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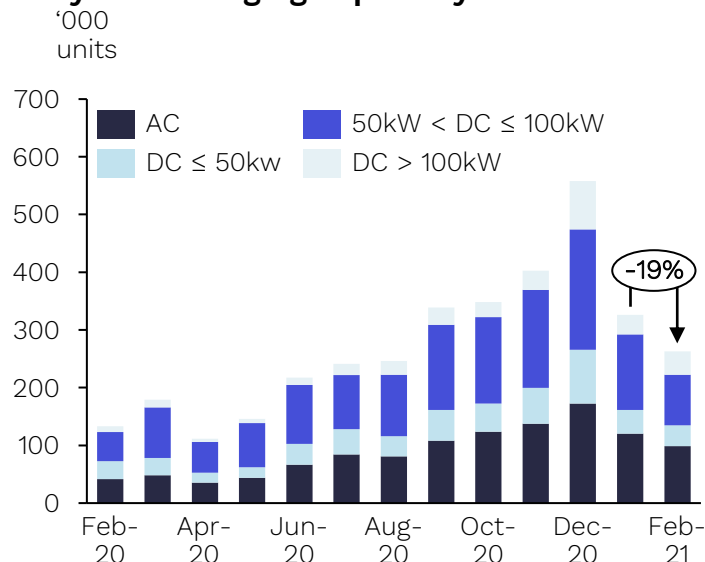
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Report methodology and glossary can be found on the final page

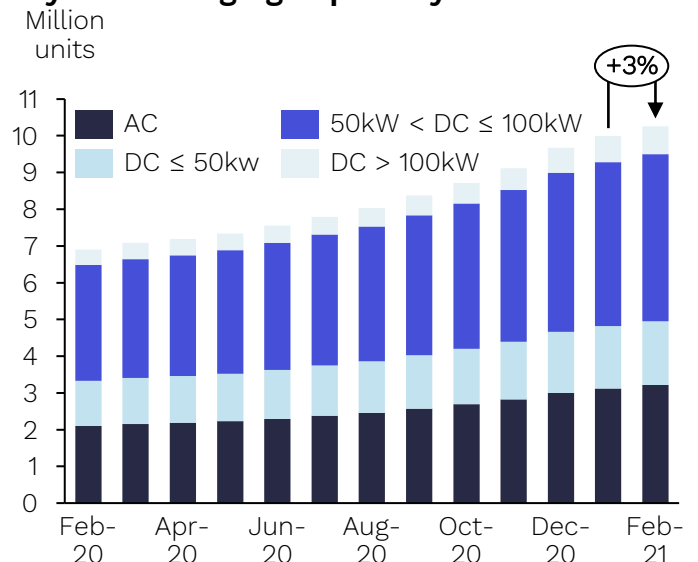
## Global EV Charging Developments

- The German Federal Ministry of Transport and Digital Infrastructure has announced €300 million in new funding for small and medium sized companies to invest in charging infrastructure. The funding is aimed at retail and hotel locations as well as local authorities and utilities. Up to 80% of the cost of units and installation could be covered by the funding. The electricity used for the new stations must be renewable, and chargers installed before the end of 2022. In addition to this announcement the revised edition of Germany's charging infrastructure funding program is due in spring this year and will be providing a further €500 million.
- Electreon has been developing an electric road system which will wirelessly charge commercial and passenger electric vehicles while travelling. The latest announcement confirms that the trial route in Tel-Aviv between the University and a nearby neighbourhood has begun successfully operating. This test period found the system worked continuously along the length of the 2km route, further trials will test varying operating conditions including different loads and continuous use time. As we reported last month Electreon are also providing the technology for the eCharge project in Germany.
- Enel X has formed a JV with Indian engineering and operations firm, Sterling and Wilson Pvt Ltd to accelerate the roll out of EV charging infrastructure in India.

### Global Monthly PC & LDV EV Sales by max charging capability



### Global PC & LDV EV Fleet Assessment by max charging capability

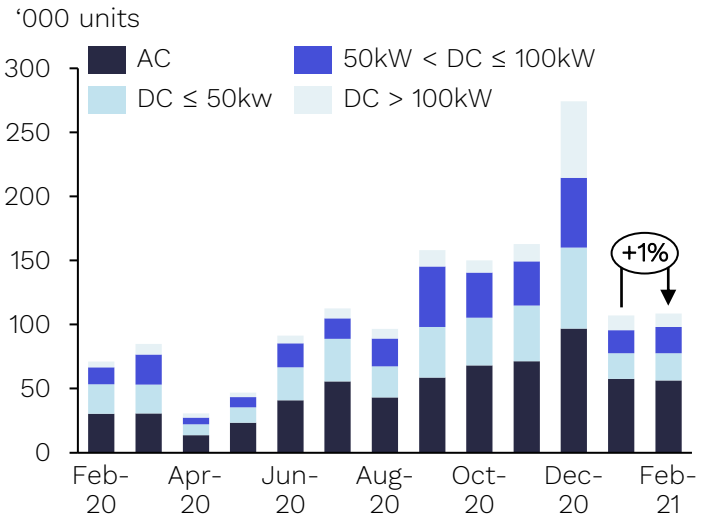




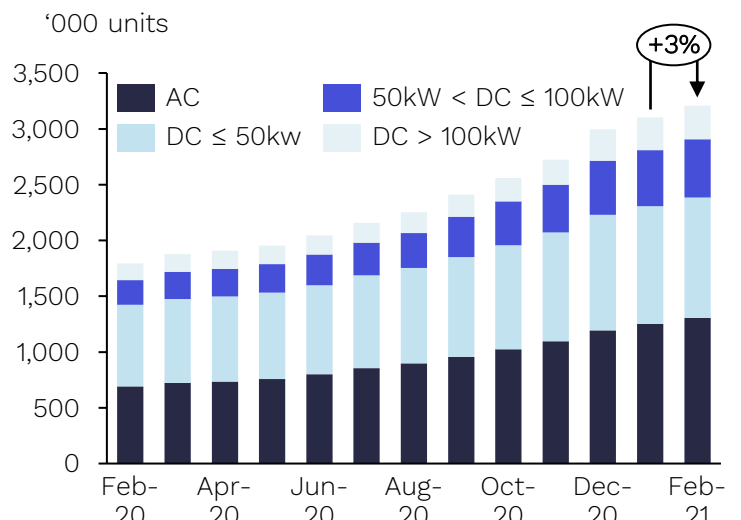
## EV Charging Developments: EU & EFTA & UK

- Ecotricity launched The Electric Highway in 2011, through a new collaboration with Gridserve, all existing chargers will be replaced with new technology and high power 350 kW chargers installed. Gridserve will take a 25% stake in the Electric Highway with funding for the project provided by Hitachi Capital, a shareholder in Gridserve. Gridserve recently spoke at our Spring Seminar Series, the video for which can be found on the Membership page.
- BP Pulse have also announced the planned rollout of fast charging hubs in partnership with The EV Network, as part of their plan to double the bp pulse network to 16,000 points by 2030. The first hub with 24 fast charging points is due to open later this year.
- Motor Fuel Group (MFG) have announced £400 million of investment to install 2,800 chargers across 500 sites in the UK over the next 10 years. MFG is an independent forecourt operator with more than 900 sites. It has currently installed EV chargers at 108 sites through third parties. This new investment will see MFG self-fund, build and operate the 150kW chargers.

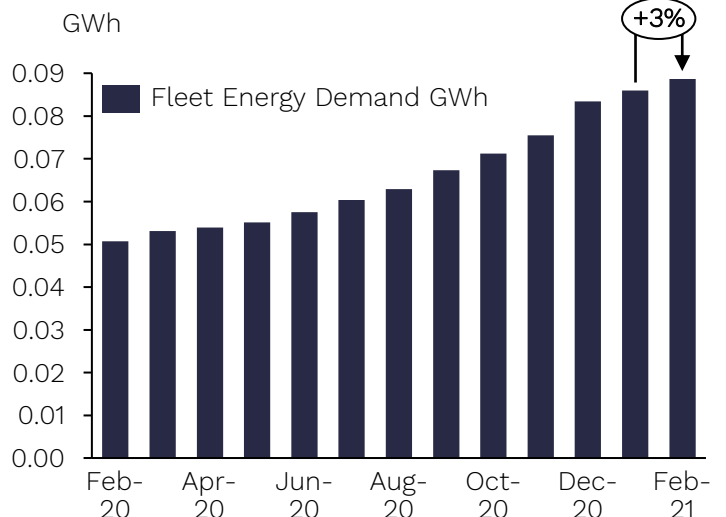
## Regional Monthly PC & LDV EV Sales



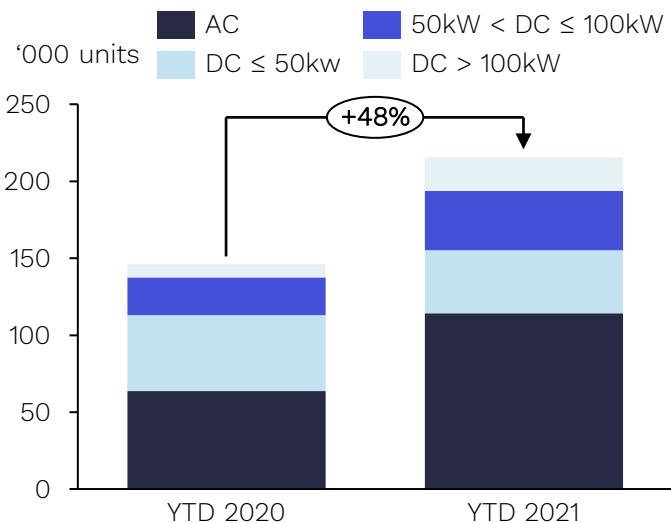
## Monthly PC & LDV EV Fleet Assessment



## Monthly PC & LDV EV Fleet Energy Demand Assessment



## Regional Year-to-date PC & LDV EV sales

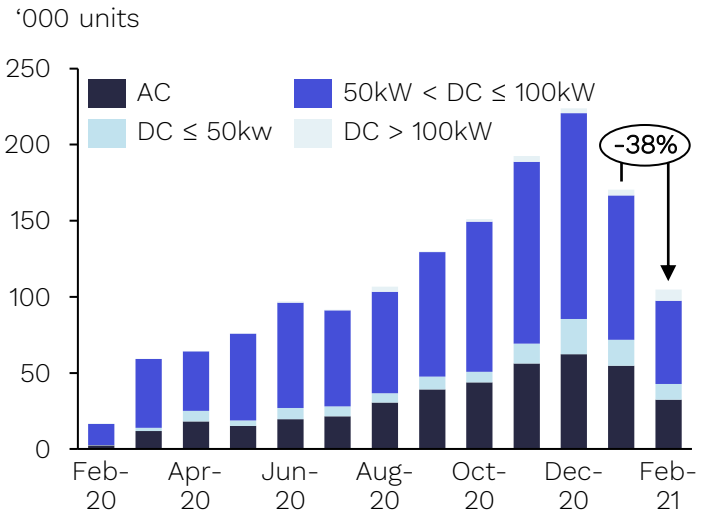




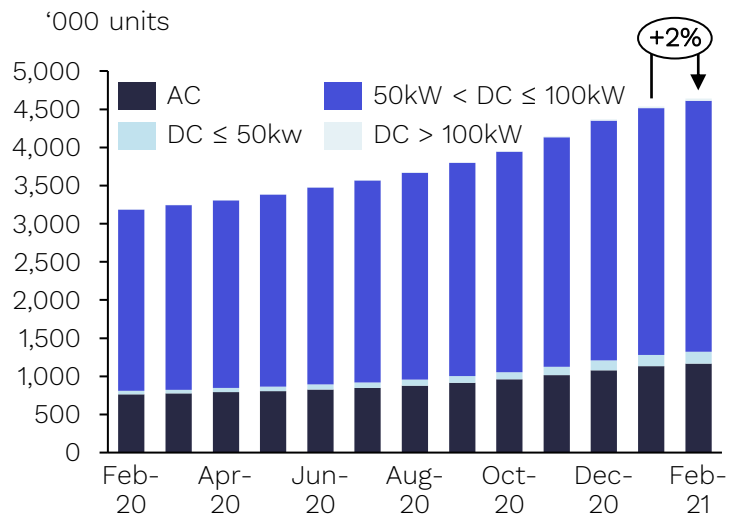
## EV Charging Developments: China

- Battery swapping operations are being more aggressively pursued by many OEMs in China, NIO have set a goal of 500 battery swap stations by the end of 2021, up from 191 at present. SAIC announced that it will launch new Roewe models with battery swap technology, working with Aulton New Energy which operates a network of 286 stations. Traditional OEMs have also started to enter the market, FAW announced an investment of \$1.4 million in a JV with Aulton. Likewise, BAIC, GAC and Changan Auto have investment plans in this field.
- A picture of the new GAC Aion super charging station was released with a power rating of 600kW (600A, 1,000V). The charger is suspected to be designed for GACs new graphene-based battery, discussed in our January assessment, for potential use in the Aion V model.
- The government in Hong Kong has announced its pledge for zero vehicle emissions by 2050. The plan has set various goals, including installation of 150,000 EV chargers at parking spaces and 5,000 public charging stations in Hong Kong by 2025.

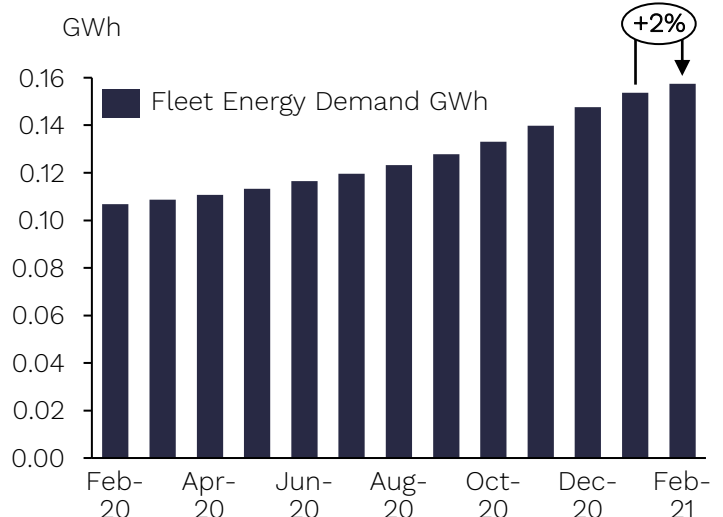
## Regional Monthly PC & LDV EV sales



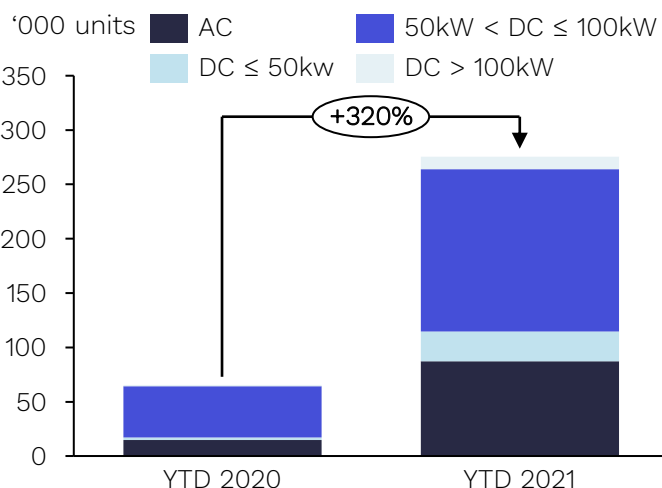
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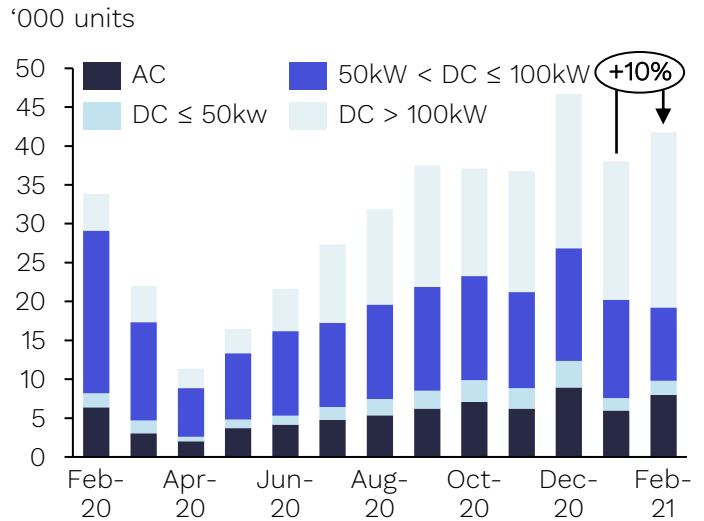




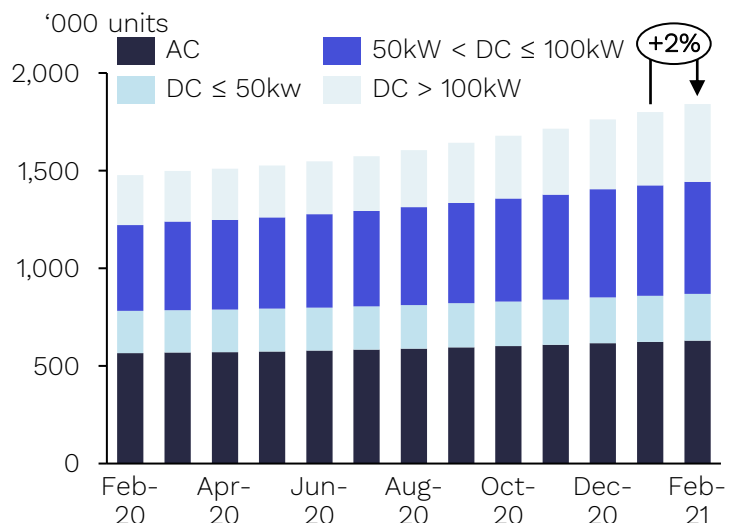
## EV Charging Developments: North America

- Chargepoint, a major charging network operator in North America, and Polestar, the Swedish OEM, have partnered to create an integrated charging app in the new Polestar 2 EV. Chargepoint's network is usually accessed via RFID card or smartphone, the new Polestar-Chargepoint technology is integrated with the infotainment system of the car. The Polestar 2 is the first EV to use Google's Android Automotive Infotainment system.
- ABB, one of the largest providers of charging infrastructure worldwide, has teamed up with Amazon Web Services to develop a cloud-based fleet management solution for EVs. The platform is set to launch this year, meaning ABB can offer a complete charging solution for fleet managers without third party software.
- Rivian, set to deliver its first EVs in the coming months, has announced it will create a network of 3,500 fast chargers at 600 sites. The chargers will initially be 200kW and only available to Rivian drivers. In addition, Rivian plans to install over 10,000 'waypoint' level 2 chargers by 2023.

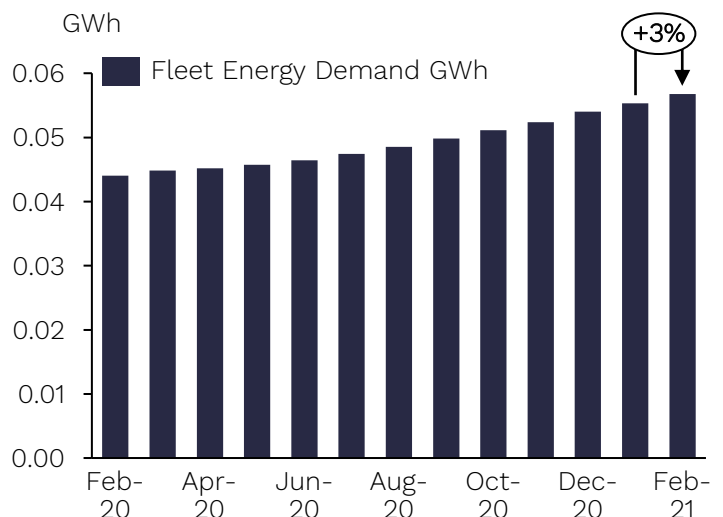
## Regional Monthly PC & LDV EV sales



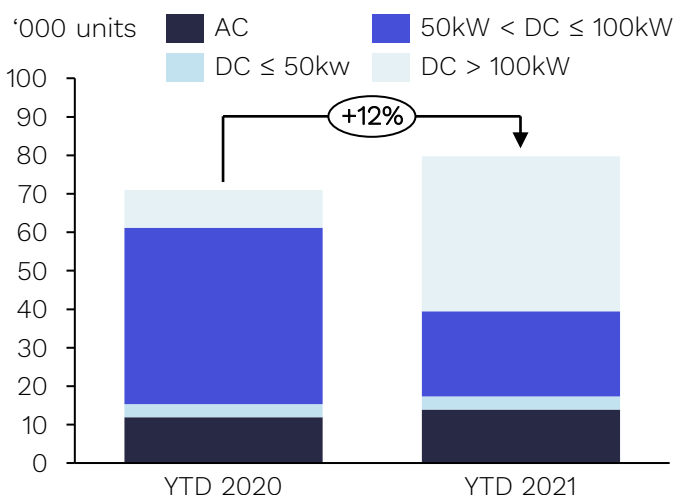
## Monthly PC & LDV EV Fleet Assessment



## Monthly PC & LDV EV Fleet Energy Demand Assessment



## Regional Year-to-date PC & LDV EV sales

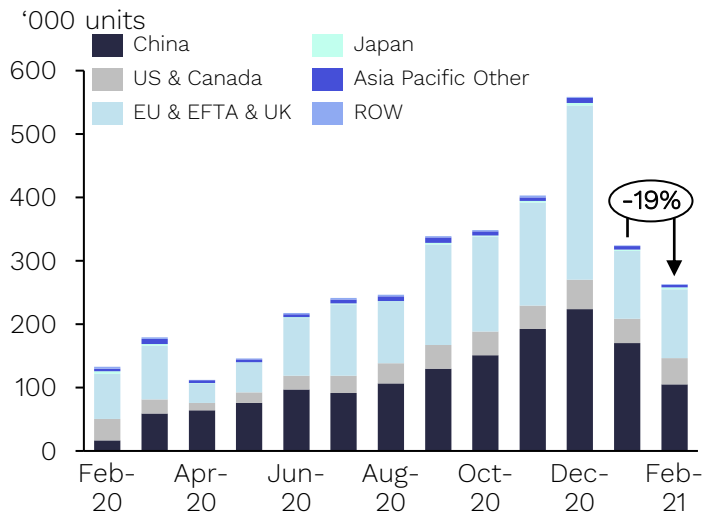




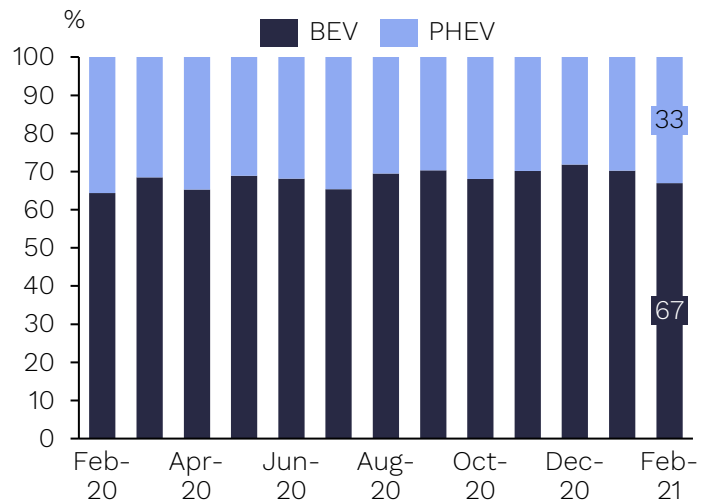
## EV Market Developments

- Overall BEV & PHEV sales decreased by 20% m-o-m in February 2021. However, Y-o-Y sales increased by 98% across all vehicle classes. PC & LDV sales in China were 105,000 in February 2021.
- In the EU & EFTA & UK region sales reached 109,000, of which 55% were PHEVs. The Y-o-Y growth is mainly the result of the Covid impact in China in early 2020, which saw EV sales fall to less than 20,000 in February 2020.
- Several new models were released in China in February 2021, including VW-FAW's ID.4 Crozz BEV, BYD's Qin Pro DM PHEV, and Honda's EA6 BEV. The new models have maximum charging capabilities of 100kW, 7kW and 60kW respectively.
- There will be two versions of the ID.4 in China. Firstly, the ID.4 Crozz released by VW-FAW in February. Secondly, the ID.4 X which is due to be released by the VW-SAIC joint venture. The Chinese models have a GB/T plug and 100kW maximum charging capability.

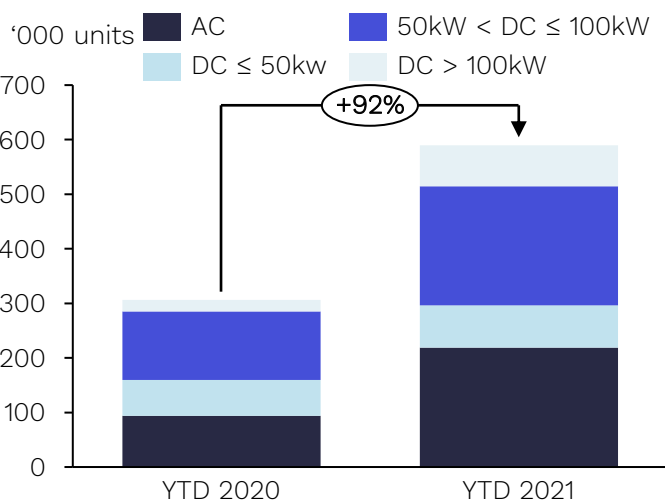
## Regional Monthly PC & LDV EV sales



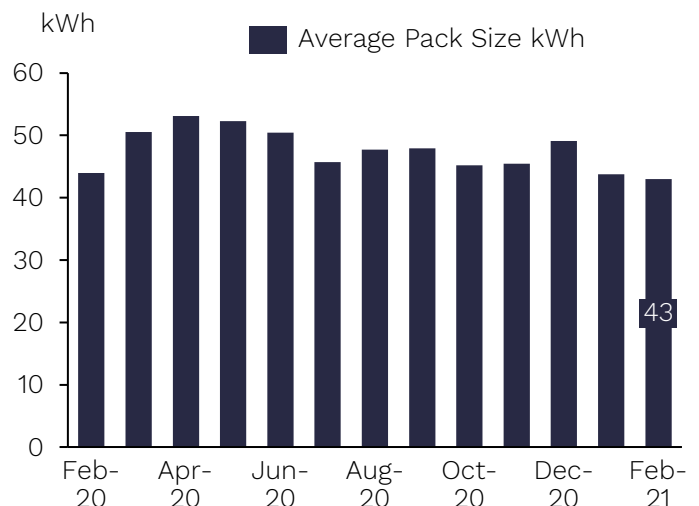
## Global PC & LDV BEV/PHEV market share



## Global Year-to-date PC & LDV EV sales

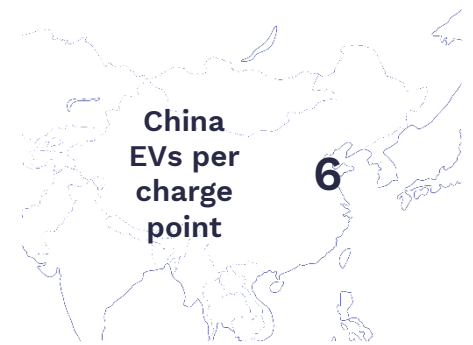
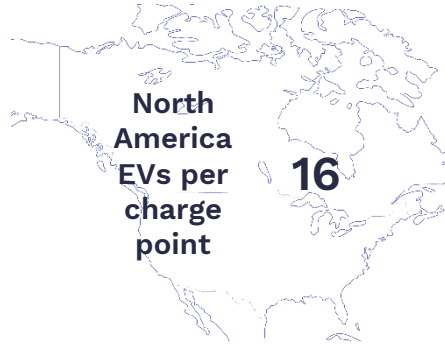
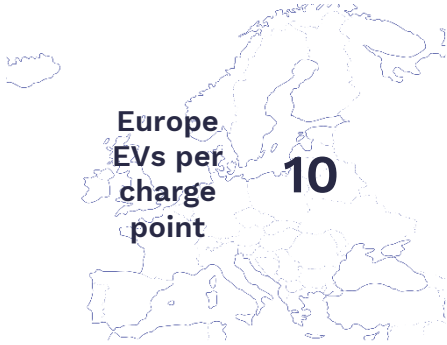


## Monthly Sales weighted average EV battery pack sizes all PC & LDV

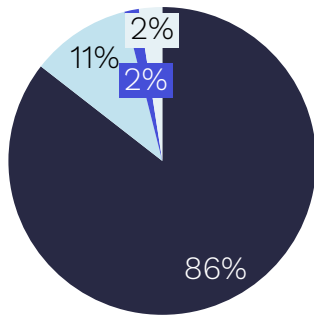




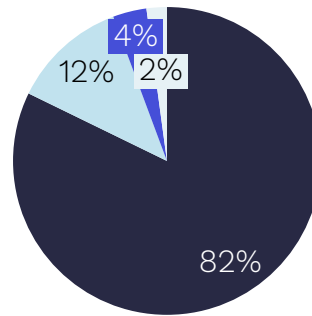
## Network development



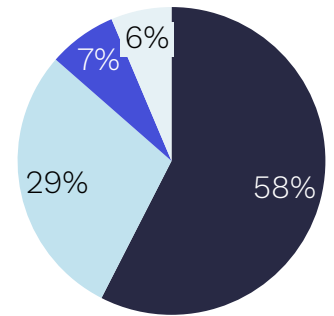
EU & EFTA & UK charging stations by power, Q4 2020



North America charging stations by power, Q4 2020



China charging stations by power, Q4 2020



## Global market share summary by charging capability, Q4 2020

Charging station power	EU & EFTA & UK	North America	China
AC	248,885	89,983	413,001
DC ≤ 50kw	30,582	13,252	207,730
50kw < DC < 150kw	4,424	3,871	51,608
DC ≥ 150kw	7,104	2,335	45,708
<b>Total</b>	<b>290,995</b>	<b>109,440</b>	<b>718,046</b>



## Global market share summary by charging capability, year-to-date

EV charging capability	YTD Sales '000 (% of total)		Fleet '000 (% of total)	
AC	219	37%	3,217	31%
DC ≤ 50kw	77	13%	1,738	17%
50kW < DC ≤ 100kW	218	37%	4,548	44%
DC > 100kW	75	13%	753	7%
<b>Total</b>	<b>589</b>		<b>10,256</b>	

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### Assessment Methodology

Rho Motion's *Electric Vehicle Charging Assessment* provides an analysis of the maximum charging capacity of global and regional passenger car and light duty vehicle sales and fleets, as well as a fleet energy demand considering energy consumption per 100km and annual vehicle kms driven.

Electric vehicle sales data is collected on a model-by-model basis from automotive associations, OEMs and data providers at country level for both BEV and PHEV vehicles for major markets. This analysis covers a minimum of 90% of total global market sales and provides a balanced representation of markets with different vehicle characteristics, suppliers and seasonality.

Where EV specific model data is not explicitly stated estimates are used based on industry and company reports and primary research. These are then corroborated or adjusted when official data becomes available. For each vehicle model we collect data relating to maximum AC and DC charging capability, plug type(s), battery pack size and battery chemistry in addition to a number of other vehicle metrics.

The data for the number of charging stations for each region is collected from multiple sources including national associations, company financial reports, primary research and open-source data.

### Assessment Glossary

**Vehicle:** EV – Electric Vehicle, BEV – Battery Electric Vehicle, PHEV – Plug-in Hybrid Electric Vehicle, PC – passenger car, LDV – Light Duty Vehicle, MD – Medium Duty, HD – Heavy Duty, CV – Commercial Vehicle

**Charging:** AC – Alternate Current, DC ≤ 50kW – Direct Current up to and including 50kW, 50kW < DC ≤ 100kW – Direct Current greater than 50kW and up to and including 100kW, DC > 100kW – Direct Current over 100kW.