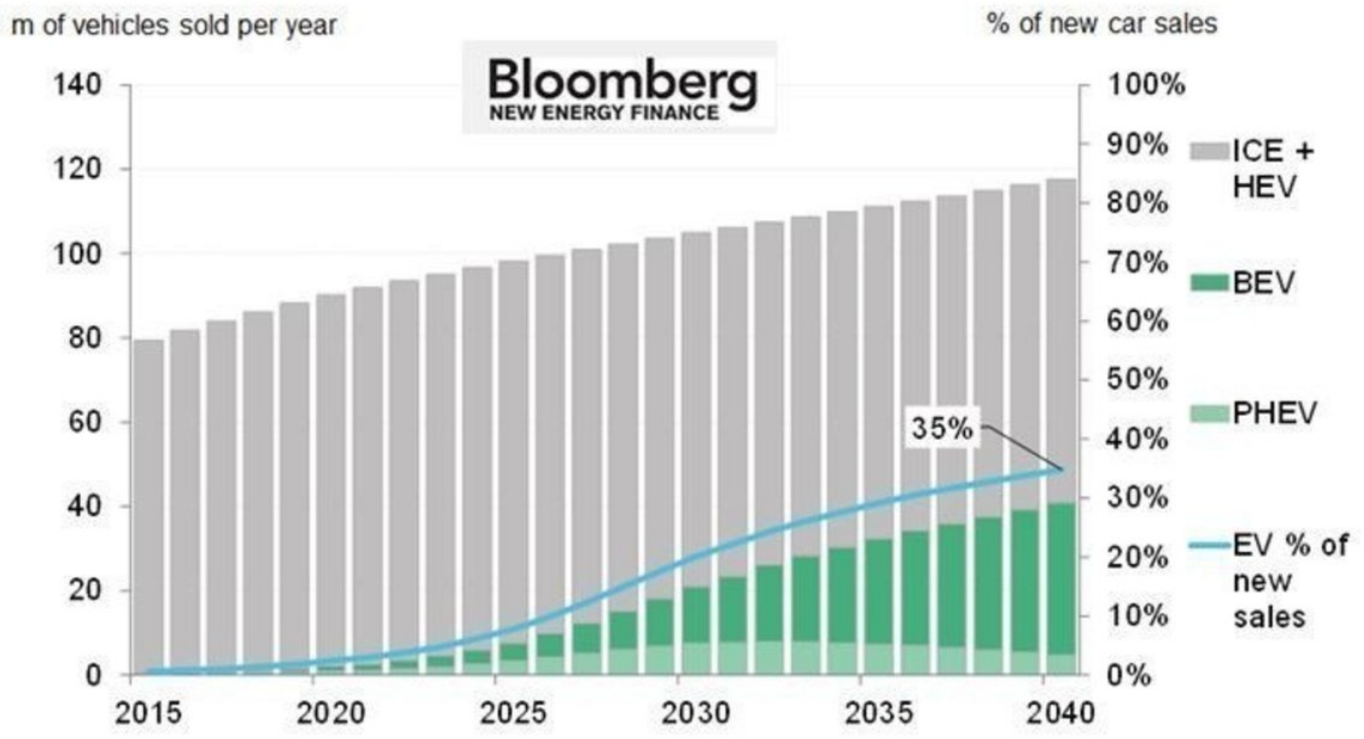
Twitter Thread by Mukund Mohan

Mukund Mohan
@mukund

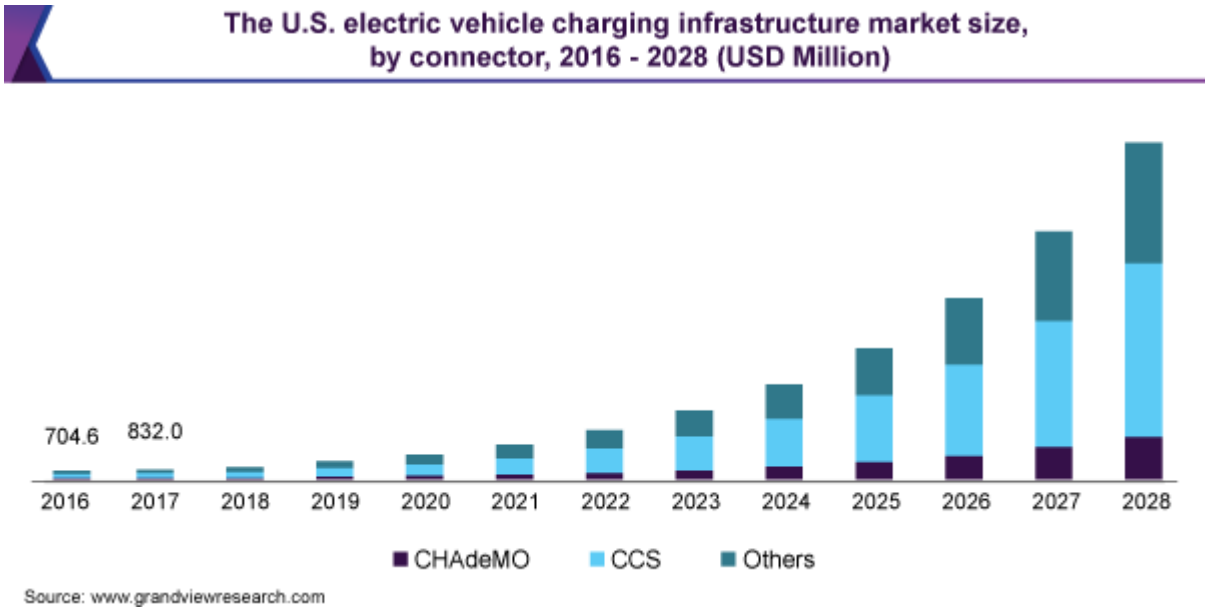
EV Charging - A thread on the segment of charging infrastructure & stocks including
$TPGY $SBE $CLII $BLNK $NBAC $BEEM $STPK $TSLA $IDEX

	EV Box	Chargepoint	EV Go	Blink	Nuvee Corp	Beem Charging	Stem Inc.	Tesla
Ticker	TPGY / EVB	SBE	CLII	BLNK	NBAC	BEEM	STPK	TSLA
Date of Acquisition / Public	Dec-20	Sep-20	Jan-21	Feb-18	Nov-20	2010	Dec-20	
Pro Forma Equity Value (Post Money Value)	$ 1,394,000,000	$ 3,049,000,000	$ 2,675,000,000	NA	$ 202,000,000	NA	$1,354,000,000	
EV at Acquisition	$ 969,000,000	$ 2,401,000,000	$ 2,100,000,000	NA	$ 132,000,000	NA	$ 829,000,000	
M Cap Jan 29 2021	$ 3,554,700,000	$ 11,586,200,000	$ 4,389,000,000	$2,200,000,000	$ 363,600,000	$ 474,000,000	$3,655,800,000	
Stock Price	$ 25.53	$ 38.06	$ 20.90	$ 49.43	$ 18.37	$ 56.78	$ 27.10	
Gain since acquisition announcement	155%	280%	64%	N/A	80%	N/A	170%	
Positioning	EVBox is the leading charging solutions platform for electric vehicles in Europe	World's leading electric vehicle (EV) charging networks	EVgo owns largest U.S. public DC Fast Charging Network	Deployment and operation of EV charging infrastructure	Vehicle-to-grid (V2G) technology for renewable energy storage	Invent, patent, design, engineer and sell renewably energized infrastructure	Renewable smart energy storage - H/W + S/W	
Money Raised at SPAC / Secondary	$ 425,000,000	$ 648,000,000	$ 575,000,000	$ 225,000,000	$ 70,000,000	$ 4,240,000	$ 525,000,000	
Location	Netherlands	US		US	US	US	US	
SPAC Team	TPG Pace	SwitchBack Energy	Climate Impact Real Solutions	NA	Newborn Acquisition Corp	NA	Star Peak Energy	
Presentation	Link	Link	Link	Link	Link	Link	Link	
Management Team	Everon, etc.	Apple, Microsoft etc.	SunPower, SunEdison	VW, EVGo	Kyocera, Navy	Multiple	Multiple	
2020 Revenue (E)	$ 70,000,000	$ 135,000,000	$ 14,000,000	$ 5,300,000	$ 6,000,000	$ 5,100,000	$ 33,000,000	
2021 Revenue (E)	$ 120,000,000	$ 198,000,000	$ 20,000,000	$ 11,500,000	$ 32,300,000	$ 8,500,000	$ 147,000,000	
2022 Revenue (E)	$ 225,000,000	$ 346,000,000	$ 54,000,000	$ 23,000,000	$ 93,400,000	$ 12,400,000	$ 315,000,000	
2023 Revenue (E)	$ 372,000,000	$ 602,000,000	$ 166,000,000	$ -	$ -	$ -	$ 526,000,000	
2024 Revenue (E)	$ 595,200,000	$ 984,000,000	$ 326,000,000	$ -	$ -	$ -	$ 748,000,000	
2025 Revenue (E)		$ 1,427,000,000	$ 596,000,000	$ -	$ -	$ -	$ 944,000,000	
CAGR 2021 - 2022	88%	75%	170%	100%	189%	46%	114%	
CAGR 2020 - 2024	150%	126%	446%	NA	NA	NA	433%	
EV/Rev at TX	19.91	22.59	191.07	N/A	33.67	N/A	41.03	
2022 EV / Rev multiple	15.8	33.5	81.3	95.7	3.9	38.2		
2024 EV / Rev multiple	5.97	11.77	13.46	N/A	N/A	N/A		
Gross Margin current	24%	24%	52%	NA	36%	NA	12%	
Gross Margin 2025	38%	42%	58%	NA	48%	NA	38%	
# of Charging Points	190,000		1,412	24,000	NA	NA	NA	14,300

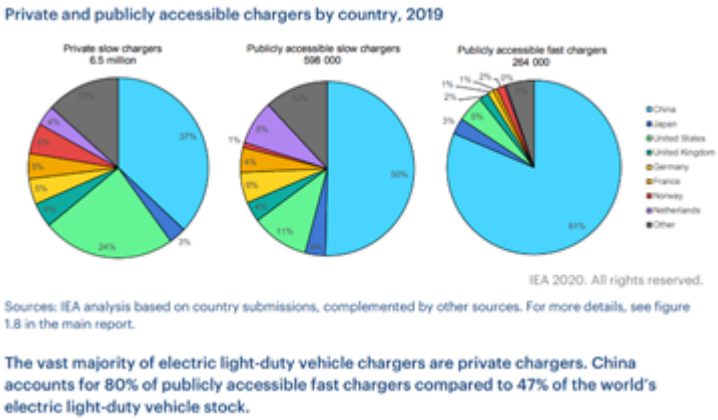
According to the International Energy Agency, which forecasts that there may be 300-400 million EVs (cars + commercial) on the road out of approximately 2 billion vehicles by 2040.



The global electric vehicle charging infrastructure market size was valued at USD 15.06 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 33.4% from 2021 to 2028.

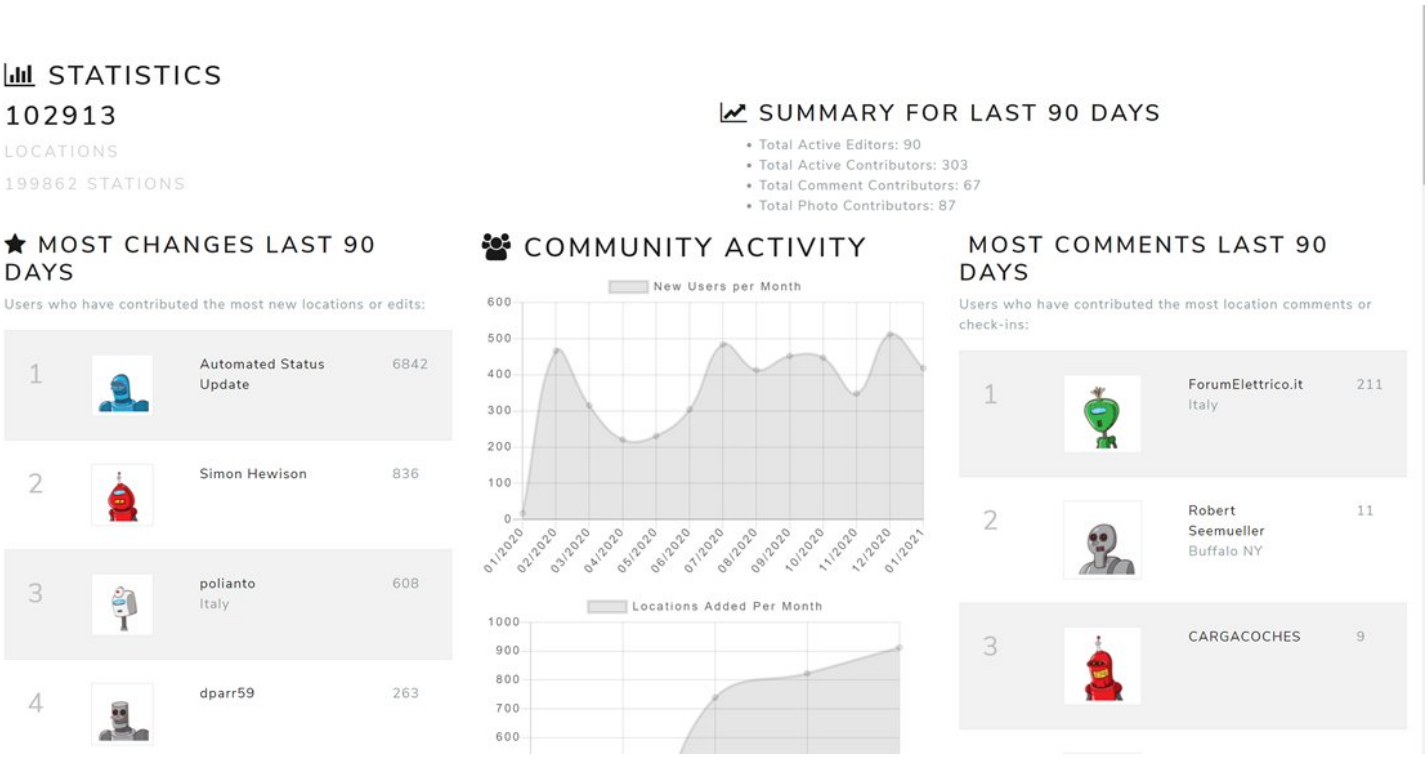


In 2019, there were about 7.3 million chargers worldwide, of which about 6.5 million were private. US alone needs about 2 million EV charging stations for the 40 or more electric car models that are likely to be on the roads in their multitudes by 2025. China leads the market.

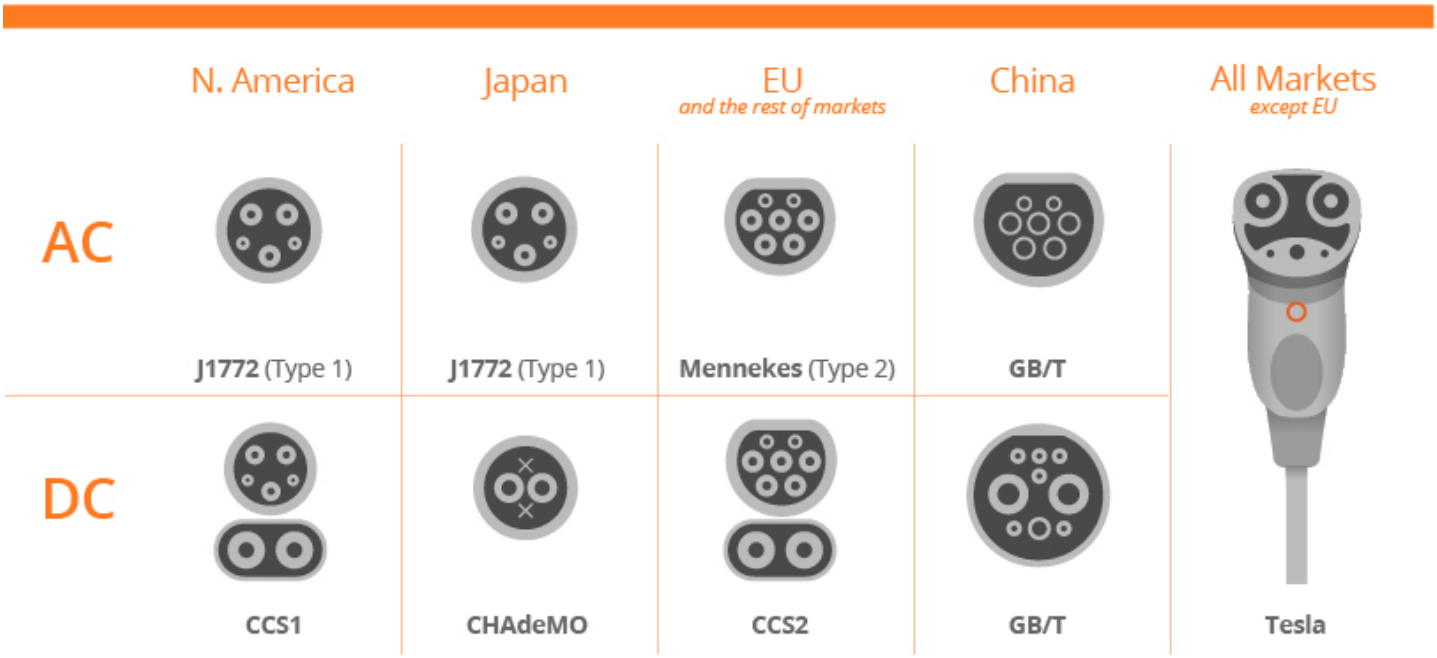


According to the Open Charge Map, there are almost 200K charging stations across about 100K locations around the world.

https://t.co/0ToXKV9h8E



Chargers are AC or DC - with special types of "pins" for different types of vehicles



There are 3 types of chargers by speed - L1, L2 and Fast charging

Fast charging is the future. No one wants to wait for 30-60 minutes to get their vehicle charged. So fast charging network is growing

	Power	Time	Standard Use
Level I	*120V*	*6-10 hrs*	Staff use during work day, long term parking at commuter lots or vehicles parked overnight.
Level II	*204-240V*	*1-3 hrs*	Commercial use or work vehicles that are heavily used and need a midday charge.
DC Fast Charging	*480V*	*30 mins*	Best for highway sites to enable longer vehicle trips.

There are over 50 companies in the space including traditional big oil companies. I put together a partial list below - this is not comprehensive.

Companies to watch

1. ChargePoint
2. Ideanomics ($IDEX)
3. ABB
4. BP (invested in China PowerShare)
5. Shell (GreenLots – acquired NewMotion)
6. Webasto (acquired Aerotech)
7. Hyundai
8. RWE (Europe)
9. Daimler Mercedes-Benz (partners with RWE as well, EnBW)
10. Siemens
11. EvGo
12. EBBox
13. G2Mobility
14. PG&E
15. Blink
16. Renault (Vehicle 2 Grid)
17. Phihong
18. Ample
19. Ionity
20. Electrify America
21. Tritum (Australia)
22. Driivz

The "public charging market" comprises of - charging points @ work, commercial establishments, etc.) or the traditional “gas stations”, but a global network of charging points



I am dividing the charging segment is divided into 3 sub sectors:
a) Infrastructure providers – H/W, S/W, Services e.g. $CLII, $NBAC
b) Charging as a Service providers e.g. $BLNK, $SBE, $TPGY
c) Energy management (Vehicle2Grid, etc.) e.g. Stem $STPK



Publicly accessible chargers accounted for 12% of global light-duty vehicle chargers in 2019, most of which are slow chargers.
Globally, the number of publicly accessible chargers increased by 60% in 2019 compared with the previous year. Below is China Southern Power Grid



This segment is a "picks and shovels" play in the EV segment. You need charging for EV rollout to be successful.
China has learned that and is rapidly growing their based. Europe (Netherlands) is following them and US is still lagging.
Except $TSLA is leading the charge here



In my comparison I highlighted (yellow) the companies leading by each metric - by row.

Quite simply you wont go wrong picking $SBE and $TPGY - for the LONG HAUL. They are relatively expensive now is MY OPINION.
Another company I really like is $STPK

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I am going to skip each co pros and cons since this thread is getting long.

EvGo: $CLII presentation

https://t.co/5AoN370okm

$STPK Stem presentation
https://t.co/eJVsOvQ0ZG

EVBox $TPGY presentation

https://t.co/faC1XyfTNf

ChargePoint Swithback energy $SBE presentation

https://t.co/FxRmvlerZM

Blink $BLNK presentation

https://t.co/U1RPAgSbjG

Nuvve $NBAC presentation

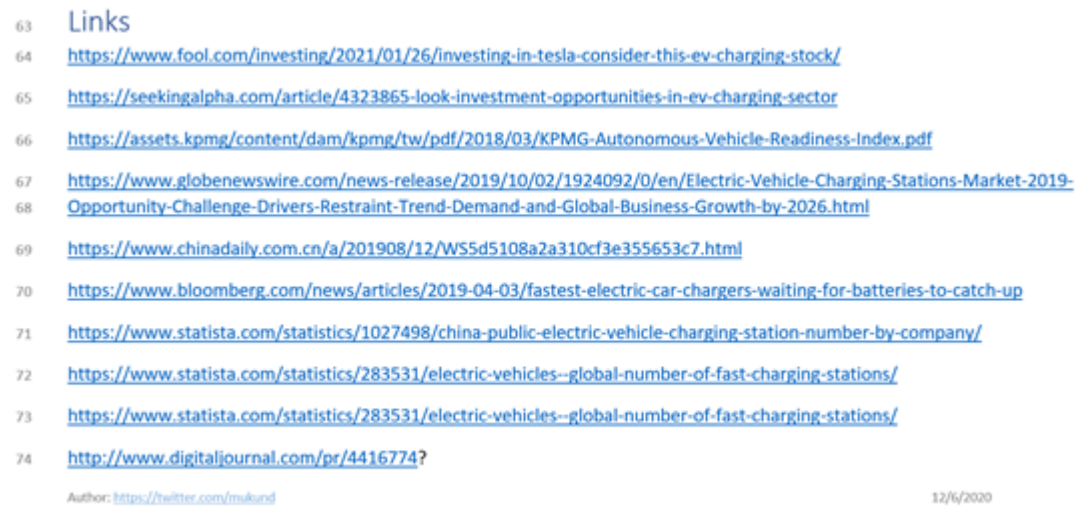
https://t.co/Aoz9Rpw9bB

BeamforAll $BEEM presentation

https://t.co/jgsvx4wBjW

List of other links for your own research

Read as much as you can please before you invest.
■■■



63 Links
64 https://www.fool.com/investing/2021/01/26/investing-in-tesla-consider-this-ev-charging-stock/
65 https://seekingalpha.com/article/4323865-look-investment-opportunities-in-ev-charging-sector
66 https://assets.kpmg/content/dam/kpmg/tw/pdf/2018/03/KPMG-Autonomous-Vehicle-Readiness-Index.pdf
67 https://www.globenewswire.com/news-release/2019/10/02/1924092/0/en/Electric-Vehicle-Charging-Stations-Market-2019-
68 Opportunity-Challenge-Drivers-Restraint-Trend-Demand-and-Global-Business-Growth-by-2026.html
69 https://www.chinadaily.com.cn/a/201908/12/WS5d5108a2a310cf3e355653c7.html
70 https://www.bloomberg.com/news/articles/2019-04-03/fastest-electric-car-chargers-waiting-for-batteries-to-catch-up
71 https://www.statista.com/statistics/1027498/china-public-electric-vehicle-charging-station-number-by-company/
72 https://www.statista.com/statistics/283531/electric-vehicles--global-number-of-fast-charging-stations/
73 https://www.statista.com/statistics/283531/electric-vehicles--global-number-of-fast-charging-stations/
74 http://www.digitaljournal.com/pr/4416774?
Author: https://twitter.com/mukund 12/6/2020

Other companies in the "Charging as a Service" segment:

Tesla
Ideanomics
Electrify America
Ionity
Qingdao
Tritium
New Motion
Enel X