

Gravity Technologies

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1 Summary

Gravity Technologies is a New York startup that claims to have installed America’s fastest EV chargers for personal vehicles in a parking garage on 42nd Street on the West Side of Manhattan. Those chargers have a maximum capacity of 500kW, which are double than Tesla’s supercharger at 250kW. The technology’s high capacity can theoretically take an EV from empty to fully charged in 10 minutes¹. Currently, the firm markets on its website two charging solutions: Dedicated EV Stations (the aforementioned garage), which can charge 200 miles in 5 minutes, and Invisible Charging (charging at off-street parking)², which can charge 200 miles in 13 minutes. The off-street parking chargers have a capacity of 200kW, which is drastically more competitive when compared with *It’s Electric* at 17.6kW and 25 miles/hr of charging. However, the opportunity that companies such as *It’s Electric*, *Connected Kerb*, and *Voltpost* are attempting to seize, is tapping into existing infrastructure, particularly excess electric capacity, to build EV chargers, bypassing any required grid upgrades. Although their ideas solve the problem of accessibility in Urban areas, they don’t solve the “time” and “convenience” problems that gas stations and gas cars offer. Tapping into homes’ existing infrastructure by incentivizing their owners is innovative, but turbulent if the energy consumption increases or the estate gets sold. Hence, *Gravity Technologies* is offering a competitive alternative because any other solution that does not provide the *gasoline convenience* is likely to fail (at least in the near future). While I might not agree with the off-street parking model, I certainly agree with the Dedicated EV Charging stations as a lift-off project. “Instead of changing people’s behaviors, give them something close to their desires” is the premise of my recommendation³. As shown in Figure (1), the Top 3 locations for public charging according to consumers are parking garages, highways, and street/public spaces. *Gravity Technologies* has the capability of tapping into all three due to its high-speed charging technology.

Exhibit 5 - Consumers Want More Public Charging Stations, But at Different Locations Depending on the Region

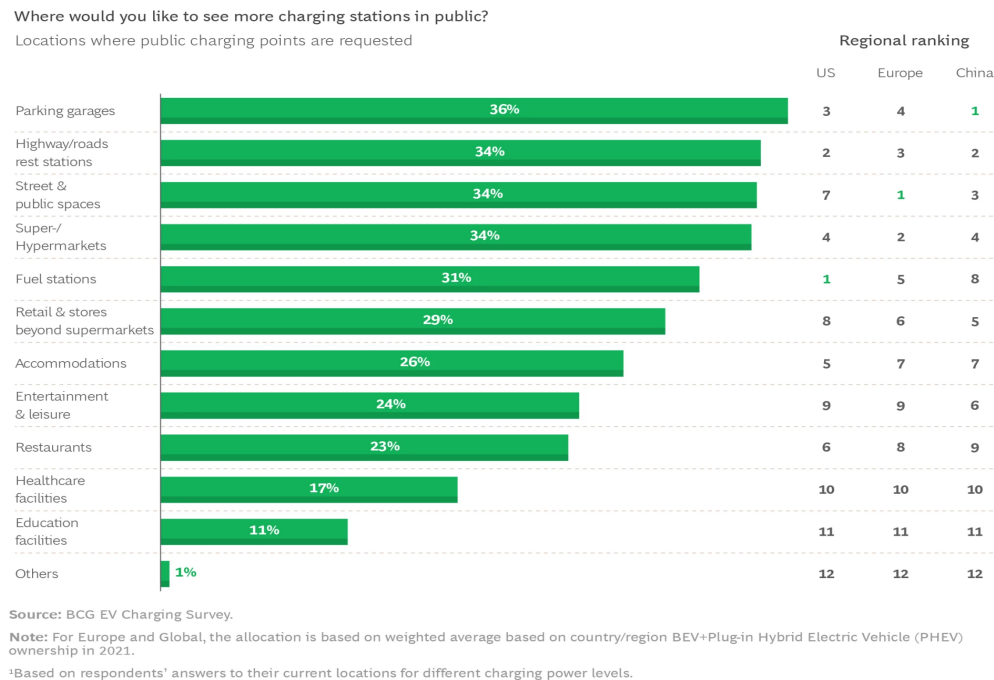


Figure 1. Consumers’ Public Charging Stations Preferences

1. <https://www.wsj.com/business/autos/ev-charger-city-new-york-f13f8bac>
2. <https://gravitytechnologies.com/>
3. <https://www.bcg.com/publications/2023/what-ev-drivers-expect-from-charging-stations-for-electric-cars>

2 EV Market and Policy

The EV market has seen substantial growth since 2010, particularly between 2021 and 2023 as shown in Figure (2) (*Figure (3) shows the cumulative sales of EVs to estimate the current number of EVs*). Particularly, provision 30D in the IRA has contributed to the increased EV sales through \$7,500 tax credits for new vehicles and the updated 25E, providing \$4,000 credits for qualifying used EVs. In the first two quarters of 2024, more than 100,000 clean vehicle Time of Sale Reports have been submitted through IRS Energy Credits Online⁴. If policy remains constant, EVs are expected to make up 50% of all passenger vehicles in the US by 2030⁵.

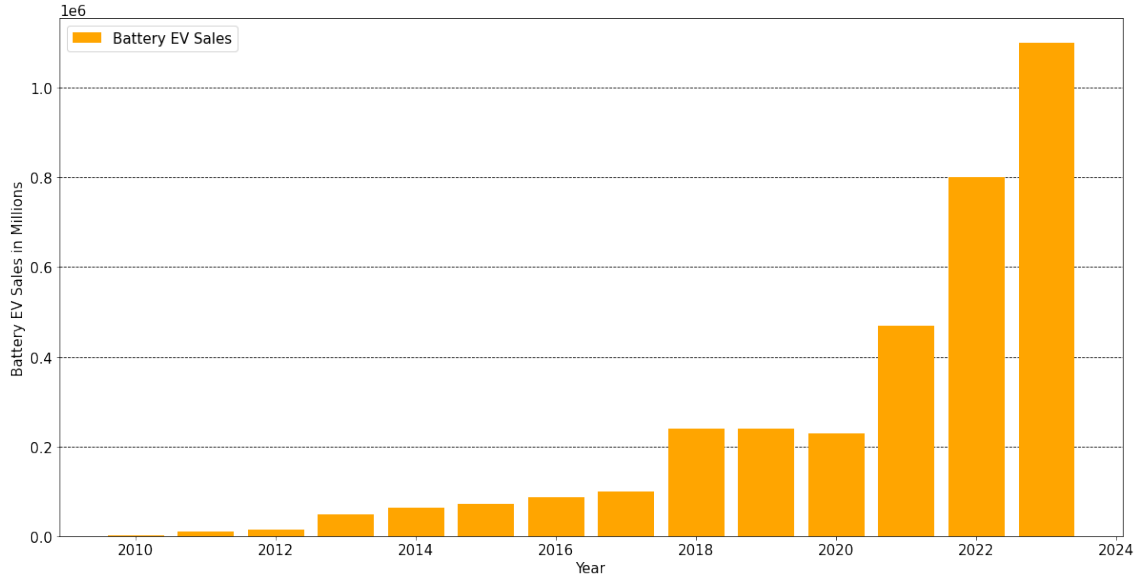


Figure 2. Battery EV Sales (Global EV Outlook 2024, IEA)

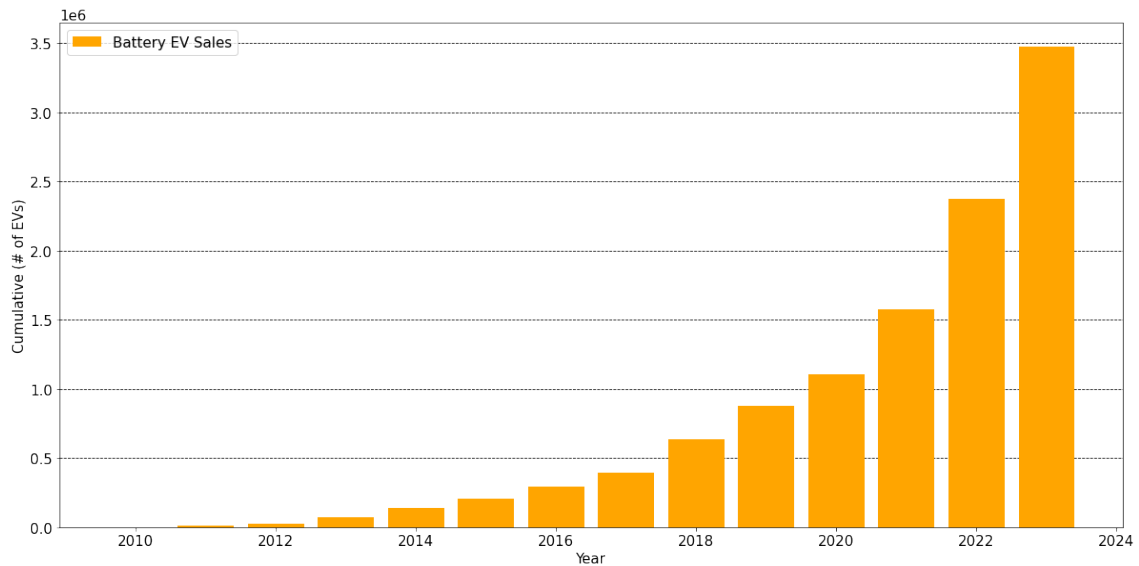


Figure 3. Cumulative Battery EV Sales (Variation of: Global EV Outlook 2024, IEA)

4. <https://home.treasury.gov/news/featured-stories/after-just-three-months-the-inflation-reduction-act-ira-has-saved-americans-an-estimated-600-million-on-clean-vehicle-purchases-at-the-time-of-sale>

5. BloombergNEF Electric Vehicles Sales – 2022-2023 and EV Sales Outlook 2024

President Trump has vocalized numerous times that he wants to ban the IRA, and particularly the EV tax credits. Non-intuitively, Elon Musk believes this ban will help Tesla in the long run because it will hurt its competitors⁶ (Tesla takes up 85% of the US EV market share already). In short, banning tax credits on EVs might reduce the industry’s growth rate, but the infrastructure remains essential for the long term.

Figure (4) shows the breakdown between slow and fast chargers by year starting in 2010. Since 2019, *superchargers* have been growing at a rate 20% a year until 2022, and then at a 40% rate between 2022 and 2023. This is not only attributed to the IRA, but also people wanting reliability, a robust infrastructure, convenience, and speed (in an article published by BCG): “Also, we found out that EV drivers are not resistant to paying top dollar for public charging, especially when it is fast.”⁷.

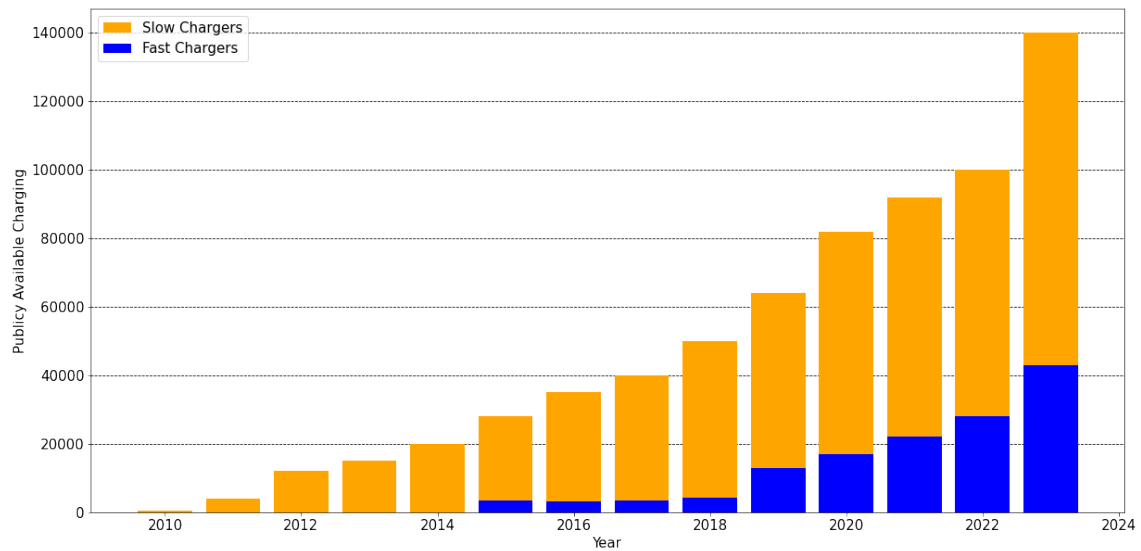


Figure 4. Publicly Available Charging (Global EV Outlook 2024, IEA)

As a firm, we should be agnostic to whether the EV market will plateau in the short-term due to policy changes. Current EV owners are asking for the charging infrastructure that Tesla, Charge-Point, Blink, and many others cannot supply on their own. Not only is charging a problem for current consumers, but also vehicle ranges⁸. Political polarization is also evident in the research.

6. <https://www.nytimes.com/2024/11/15/climate/electric-vehicles-trump-tax-credit.html>

7. <https://www.bcg.com/publications/2023/what-ev-drivers-expect-from-charging-stations-for-electric-cars>

8. <https://www.pewresearch.org/short-reads/2024/06/27/about-3-in-10-americans-would-seriously-consider-buying-an-electric-vehicle/>

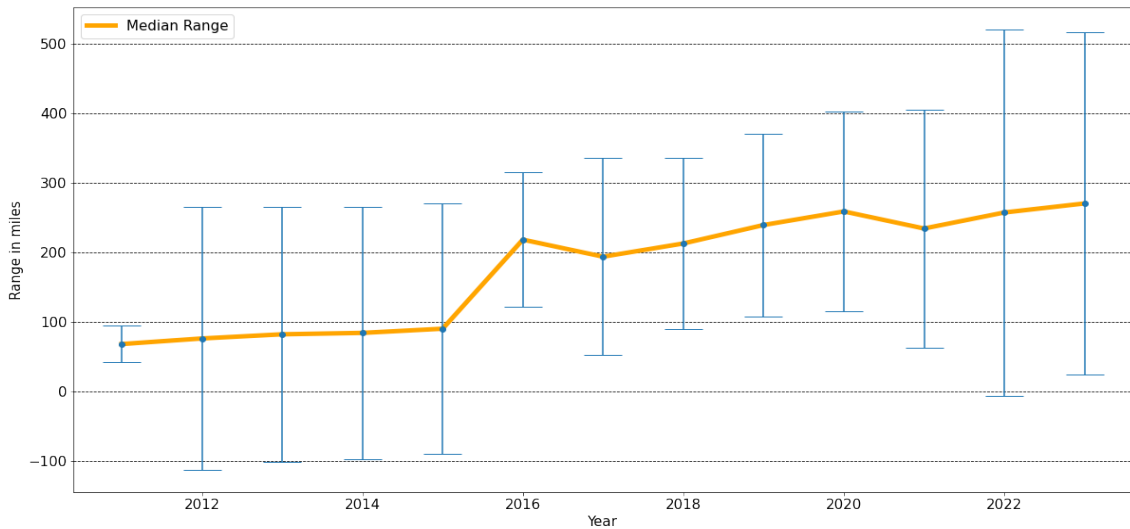


Figure 5. Average Range of EVs (Department of Energy, January 1, 2024)

If the goal is to ensure speed, reliability, and convenience to serve people’s desires and build on-the-go charging stations and off-street parking, the projects will require significant grid upgrades in certain areas. The Bipartisan Infrastructure Law provides \$7.5B– \$5 billion through the National Electric Vehicle Infrastructure (NEVI) Formula Program and \$2.5 billion is a Discretionary Grant Program⁹. Those grants, originally passed during Biden’s administration, are supposed to go to states to roll out 500,000 charging stations¹⁰. The new administration should have little effect on the bill due to its bi-partisanship.

3 Risks and Benefits

3.1 Benefits

The electric vehicle supply equipment (EVSE) market is anticipated to expand significantly, increasing from its current value of \$7 billion to \$100 billion by 2040, with a projected compound annual growth rate (CAGR) of 15%. The market comprises four primary value pools: hardware, software, installers, and charge point operators (CPOs). Among these, CPOs, which manage the construction, operation, and maintenance of EV charging stations, are expected to dominate the market. Their share is predicted to grow from around 50% of the market’s value today to 65% by 2040, translating to approximately \$65 billion in revenues. Conversely, hardware providers’ share of the market value is projected to decline steadily, dropping from 46% now to 35% by 2030, and further to 20% by 2040.¹¹ See Figure (6).

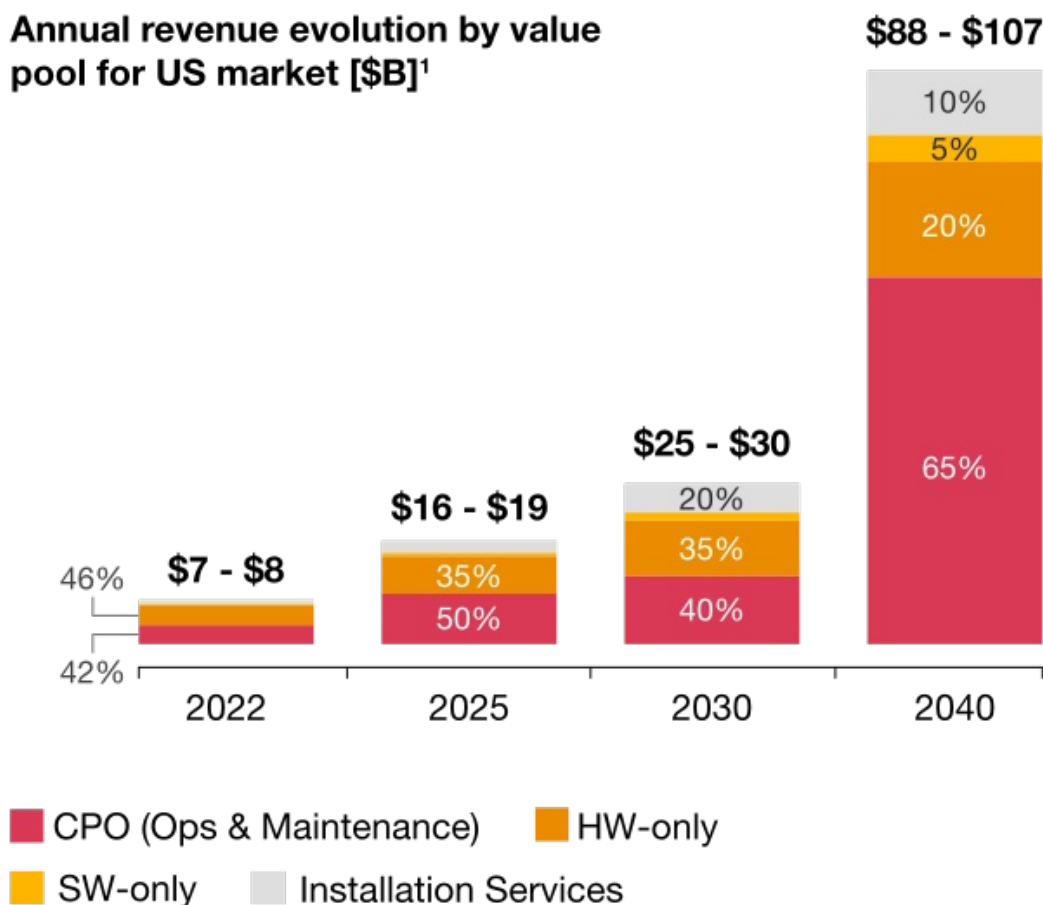
This reflects the growing importance of service-oriented models within the EV ecosystem, which is what *Gravity Technologies* has the potential to do. Additionally, the declining share of hardware providers is a commoditization trend in EVSE hardware. As technology becomes standardized, competition among hardware manufacturers may drive down prices, reducing their profitability. This shift underscores the importance of focusing on convenience services, software integration, and value-added features where customers pay a premium, but there is an ability to differentiate in a competitive market.

9. <https://afdc.energy.gov/fuels/electricity-infrastructure-state-planning>

10. <https://www.utilitydive.com/news/US-presidential-election-Harris-Trump-critical-time-for-ev-adoption/730525/>

11. <https://www.pwc.com/us/en/industries/industrial-products/library/electric-vehicle-charging-market-growth.html>

Annual revenue evolution by value pool for US market [\$B]¹



(1) Upper range of the projections assumes full EV adoption in new sales by 2040, while lower range assumes full EV adoption by 2045
Source: PwC analysis

Figure 6. EV Charging Growth

3.2 Risks

Changes in government policies can affect the EV market. For example, the U.S. Department of Energy approved a \$1.25 billion loan to EVgo to fund the installation of 7,500 EV chargers. However, shifts in administration priorities, such as potential reversals of EV spending by the incoming administration, can introduce uncertainty¹². Moreover, the EV charging market is becoming increasingly competitive, with numerous players entering the field. This competition can lead to market saturation in certain areas, impacting the utilization rates and profitability of charging stations.

One competitor is ChargePoint which operates the largest public EV charging network in the U.S., with over 31,000 charging locations and approximately 56,000 Level 2 and Level 3 charging ports. 96% of ChargePoint's ports are Level 2 chargers, indicating a focus on standard charging solutions. Tesla manages around 6,000 charging locations, encompassing over 33,000 charging ports. It leads in fast-charging infrastructure, with more than 20,000 DC fast-charging ports, surpassing the combined total of its top three competitors. EVgo operates over 850 charging locations, offering more than 3,000 charging ports. Approximately 2,600 of EVgo's ports are DC fast chargers, with

12. <https://www.theverge.com/2024/12/13/24320443/evgo-doe-loan-biden-ev-charging-money-trump>

about 40% located in California. Blink Charging operates a substantial network, though specific numbers of locations and ports are not detailed¹³.

13. <https://www.edmunds.com/electric-car/articles/largest-ev-charging-companies.html>