

## EV charger industry sees first major IPO – ChargePoint

October 27, 2020

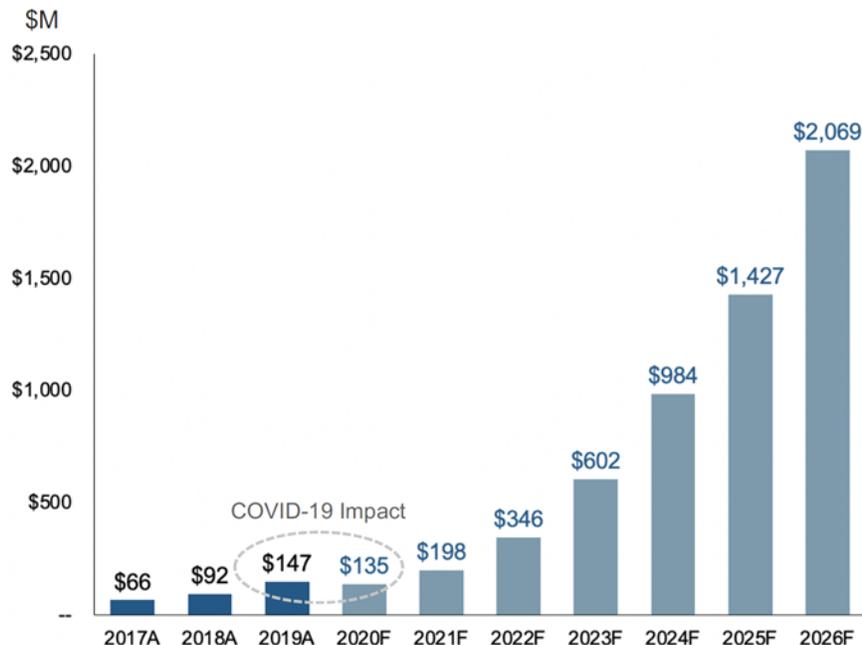
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To: Clients and Colleagues  
 From: Andrew Kinross, Director

When the electric vehicle charger company ChargePoint went public on September 24, 2020 through a reverse merger, there were a lot of investors celebrating the \$2.4 billion valuation (enterprise value) that the company achieved. The company had backers from the oil & gas, utilities and automotive industries including US firms Chevron and AEP and European firms Daimler, BMW and Siemens. There was also a wide range of venture capital and private equity investors including GIC and Canada Pension Plan Investment Board.

In a buoyant stock market, the company's valuation was a lofty 18x its calendar year 2020 expected revenue of \$135 million. And going forward, the company projected some big numbers: they estimated revenue would climb to \$2.1 billion by 2026, a 58% CAGR over a seven year period, and gross margin would reach 42% (see Figure 1 and Figure 2).

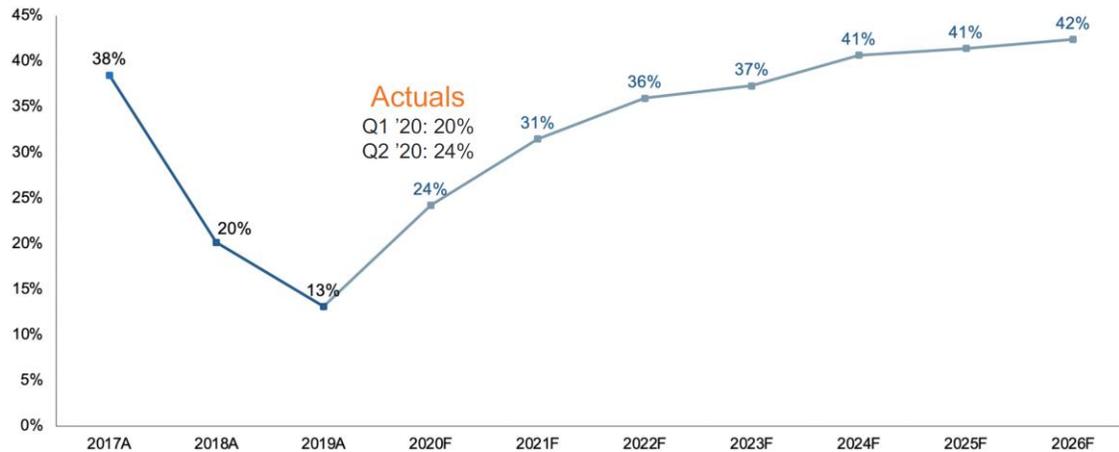
**Figure 1. ChargePoint's Revenue 2017-2026**



Source: ChargePoint Investor Presentation, September 24, 2020

**Figure 2. ChargePoint's Gross Margin 2017-2026**

## Gross Margin Improves as Product Releases Stabilize and Software Revenue Grows



Notes  
 + Historical numbers are based on GAAP. Forecast does not include stock-based compensation.  
 + ChargePoint FY runs 2/1-1/31. CY reflected for simplicity; financials do not reflect CY adjustments.  
 + Historical numbers are unaudited and subject to change.

Source: ChargePoint Investor Presentation, September 24, 2020

But despite the hockey stick revenue growth, there is still a long way to go even before the company reaches profitability. For the Fiscal Year ended January 2020, ChargePoint posted revenue of \$147 million, but a loss of \$133 million driven by high R&D expenses (\$69 million) and sales & marketing expenses (\$57 million). The company expects to become EBITDA positive by FY2025.

As shown in Figure 2, the company's gross margin declined from 2017 to 2019 before bouncing back in 2020. Until 2018, ChargePoint focused exclusively on the Level 2 market. When it came out with a DC fast charger product in 2018, the margin declined owing to one-time charges and initially low manufacturing volumes of the new product, followed by new product introductions in Europe. But the margins are expected to increase as the business scales.

### Competition

Along with Tesla and Electrify America, thirteen-year-old ChargePoint is one of the leading players in the charger infrastructure market in the US and Canada. They also have a presence in 16 European markets. According to data from the US Department of Energy Alternative Fuels Data Center, ChargePoint operates more chargers than any other company in the US and Canada with about 38,000 Level 2 units and 2,000 DC fast chargers (Figure 3). Together with Tesla and Electrify America, these three companies currently account for about 80% of all networked Level 2 and DCFC chargers in the US and Canada and 90% of DCFCs, the fastest

growing market segment. EVgo and Greenlots (Shell) are the #4 and #5 DCFC network operators.

**Figure 3. Charger Portfolio by Network Provider (Number of Units)**

	Network Provider	Location	DCFC	Level 2	Total	DCFC Avg units per site	Level 2 Avg units per site
1	Tesla	Superchargers - Across the US and Canada along highway corridors and in dense urban areas	9,711	-	23,255	9.8	-
		Tesla Destination - Across the US and Canada at hotels, restaurants, and shopping malls	-	13,544		-	3.2
2	Electrify America	Across the US, primarily in California	2,061	95	2,156	4.4	1.0
3	ChargePoint	Across the US and Canada	2,045	38,080	40,125	2.2	3.3
4	EVgo	Across the US	1,365	469	1,834	1.7	1.5
5	Greenlots	Across the US and Canada	695	1,839	2,534	2.8	3.3
6	Circuit électrique	Quebec	337	2,304	2,641	1.5	1.7
7	FCN	Quebec	232	80	312	2.2	3.0
8	Blink	Mostly on the US coasts	145	3,850	3,995	2.0	2.5
9	FLO	Across Canada	144	2,194	2,338	1.2	2.1
10	EV Connect	California and northeast US	143	3,261	3,404	3.9	4.3
11	SemaCharge	Across the US		4,756	4,756		2.9
12	Volta	Top 20 metro areas across the US at shopping malls and grocery stores	2	1,369	1,371	1.0	2.3
	All other		311	1,233	1,544		
		<b>Total</b>	<b>17,193</b>	<b>73,074</b>	<b>90,265</b>	<b>3.7</b>	<b>2.9</b>

Notes:

1. Sorted by number of DCFC chargers
2. Includes chargers across the US and Canada
3. Some units may have multiple ports so the number of ports is higher.

Source: US DOE Alternative Fuels Data Center, October 2020

## Value Chain and Business Model

Figure 4 shows the EV charger value chain. For new installations, the value chain includes the hardware (which includes the charger, interconnection switchgear, transformers, panels and breakers), project development, site design and installation. For the installed base of chargers in the field, the value chain includes charger ownership, the network provider (the company that provides the software that runs the charger and handles billing and reporting) and operations and maintenance.

**Figure 4. EV Charger Value Chain**

New Installations				Annual Operating Revenues		
Hardware	Project Development	Site Design	Installation	Charger Ownership	Network Provider	O&M
<ul style="list-style-type: none"> <li>Charger hardware</li> <li>Power electronics assembly</li> <li>Charge controller</li> <li>Network controller</li> <li>Charge station cable and connector</li> <li>Interconnection switchgear and conduit</li> <li>Credit card reader and/or RFID reader</li> </ul>	<ul style="list-style-type: none"> <li>Site control / acquisition</li> <li>Permitting</li> <li>Agreement with installer/integrator</li> <li>Agreement with network provider</li> <li>O&amp;M agreement</li> <li>Obtain incentives</li> </ul>	<ul style="list-style-type: none"> <li>Site evaluation</li> <li>Electrical engineering and design</li> <li>Electrical cabinets</li> <li>Permitting</li> </ul>	<ul style="list-style-type: none"> <li>Equipment procurement</li> <li>Civil Upgrades for Utility Connection</li> <li>Civil (ADA, Bollards (pipes), Pad Mounts)</li> <li>Electrical labor</li> <li>Project management</li> <li>Trenching/boring</li> <li>Utility inter-connection</li> <li>Testing &amp; Commissioning</li> <li>Transformer, feeder, switchgear</li> </ul>	<ul style="list-style-type: none"> <li>Equity</li> <li>Debt</li> <li>Access fees/revenue share</li> </ul>	<ul style="list-style-type: none"> <li>Per port network operations fees</li> <li>Charger communications and diagnostics</li> <li>Charge station management</li> <li>Driver management and payment systems</li> <li>Data reporting and analytics</li> <li>Remote software, firmware upgrades</li> <li>Customer support</li> </ul>	<ul style="list-style-type: none"> <li>Preventative maintenance</li> <li>Compliance with warranties</li> <li>Connector maintenance</li> <li>Corrective maintenance</li> <li>Campaigns</li> <li>Refurbishment</li> <li>Warehouse and logistics (mostly by a third party)</li> </ul>

Source: Power Advisory

ChargePoint is primarily a hardware provider and network provider. They have a charger product line (some of it contract manufactured) that they sell to their customers and then provide software and warranty subscription services to the installed base. On a revenue basis, about 80% of ChargePoint’s revenue comes from selling charger stations and 20% from software and warranty. The charger owner (the site host) collects revenue generated from the operation of the charger over the course of its life. For installation, ChargePoint works with partners that they recommend to their customers, but ChargePoint does not have in-house installation or O&M staff, opting for a “capital light” approach. They sell a parts and labor warranty called Assure which sits on top of the standard product warranty, both of which are fulfilled by their network of O&M partners.

Key points related to the business strategy of the top 5 network providers are shown in Figure 5.

**Figure 5. Summary of the Top 5 DCFC Network Providers**

Network Provider	Ownership	EV?	In-House Charger?	Business Model / Key Points
<b>Tesla</b>	<ul style="list-style-type: none"> <li>Publicly traded ("TSLA")</li> <li>Large shareholders: Elon Musk, various institutional investors</li> </ul>	Yes	Yes	<ul style="list-style-type: none"> <li>Unlike others, Tesla chargers only talk to Tesla cars</li> <li>Chargers are "dumb" chargers (the "smart" electronics in the car talks to the charger)</li> <li>By far the most chargers per site (~10)</li> <li>Highly vertically integrated (does most installation/O&amp;M in-house)</li> <li>Plans to expand across North America and Europe</li> </ul>
<b>Electrify America</b>	<ul style="list-style-type: none"> <li>Volkswagen</li> </ul>	Yes (VW)	No	<ul style="list-style-type: none"> <li>Venture was financed by \$2 billion Volkswagen settlement</li> <li>Focused on California</li> <li>Pursuing vertical integration</li> </ul>
<b>ChargePoint</b>	<ul style="list-style-type: none"> <li>Publicly traded ("SBE")</li> <li>Large shareholders: Chevron, AEP, Daimler, BMW, Siemens, Canada Pension Plan</li> </ul>	No	Yes	<ul style="list-style-type: none"> <li>ChargePoint only works with ChargePoint chargers</li> <li>Has its own proprietary communication protocol</li> <li>Has third party installation and O&amp;M partners</li> <li>Provides parts/labor maintenance agreement ("Assure")</li> <li>Plans to expand across North America and Europe</li> </ul>
<b>EVgo</b>	<ul style="list-style-type: none"> <li>LS Power</li> </ul>	No	No	<ul style="list-style-type: none"> <li>Focused solely on DCFC</li> <li>Partnership with GM to build 2,700 DCFCs</li> </ul>
<b>Greenlots</b>	<ul style="list-style-type: none"> <li>Shell</li> </ul>	No	No	<ul style="list-style-type: none"> <li>Charger units are branded as Shell / Greenlots, but are not manufactured by Shell</li> <li>Pursuing vertical integration aside from hardware</li> </ul>

Source: Power Advisory

### Charger Manufacturers

Most network providers don't have their own charger hardware product. ChargePoint, along with Tesla, Blink and SemaConnect, are the exceptions. ChargePoint also typically doesn't adhere to industry communication protocols, instead going with their own proprietary standard. Tesla is similar in that they are 100% focused on their own proprietary chargers that only talk to Tesla vehicles. By contrast, other network providers provide services on chargers that have been manufactured by independent companies (see

Figure 6 for a list of charger manufacturers around the world).

Figure 6. Charger Manufacturers Around the World (grouped by headquarter location)



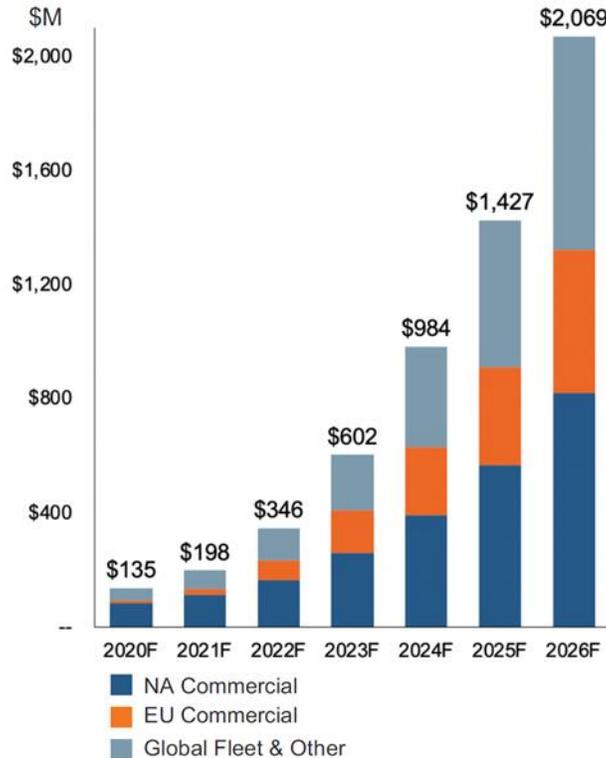
Source: Power Advisory

Margins for hardware are comparable to electronic hardware margins in other industries. We expect that gross margins will be in the 25%-30% range (+/-) though there could be some commoditization over time leading to margin erosion. Installation gross margins are typically 20% and includes margin on all of the equipment items (i.e., interconnection switchgear, panels, breakers, transformers) except the charger itself. O&M is a labor intensive business and gross margins in that business are higher than installation gross margins. But the network provider, which is a software business, can do very well on margins, especially as the business scales, since incremental expenses are small. That's where ChargePoint will benefit as the installed base grows.

### Fleets – the Growth Market

ChargePoint says that fleets are the fastest growing part of their business, and expects that segment to account for 38% of revenue by 2026 (see Figure 7).

**Figure 7. ChargePoint Revenue by Market Segment**



Source: ChargePoint Investment Presentation, September 24, 2020

Indeed, the fleet business has been growing steadily. Buses have been the early fleet market, but passenger cars and delivery vans won't be far behind. When the total cost of ownership for electric vehicles becomes lower than that of internal combustion engine (ICE) vehicles, fleets will rapidly move over to the new technology, and have begun doing so already. Europe will likely be earlier due to higher gas prices than North America.

ChargePoint's product offering for fleets is more expansive than for its residential and commercial businesses (

Figure 8). They provide the hardware solution and several associated subscription services. Whereas for commercial customers they just provide a networking service, for fleets, they offer to optimize schedules and fueling, and manage the customer's energy usage. ChargePoint also provides professional services for design/build and provides parts and labor warranties. This broader offering will result in a larger revenue stream per unit than for commercial customers. The reasons why fleet operators opt for these products and services are shown in Figure 9.

**Figure 8. ChargePoint's Fleet Product and Service Offering**



Source: ChargePoint Investment Presentation, September 24, 2020

**Figure 9. Reasons Why Site Hosts electrify their fleets**

**Delivery & Logistics | Sales Service & Motorpool  
Shared Mobility**

- Manage operating costs (fueling and maintenance)
- Meet government mandates and regulations
- Minimize risk and future-proof operations
- Achieve sustainability goals

Source: ChargePoint Investment Presentation, September 24, 2020

Following a challenging year during Covid in 2020, EV charger growth is expected to pick back up again for both the commercial and fleet businesses in 2021 as EV adoption continues. Many opportunities exist for companies to pursue revenue and margin across the value chain. That includes new entrants and companies that already play in one part of the value chain, but might be able to leverage their position into other parts of the value chain. With such a high growth market, there will be many opportunities. Hardware and installation are the largest opportunities, but the downstream activities of network provider and O&M will grow as the installed base grows. Other important supporting functions such as project development, site design, and software development will also find their niches.

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