. ChargePoint has developed a robust integration program with a dedicated team to facilitate this process to adequately conduct integration and ensure stations works as expected. Currently our portfolio of charge management software supports charging hardware from: ABB Alfen Alpitronics IES Eaton Ebusco Heliox Proterra Tritium and more.
2	Must provide a web-based platform that includes exportable data and a dashboard showing information and controls that will be available from the proposed charging station. To include at a minimum: - Station identifier - physical location - Charging station status - Charging session start/stop times - Active charging time - kWh delivered to the bus - Power consumed by the charger (kw) Please indicate all software reporting capabilities.	Yes		Yes	BetterFleet Manage offers an interactive dashboard which is fully capable of meeting the minimum reporting requirements. Beyond this, BetterFleet provides additional functionality such as information on charger alerts - helpful for troubleshooting common issues and completing root cause failure analysis - as well as the ability to restart chargers (both soft and hard restarts) and override charging schedules if needed. It also provides information such as time to charge and other data that is critical for school bus operations.	Yes		Yes	As part of the onboarding process customers will be granted access to the FLO Owner Web Portal which is the primary network tool used to monitor and manage the charging stations. Highlights of the Owner Web Portal include: Unique login credentials with access privileges based on roles and requirements. Health and status update through an equipment heartbeat that provides a continuous stream of information from sensors inside the charging station architecture on essential data points such as the live status (available in-use unknown offline) temperature connectivity index and much more. The information is updated and displayed at near real-time speed on the charging network mapping interface built into the dashboard (see the image below to illustrate the functionality). The status information is also shared via API with third-party roaming network operators vehicle OEM navigation systems and charging aggregators including PlugShare and ChargeHub. Other information is also included in the precise GPS coordinates for the charging site station access arrangements and pricing policies charging port type(s) available power and applicable site host details. Ability to configure charging station options and parameters such as billing mode and values display unique customer-facing messages manage access and restrict who can use the service and modify power management settings. Report module featuring a range of historical charging station data which can be viewed in an Internet browser or extracted into CSV format for post-processing and analysis. Charging reports can be configured to view data per station per site or per owner account including: Station ID and site name where the charging session occurred; Session start and end time; Total number of charging sessions over a given period; Unique identifier for the charging session; User account and card identifier (for FLO Account holders); Custom RFID card names applied to specific user groups e.g. fleet vehicle ID or License Plate User's home network (for roaming partners); Connection duration; Type of connector used; EV's state of charge at the start and end of the session (for DC stations); Reason charging session ended; Cost of charging session; Total energy dispensed in kWh; 5-minute interval energy dispensed (kWh); and 5-minute interval max power output - per station and for the whole site(kW).	Yes	ChargePoint charge management software can provide the listed functions and/or information. Control functions include the following allowing a user complete control to optimize fleet charging and electrical costs: •Access control •Dynamic power module allocation •Cable Sharing •Charge scheduling •Power Sharing Management: circuit panel and site levels •Plug and Charge •API •Fleet Integration (for telematics) Please refer to Section 2 of the attached ChargePoint Solutions Overview for additional details.

<p>3 Software must have the ability to grant 3rd party data collection and administrative access (Purchaser and ASTSBC) to stations via secure web interface or API.</p>	<p>Yes</p>	<p>Yes</p> <p>BetterFleet is built on a open and accessible API driven architecture. We believe in open data access and will facilitate this request via API xls downloads.</p>	<p>Yes</p>	<p>Yes</p>		<p>Yes</p> <p>ChargePoint cloud software allows API integration and web-based data downloads.</p>
<p>4 Software is capable of OCPP 1.6J or later governing communication between the station and the network.</p>	<p>Yes</p>	<p>Yes</p> <p>BetterFleet is capable of accommodating both OCPP 1.6j and OCPP 2.0.1 communication protocols.</p>	<p>Yes</p>	<p>Yes</p>		<p>Yes</p> <p>The ChargePoint charger management system (CMS) supports the OCPP v1.6J and 2.0.1 protocol making it possible to integrate any charging station that communicates via the protocol onto our network.</p>
<p>5 Supplier is responsible for enabling cellular connectivity to a data network prior to installation. Please describe proposed network.</p>	<p>Yes</p>	<p>Yes</p> <p>4G LTE Cellular Routers will be installed and used on the project. Our architecture includes two separate hardware devices (rather than one dual sim device), each on separate cellular networks. This can be used for both the charger internet connectivity and all BetterFleet hardware.</p>	<p>Yes</p>	<p>Yes</p>		<p>Yes</p> <p>All ChargePoint products utilize a private cellular network for security purposes; network activation is completed by ChargePoint during the install process.</p>
<p>6 Supplier will perform the testing and commissioning of the software with the applicable charging station/s so that it is functional and ready for use.</p>	<p>Yes</p>	<p>Yes</p> <p>A cornerstone of BetterFleet's approach to deploying its charge management system is ensuring integration of chargers and electric school buses. We attest that we facilitate the process of ensuring systems 'speak' to one another through testing and commissioning.</p>	<p>Yes</p>	<p>Yes</p>		<p>Yes</p> <p>ChargePoint is a vertically integrated solution provider. This means we design engineer and manufacture all elements of the solution including hardware software and services to best meet customer needs. This approach also avoids the challenges and risks associated with matching different hardware and software vendors and having to determine responsibilities when inevitable issues arise. ChargePoint ultimately provides customers with a "one stop shop" for all your charging needs with the highest degree of confidence in quality reliability and functionality.</p>

Line Item	Guillevin International		Hypercharge Networks CORP		InCharge Energy		Powerflow		The Lion Electric Co		The Mobility House		Wesco Distribution Canada					
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1	Yes	Capable of integration with other manufacturers' charging equipment. Please indicate the manufacturers and models of charging equipment to which the software is compatible with.	Yes	In addition to manufacturing and selling our own EV charging equipment ChargePoint has over 8 years of experience integrating EVSEs from other manufactures onto our network. The ChargePoint Network supports the OCPP v1.6J and 2.0.1 protocol making it possible to integrate any charging station that communicates via the protocol onto our network. ChargePoint has developed a robust integration program with a dedicated team to facilitate this process to adequately conduct integration and ensure stations works as expected. Currently our portfolio of charge management software supports charging hardware from: ABB Alfen Alpitronics IES Eaton Ebusco Heliox Proterra Tritium and more.	Yes	<p>ABB</p> <p>a.AC Destination 3-22 kW b.DC Destination 11-24 kW c.DC Fast 50-180 kW d.DC High Power 175-350+ kW AddEnergie (via OCPI) a.SmartTWO b.CoRe+ c.SmartDC 50-100+ kW Delta a.AC Max b.AC Mini Plus c.AC Mini d.DC SLIM 100 kW e.UFC 150 kW f.UFC 200 kW Efacec a.QC 60/90/120 kW b.HV 350 kW c.HV 160 kW</p> <p>EVduty a.EVduty-40 (30A) FreeWire (to be certified in 2023) Grizzl-E (to be certified in Q2-2023) a.Kodiak (Dual / Single) 25 kW b.Grizzl-E Classic 10 kW c.Grizzl-E Duo 10 kW d.Grizzl-E Mini 10 kW</p>	Yes	IES Synergy (to be certified in Q3-2023) a.Keywatt 24 kW b.Keywatt 50 kW c.Keywatt 100 kW JointTech a.EVC10 4-20 kW b.EVC11 7-22 kW c.EVC12 7-22 kW JuiceBar a.JuiceBar GEN 3 (32-80A) 7-20 kW Kempower (to be certified in Q1-2023) Lite-On a.IC-3 AC Charger Siemens a.VersiCharge 9-115 kW b.VersiCharge Ultra 50 kW c.VersiCharge Ultra 175 kW Teltonika (to be certified in Q2-2023) a.Teltocharge Tritium a.RT 50 kW b.RTM 50 kW c.PKM 150 kW d.RT-S 175 kW e.PK 350 kW Wallbox (to be certified in Q2-2023) a.Dulcar Max/Blue	Yes	Our software has been tested with the following EVSE manufacturers: ICE ABB LiteOn JuiceBar Siemens Delta Tellus Power SemaConnect Freewire and Power Electronics. We have an active program to add further EVSE as we see customer demand. All industry standard OCPP 1.6-J chargers can communicate with our software for session reporting. Depending on the age of the equipment InCharge may still be able to connect to the charger network and capture charger session data that we can incorporate into dashboards and reports that are visible in the InControl software platform.	Yes	Compatible with all charging equipment that is OCPP 1.6 or later compliant.	No	Please note that the proposed charging station management softwares are only for the chargers of their own companies.	Yes	ChargePilot can be integrated with any EVSE which is OCPP 1.6J or later. To date integrations have been tested with the following EVSEs: ABB AC Wallbox ABB DC Wallbox ABB DC Terra 53/54 ABB DC Terra 94/124/184 ABB DC Terra HP ABB DC HVC ABB Pantograph Autel AC Elite Business Autel AC Ultra Autel DC Compact Autel DC Fast Autel DC Hi Power BorgWarner DC 60kW BorgWarner DC 125kW BTCPower AC Level 2 30A BTCPower AC Level 2 40A BTCPower AC Level 2 70A BTCPower DC 50kW Delta DC Wallbox 25kW Epic Charging AC Epic48 Epic Charging AC Epic80 Heliox Mobile 50kW Heliox 180 Flex Heliox Pantograph Joint Charging LiteOn IC80A Siemens SiCharge UC150 Siemens Max HP Tritium RT50	Yes	Any OCPP capable hardware
2	Yes	Must provide a web-based platform that includes exportable data and a dashboard showing information and controls that will be available from the proposed charging station. To include at a minimum: - Station identifier physical location - Charging station status - Charging session start/stop times - Active charging time - kWh delivered to the bus - Power consumed by the charger (kw) Please indicate all software reporting capabilities.	Yes	ChargePoint charge management software can provide the listed functions and/or information. Control functions include the following allowing a user complete control to optimize fleet charging and electrical costs: •Access control •Dynamic power module allocation •Cable Sharing •Charge scheduling •Power Sharing Management: circuit panel and site levels •Plug and Charge •API •Fleet Integration (for telematics) Please refer to Section 2 of the attached ChargePoint Solutions Overview for additional details	Yes	Yes and described in supplemental document.	Yes	InControl is a web-based application no additional hardware or software needed. InControl provides a comprehensive view of EV charging station information which can be accessed by drivers fleet managers and customers in real time and static basis. This information can be used to improve the efficiency of EV charging operations optimize fleet management and make better decisions about EV charging infrastructure investments. Customers manage access control user invitations and permissions configure reports edit chargers vehicles and sites manage notifications set load and energy management policies and file and monitor support tickets. The location of each station including its address city state geocoordinates and zip code. kWh costs/consumption: We enable users to enter tariff information for cost tracking. This enables us to track the cost of charging an EV at each station on a session basis as well as the amount of energy consumed by each charging session. Power levels: The maximum power output of each station. Online status: The current status of each station whether it is online and available for use offline for maintenance or out of order. Occupancy: The number of vehicles currently charging at each station and overall utilization of an account site or group of chargers.	Yes		Yes	Please see Management Software document for details.	Yes	From the ChargePilot web dashboard users have the following visibility control and reporting capabilities: View charging point status & error notifications Charging session start/stop times Active charging time kWh delivered Prioritize charging points (Re-)Start and stop charging sessions Restart chargers Aggregated view of multiple sites View charging sessions per charging point (including load profile) Download charging session summary OCPP logs View energy consumption & load profile of entire fleet View all RFIDs Add edit & delete RFIDs Prioritize RFIDs View accounts View sites Edit time zone per site (De-)Activate electricity tariffs or for TOU management View charging stations Rename charging stations & charging points	Yes	Please refer to charging management documentation for detailed information		
3	Yes	Software must have the ability to grant 3rd party data collection and administrative access (Purchaser and ASTSBC) to stations via secure web interface or API.	Yes	ChargePoint cloud software allows API integration and web-based data downloads.	Yes	If successful Hypercharge will make API available in order to integrate with 3rd party apps.	Yes	Customers manage access control user invitations and permissions configure reports edit chargers vehicles and sites manage notifications set load and energy management policies and file and monitor support tickets. InControl offers several user roles based on customer configuration as well as licenses purchased. The base license includes a Member provided read-only access to views and reports and Admin where the user can manage users access control alerts naming customize reports view error/issue reports set load and energy management policies and file and track support cases. Premium features enable roles that can access the API and API key management telematics integrations credit card integrations and PowerBI dashboards. We can also create custom roles to suit customers with specialized needs - we have over 80 different role touchpoints available to create custom permission and visibility sets.	Yes		Yes		Yes		Yes			

4 Software is capable of OCPP 1.6J or later governing communication between the station and the network.	Yes	The ChargePoint charger management system (CMS) supports the OCPP v1.6J and 2.0.1 protocol making it possible to integrate any charging station that communicates via the protocol onto our network.	Yes Software is OCPP 1.6J and soon to be OCPP 2.0.	Yes All industry standard OCPP 1.6-J chargers can communicate with our software for session reporting. We see some variances with error reporting. Some manufacturers such as Power Electronics and Freewire in our recent experience have been reluctant to share error code documentation which hampers our ability to communicate issues in plain English to our customers with these machines. Some manufacturers such as ABB require charger configuration to be performed on their own web portal instead of OCPP servers. With our ABB partnership our technicians maintain access to this web portal and will have API access to it before the end of 2023.	Yes	Yes	Yes	Yes OCPP 1.6J
5 Supplier is responsible for enabling cellular connectivity to a data network prior to installation. Please describe proposed network.	Yes	All ChargePoint products utilize a private cellular network for security purposes; network activation is completed by ChargePoint during the install process.	Yes Hypercharge pre-configure the charging station prior to shipping the unit and currently SIMs are with TELUS. Can offer customer's preferred carrier if adverse to TELUS.	Yes InControl is a web-based application no additional hardware or software needed. Our modems and SIM use 4G.	Yes If proposed NovaCharge Software is used supplier will install SIM card prior to delivery of chargers.	Yes The charger manufacturer is providing the connection to the network once the charger is ready for delivery.	Yes ChargePilot kit comes with a cellular modem. Network provider depends on customer location and best available network.	Yes Eaton
6 Supplier will perform the testing and commissioning of the software with the applicable charging station/s so that it is functional and ready for use.	Yes	ChargePoint is a vertically integrated solution provider. This means we design engineer and manufacture all elements of the solution including hardware software and services to best meet customer needs. This approach also avoids the challenges and risks associated with matching different hardware and software vendors and having to determine responsibilities when inevitable issues arise. ChargePoint ultimately provides customers with a "one stop shop" for all your charging needs with the highest degree of confidence in quality reliability and functionality.	Yes Yes	Yes We work with roaming SIM Cards which choose the strongest network.	Yes If supplier is completing the installation and commissioning this will be done on site. If another party is completing the installation and commissioning software testing post-installation can be completed remotely by the supplier.	Yes The charger manufacturer is providing the connection to the network once the charger is ready for delivery.	Yes The Mobility House commissions & tests all chargers with ChargePilot and provides customer training on the use of ChargePilot software.	Yes