

EV Motor Materials Monthly Report

Contents

Motor Power Deployed

- By Region
- By Automaker
- By Motor Supplier
- By Motor Type

NdFeB Magnets Deployed

- By Region
- By Automaker
- By Motor Supplier
- By EV Type

Market Developments

- Supply
- Demand

Price Developments

- Rare Earth Oxides
- Rare Earth Metals
- NdFeB Alloys

For subscriptions or press inquiries contact:

Email: info@adamasintel.com
Phone: +1 (437) 230 8030

See last page for Disclaimer

In October 2024, Global Passenger EV Sales Down <1% Month-over-Month but Up 30% Year-over-Year

In October 2024, total passenger EV sales in the Asia Pacific region amounted to 1,580,329, up 4.3% month-over-month and 42.2% over the same month the year prior.

In Europe total passenger EV sales amounted to 386,774 in October 2024, down 16.0% month-over-month but up 2.2% over the same month the year prior.

Moreover, in the Americas, total passenger EV sales amounted to 324,775 in October 2024, up 3.7% month-over-month and 19.1% over the same month the year prior.

In October 2024, Global Motor Power Deployment Down 2% Month-over-Month but Up 38% Year-over-Year

In October 2024, total global motor power deployed onto roads in all newly sold passenger EVs combined amounted to 367.5 GW, down 1.6% month-over-month but up 38.3% over the same month the year prior on the back of 36.9% BEV and PHEV sales growth and 11.8% HEV sales growth worldwide.

By motor type, permanent magnet motors ("PMs") were responsible for 91% of all motor power deployed onto roads globally in October 2024, and by EV maker BYD, Tesla and Toyota were collectively responsible for 34% of all EV motor power deployed globally.

The sales-weighted average ("SWA") motor power of all passenger xEVs (HEVs, PHEVs and BEVs) sold globally in October 2024 was 158.4 kW, up 6.5% from 148.7 kW in October 2023.

367.5 GW of Passenger EV Traction Motor Power Deployed Globally in October 2024

Region	Country	Motor Type	Motor Make	EV Make	EV Model	EV Type

Full graphs visible to subscribers



Motor Power Deployed by Region

In Asia Pacific, Motor Power Deployment Up 54% Year-over-Year in October 2024

In October 2024, a total of 255.5 GW of passenger EV traction motor power was deployed onto roads in the Asia Pacific region (90% in China alone), up 2.4% month-over-month and 54.2% over the same month the year prior.

In China specifically, passenger EV sales totaled 1,320,005 in October 2024, up 4.9% month-over-month and 49.6% year-over-year.

In the Americas, Motor Power Deployment Up 13% Year-over-Year in October 2024

In the Americas, a total of 56.3 GW of passenger EV traction motor power was deployed onto roads in October 2024 (82% in the U.S. alone), up 3.3% month-over-month and 13.0% over the same month the year prior.

In October 2024, passenger EV sales in the Americas totaled 324,775, up 3.7% month-over-month and 19.1% year-over-year.

Share of Motor Power Deployed by Country

Full graph visible to subscribers

Asia Pacific Europe Americas ROW

Source: Adamas Intelligence data

In Europe, Motor Power Deployment Up 10% Year-over-Year in October 2024

In Europe, a total of 51.3 GW of passenger EV traction motor power was deployed onto roads in October 2024, a 19.5% decrease month-over-month but a 10.2% increase over October 2023.

In Europe, passenger EV sales totaled 386,774 in October 2024, down 16.0% month-over-month but up 2.2% year-over-year.

Passenger EV Traction Motor Power Deployment by Region in October 2024

Full graph visible to subscribers

367.5 GW

ROW, 1%

Americas, 15%

Europe, 14%

Asia Pacific, 70%

	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Asia													
Europe													
Americas													
ROW													
World													
Δ MoM													

* Units in GW

Full table visible to subscribers

Source: Adamas Intelligence



Motor Power Deployed by Automaker

BYD in the Lead, Motor Power Deployment Up 69% Year-over-Year in October 2024

In October 2024, BYD deployed 62.9 GW of passenger EV traction motor power onto roads globally, up 12.6% month-over-month and 69.3% over the same month the year prior as the automaker's monthly EV sales rose 64.0% year-over-year.

In total, BYD sold 447,381 passenger EVs (43% BEVs, 57% PHEVs) globally in October 2024 with a sales-weighted-average motor power of 140.7 kW per EV, up 3.2% from 136.2 kW in October 2023.

Tesla in Second, Motor Power Deployment Up 5% Year-over-Year in October 2024

In October 2024, Tesla deployed 34.1 GW of passenger EV traction motor power onto roads globally, down 35.6% month-over-month but up 4.9% over the same month the year prior.

In total, 121,160 Tesla passenger EVs (all BEVs) were registered globally in October 2024 with a sales-weighted-average motor power of 281.4 kW per EV, down 0.4% from 282.6 kW in October 2023.

Toyota in Third, Motor Power Deployment Up 20% Year-over-Year in October 2024

In October 2024, Toyota deployed 27.1 GW of passenger EV traction motor power onto roads globally, up 0.2% month-over-month and 20.2% over the same month the year prior as global monthly sales of Toyota EVs rose 18.2% over the same period.

In total, Toyota sold 305,855 passenger EVs (92% HEVs) globally in October 2024 with a sales-weighted-average motor/generator power of 88.5 kW per EV, up 1.7% from 87.0 kW in October 2023.

Li Auto in Fourth, Motor Power Deployment Up 27% Year-over-Year in October 2024

In October 2024, Li Auto deployed 22.1 GW of passenger EV traction motor power onto roads globally, down 4.4% month-over-month but up 27.2% over the same month the year prior as the automaker's monthly EV sales rose 31.8% year-over-year.

In total, Li Auto sold 53,262 passenger EVs (98% PHEVs) in October 2024 with a sales-weighted-average motor/generator power of 415.0 kW per EV, down 3.5% from 430.0 kW in October 2023.

Passenger EV Traction Motor Power Deployed by Automaker in October 2024 (Top 10)

Full graph visible to subscribers



Motor Power Deployed by Motor Supplier

BYD in the Lead, Motor Power Deployment Up 74% Year-over-Year

In October 2024, BYD deployed 71.1 GW of passenger EV traction motor power onto roads globally in, amongst others, BYD, Denza, DFSK, and Toyota EVs, up 13.3% month-over-month and 73.9% over the same month the year prior as sales of BYD-powered EVs grew 61.3% over the same period.

Overall, the sales-weighted average EV equipped with a BYD motor in October 2024 had a peak power of 150.3 kW, up 7.8% from 139.4 kW in October 2023.

Toyota Group Companies in Second, Motor Power Deployment Up 18% Year-over-Year

As supplier to Toyota, Lexus and a handful of other Toyota Motor Company brands, Toyota Group Companies (including Denso and Aisin Seiki) deployed 34.7 GW of traction motor/generator power globally in October 2024, down 0.7% month-over-month but up 18.1% over the same month the year prior as the group's EV sales grew 17.1% over the same period.

Overall, the sales-weighted average EV equipped with a Toyota Group Companies motor/generator in October 2024 had a peak power of 94.8 kW, up 0.8% from 94.1 kW in October 2023.

Passenger EV Traction Motor Power Deployed by Motor Supplier in October 2024 (Top 10)

Tesla in Third, Motor Power Deployment Up 5% Year-over-Year in October 2024

In October 2024, Tesla deployed 34.1 GW of passenger EV traction motor power onto roads globally in its own EVs, down 35.6% month-over-month but up 4.9% year-over-year.

In total, PM motors were responsible for an estimated 75.3% of all motor power deployed onto roads globally by Tesla in October 2024, down from 76.4% the same month a year ago.

Huawei in Distant Fourth Place, Motor Power Deployment Up 194% Year-over-Year

In October 2024, Huawei deployed 16.3 GW of passenger EV traction motor/generator power onto roads globally, down 14.1% month-over-month but up 193.5% over the same month the year prior.

Overall, the sales-weighted average EV equipped with a Huawei motor in October 2024 had a peak power of 361.7 kW, up 2.9% from October 2023.

Full graph visible to subscribers



Motor Power Deployed by Motor Type

40% More Permanent Magnet Motor Power Deployed Onto Roads in October 2024 than October 2023

In October 2024, 333.3 GW of permanent magnet motor ("PM") power was deployed onto roads globally in all newly-sold passenger EVs combined, an increase of 40.4% over the same month the year prior.

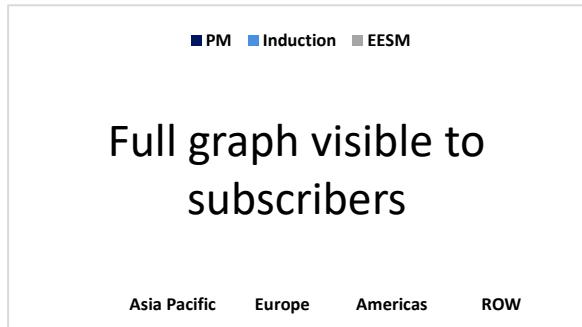
Over the same period, the global sales-weighted-average peak power of all passenger EV traction PMs combined increased 7.1%, from 137.1 kW per EV in October 2023 to 146.9 kW in October 2024.

37% More Induction Motor Power Deployed Onto Roads in October 2024 than October 2023

In October 2024, 23.6 GW of induction motor power was deployed onto roads globally in all newly-sold passenger EVs combined, a 36.7% increase over the same month the year prior.

Over the same period, the global sales-weighted-average peak power of all passenger EV induction motors combined increased 3.5% year-over-year, from 120.6 kW per EV in October 2023 to 124.9 kW in October 2024.

Sales-Weighted Average Motor Power by Region



Source: Adamas Intelligence data

3% Less Electrically-Excited Synchronous Motor Power Deployed in October 2024 than October 2023

In October 2024, 10.6 GW of electrically-excited synchronous motor ("EESM") power was deployed onto roads globally in all newly-sold passenger EVs combined, a decrease of 3.4% over the same month the year prior.

Over the same period, the global sales-weighted-average peak power of all passenger EV traction EESMs combined increased 2.1%, from 240.4 kW per EV in October 2023 to 245.4 kW in October 2024.

Passenger EV Traction Motor Power Deployed by Motor Type in October 2024

Full graph visible to subscribers

367.5 GW

EESM, 3%
Induction,
6%

PM, 91%

	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
PM													
Induction													
EESM													
Total													
Δ MoM													

Full table visible to subscribers

* Units in GW

Source: Adamas Intelligence

NdFeB Magnet Deployment Overview

Quick Facts

In October 2024:

- xx% of all passenger xEVs sold globally contained one or more traction PMs
- xx% of all passenger xEV traction motor power (kW) deployed onto roads globally was from PMs
- The global sales-weighted average PM peak motor power was xxx.x kW
- The sales-weighted average PM contained an estimated x.xx kilograms of NdFeB magnets
- China EV sales responsible for xx% of all NdFeB magnet deployment; Europe xx%; the U.S. xx%
- BYD was responsible for xx% of global NdFeB magnet deployment; Toyota xx%; Tesla xx%

Global Monthly Passenger EV Motor Power Deployment Up 38% Year-over-Year Translating to a 40% Increase in NdFeB Magnet Consumption

In October 2024, 38.3% more passenger EV motor power was deployed onto roads globally than the same month the year prior translating to a 40.3% increase in NdFeB magnet use in passenger EV traction motors and generators over the same period.

In October 2024, 3,996 tonnes of NdFeB magnets were deployed onto roads globally in the traction motors and generators of newly-sold passenger EVs, up 40.3% over October 2023 mostly on the back of moderate year-over-year BEV sales growth globally, strong PHEV sales growth in Asia Pacific and rising average motor power globally.

Magnet Deployment Up Year-over-Year Across the Globe

In October 2024, 2,871 tonnes of NdFeB magnets were deployed onto roads in the traction motors and generators of newly-sold passenger EVs in the Asia Pacific region, a 54.5% increase over the same month the year prior as motor power deployment in the region rose by 54.2% over the same period.

Moreover, in October 2024, 578 tonnes of NdFeB magnets were deployed onto roads in the traction motors and generators of newly-sold passenger EVs in the Americas, a 13.9% increase over October 2023 on the back of a 13.0% increase in motor power deployment over the same period.

Finally, in October 2024, 504 tonnes of NdFeB magnets were deployed onto roads in the traction motors and generators of newly-sold passenger EVs in Europe, an increase of 12.2% over the same month the year prior as motor power deployment in the region rose 10.2% over the same period.

3,996 Tonnes of NdFeB Magnets Deployed Globally in Passenger EV Traction Motors in October 2024

Region	Country	Motor Type	Motor Make	EV Make	EV Model	EV Type
Full graphs visible to subscribers						



NdFeB Magnets Deployed by Region

Asia Pacific NdFeB Magnet Deployment Up 55% Year-over-Year, Market Share Rose from 65% to 72%

In October 2024, 2,871 tonnes of NdFeB magnets were deployed onto roads in the traction motors/generators of newly-sold passenger EVs in the Asia Pacific region, a 54.5% increase over the same month the year prior.

In October 2024, Asia Pacific's share of global monthly NdFeB deployment amounted to 72%, up from 69% the month prior and 65% in October 2023.

NdFeB Magnet Deployment Up 14% Year-over-Year in the Americas, Market Share Fell from 18% to 14%

In October 2024, 578 tonnes of NdFeB magnets were deployed onto roads in the traction motors/generators of newly-sold passenger EVs in the Americas, a 13.9% increase over the same month the year prior.

In October 2024, the Americas' share of global monthly NdFeB magnet deployment amounted to 14%, unchanged from the month prior but down from 18% the same month the year prior.

Share of NdFeB Magnets Deployed by Country

Full graph visible to subscribers

Asia Pacific Europe Americas ROW

Source: Adamas Intelligence data

Europe's NdFeB Magnet Deployment Up 12% Year-over-Year, Market Share Fell from 16% to 13%

In October 2024, 504 tonnes of NdFeB magnets were deployed onto roads in the traction motors/generators of newly-sold passenger EVs in Europe, a 12.2% increase over the same month the year prior.

In October 2024, Europe's share of global monthly NdFeB magnet deployment amounted to 13%, down from 16% the month prior and the same month the year prior.

NdFeB Magnet Deployment in Passenger EV Traction Motors by Region in October 2024

Full graph visible to subscribers

3,996 tonnes

ROW, 1%

Americas,
14%

Europe,
13%

Asia
Pacific,
72%

Oct-23 Nov-23 Dec-23 Jan-24 Feb-24 Mar-24 Apr-24 May-24 Jun-24 Jul-24 Aug-24 Sep-24 Oct-24

Asia Pacific

Europe

Americas

ROW

World

Δ MoM

Full table visible to subscribers

* Units in Tonnes

Source: Adamas Intelligence



NdFeB Magnets Deployed by Automaker

BYD in the Lead, Magnet Deployment Up 68% Year-over-Year in October 2024

In October 2024, BYD deployed **xxx** tonnes of NdFeB magnets onto roads globally in the traction motors/generators of its newly-sold passenger EVs globally, up 68.4% year-over-year.

In total, BYD sold 447,381 passenger EVs (43% BEVs, 57% PHEVs) globally in October 2024 with an estimated sales-weighted-average NdFeB magnet consumption of **x.x** kg per EV (considering traction motor(s) and generator(s) only), up 2.7% from October 2023.

Toyota in Second, Magnet Deployment Up 20% Year-over-Year in October 2024

In October 2024, Toyota deployed **xxx** tonnes of NdFeB magnets onto roads in the traction motors/generators of its newly-sold passenger EVs globally, up 20.2% over the same month the year prior.

In total, Toyota sold 305,855 passenger EVs (92% HEVs) globally in October 2024 with an estimated sales-weighted-average NdFeB consumption of **x.x** kg each (considering traction motor(s) and generator(s) only), up 1.7% from October 2023.

Tesla in Third, Magnet Deployment Up 3% Year-over-Year in October 2024

In October 2024, Tesla deployed **xxx** tonnes of NdFeB magnets onto roads in the traction motors of newly-delivered passenger EVs globally, up 3.3% over the same month the year prior.

In total, Tesla delivered 121,160 passenger BEVs globally in October 2024 with an estimated sales-weighted-average NdFeB consumption of **x.x** kg per EV (considering traction motor(s) and generator(s) only), down 1.9% from October 2023.

Li Auto Remained in Fourth, Magnet Deployment Up 26% Year-over-Year in October 2024

In October 2024, Li Auto deployed **xxx** tonnes of NdFeB magnets onto roads in the traction motors/generators of its newly-sold passenger EVs globally, up 26.4% over the same month the year prior.

In the fifth spot, AITO deployed **xxx** tonnes of NdFeB magnets onto roads globally in traction motors/generators in October 2024, up 140.1% year-over-year.

NdFeB Magnet Deployment in Passenger EV Traction Motors by Automaker in October 2024 (Top 10)

Full graph visible to subscribers



NdFeB Magnets Deployed by Motor Maker

BYD in the Lead, 73% More NdFeB Deployed in October 2024 than Same Month a Year Ago

In October 2024, BYD deployed **xxx** tonnes of NdFeB magnets onto roads in newly-sold passenger EV motors/generators globally, up 13.3% month-over-month and 72.9% year-over-year.

Overall, the global sales-weighted average EV deployed with a BYD motor/generator in October 2024 contained an estimated **x.x** kg of NdFeB, up 7.2% from October 2023.

Toyota Group Companies in Second, NdFeB Deployment Up 18% Year-over-Year in October 2024

Toyota Group Companies (including Denso and Aisin Seiki) collectively deployed an estimated **xxx** tonnes of NdFeB magnets onto roads globally in newly-sold passenger EV traction motors/generators in October 2024, down 0.7% month-over-month but up 18.1% year-over-year.

Overall, the global sales-weighted average EV equipped with a Toyota Group Companies motor/generator in October 2024 contained an estimated **x.x** kg of NdFeB magnets, up 0.8% from October 2023.

Tesla in Third, NdFeB Deployment Up 3% Year-over-Year in October 2024

As motor supplier to itself only, Tesla deployed an estimated **xxx** tonnes of NdFeB magnets onto roads globally in the PM traction motors of its newly-delivered EVs in October 2024, down 36.9% month-over-month but up 3.3% over the same month the year prior.

In total, the Tesla Model Y and 3 were responsible for 68% and 21% of Tesla's NdFeB deployment in October 2024, respectively, and the other models were collectively responsible for the remaining 10%.

HYCET in Fourth, NdFeB Deployment Up 7% Year-over-Year in October 2024

In October 2024, HYCET deployed **xxx** tonnes of NdFeB magnets onto roads in newly-sold passenger EV traction motors/generators globally, down 0.6% month-over-month but up 7.0% year-over-year.

Overall, the global sales-weighted average EV deployed with HYCET motors/generators in October 2024 contained an estimated **x.x** kg of NdFeB, down 17.2% from October 2023.

NdFeB Magnet Deployment in Passenger EV Traction Motors by Motor Supplier in October 2024 (Top 10)

Full graph visible to subscribers



NdFeB Magnets Deployed by EV Type

Magnet Demand for BEVs Up 31% Year-over-Year in October 2024, BEVs Fuel 48% of Global Deployment

In October 2024, 1,930 tonnes of NdFeB magnets were deployed onto roads globally in the traction motors and generators of newly-sold battery electric vehicles ("BEVs"), a 30.7% increase over the same month the year prior.

In total, BEVs were responsible for 48% of all NdFeB deployed globally in passenger EV traction motors/generators in October 2024, down from 52% in October 2023.

Magnet Demand for PHEVs Up 75% Year-over-Year in October 2024, PHEVs Drive 38% of Global Deployment

In October 2024, 1,501 tonnes of NdFeB magnets were deployed onto roads globally in the traction motors and generators of newly-sold plug-in hybrid electric vehicles ("PHEVs"), a 74.7% increase over the same month the year prior.

In October 2024, PHEVs were responsible for 38% of all NdFeB deployed globally in passenger EV traction motors and generators, up from 30% in October 2023.

Sales Weighted Average NdFeB Use per EV Type



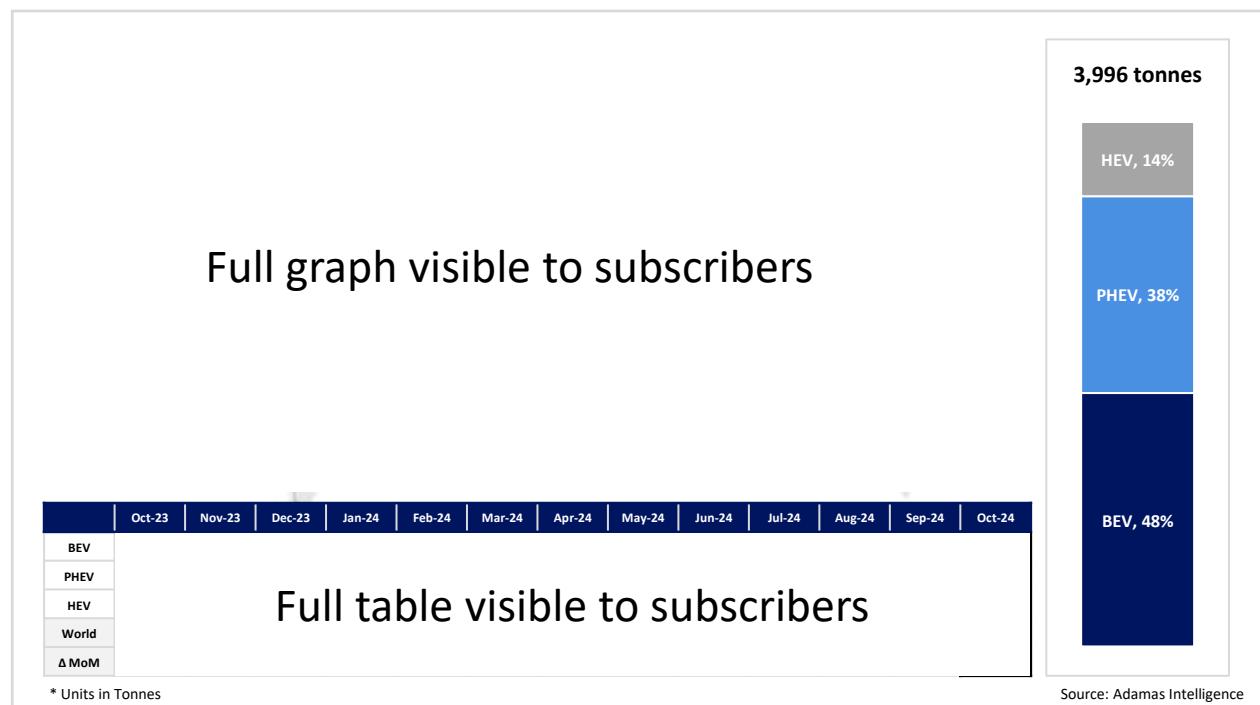
Source: Adamas Intelligence data

Magnet Demand for HEVs Up 10% Year-over-Year in October 2024, HEVs Drive 14% of Global Deployment

In October 2024, 565 tonnes of NdFeB magnets were deployed onto roads globally in the traction motors and generators of newly-sold hybrid electric vehicles ("HEVs"), a 10.1% increase over the same month the year prior.

In total, HEVs were responsible for 14% of all NdFeB deployed globally in passenger EV traction motors/generators in October 2024, down from 18% in October 2023.

NdFeB Magnet Deployment in Passenger EV Traction Motors by EV Type in October 2024

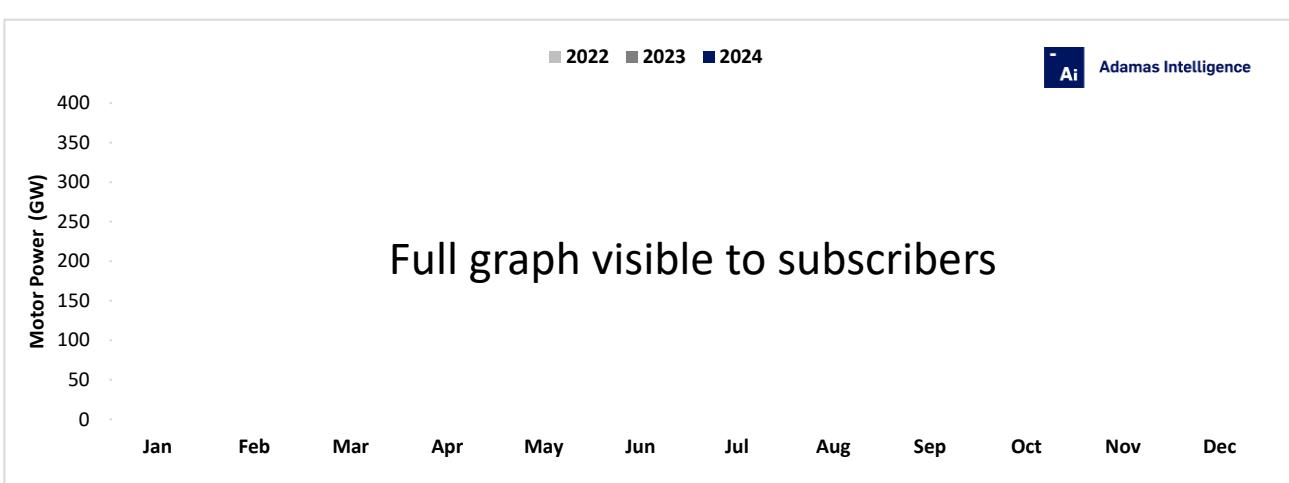


EV Registrations and Motor Power: 3-Year Trends

Global Monthly Passenger EV Sales: 3-Year Trend



Global Monthly Motor Power Deployment (PM only): 3-Year Trend

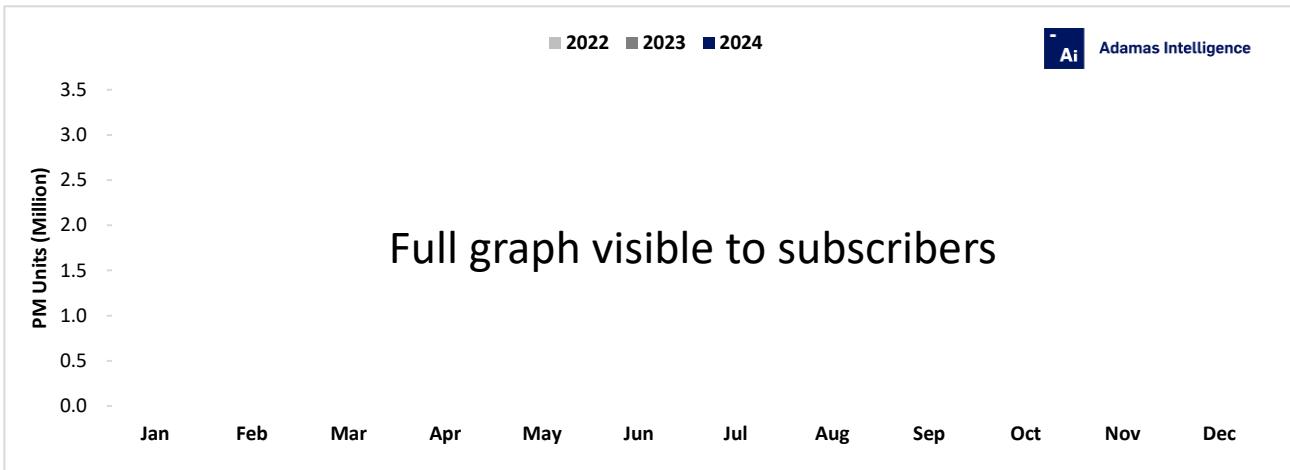


Global Sales Weighted Average Motor Power per EV (PM only): 3-Year Trend

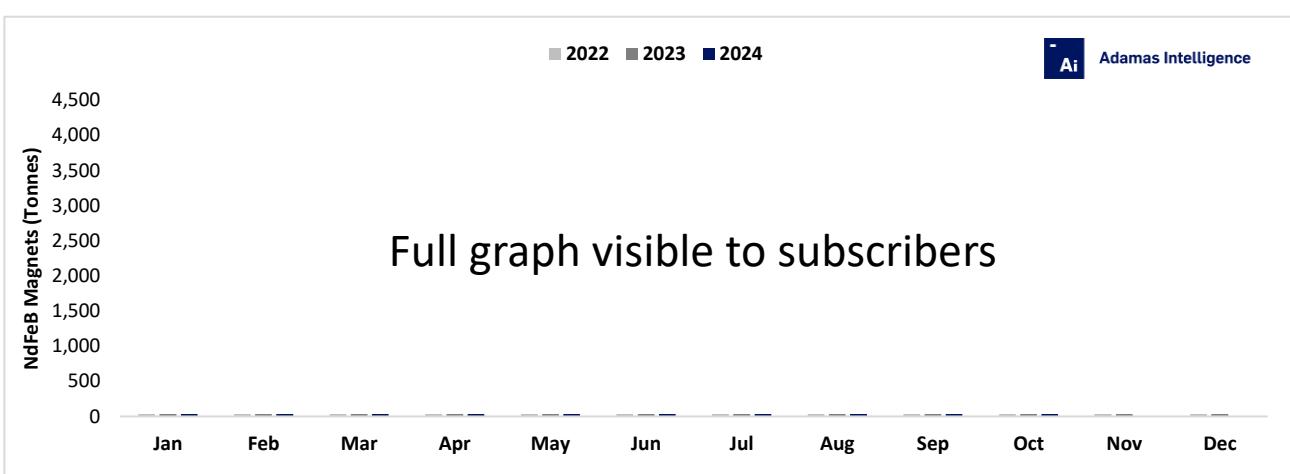


Motor Units and NdFeB Magnets: 3-Year Trends

Global Monthly PM Unit Deployment: 3-Year Trend



Global Monthly NdFeB Magnet Deployment in PMs: 3-Year Trend



Global Sales Weighted Average NdFeB Magnet Deployment per EV (PM only): 3-Year Trend



Disclaimer and Terms of Use

Disclaimer and Terms of Use:

This report is copyright and confidential. This report is not for public distribution and may not be reproduced or redistributed in part or whole without prior written permission from Adamas Intelligence.

This report is for private internal use of the company or organization that licenses it and may not be shared, co-licensed, or distributed among consortiums or multi-company organizations. The report may not be re-sold, reverse engineered or used to derive or produce similar reports, analysis or products. The report and accompanying data may not be used for training artificial intelligence or machine learning algorithms.

Apart from any use as permitted by law, all rights pertaining to this publication are reserved by Adamas Intelligence and associated copyrights are strictly and legally enforced. This report is watermarked with the licensee's name, company, and e-mail address to help Adamas Intelligence protect and enforce its copyrights.

The information provided in this report is from primary research, secondary research, and other sources that Adamas Intelligence believes to be reliable. Efforts have been made to ensure the accuracy of the data and information contained in this report, however, Adamas Intelligence does not guarantee or warrant the accuracy, reliability, or completeness of the information presented.

This report contains "forward-looking statements" – that is, statements related to future events. In this report, forward-looking statements address Adamas Intelligence's expectations of future supply, demand, production, consumption and prices within parameters defined by stated scenarios, and often contain words such as "forecast", "project", "expect," "anticipate," "intend," "plan," "believe," "seek," "see," or "will." Forward-looking statements by their nature address matters that are, to different degrees, uncertain.

A number of future uncertainties exist that could cause actual results to be materially different than those expressed in Adamas Intelligence's forward-looking statements. Readers are responsible for assessing the relevance and accuracy of these forward-looking statements. Adamas Intelligence will not be liable for any loss, damage, cost, or expense incurred or arising by any reason of any person or business using or relying on forward-looking statements, opinions or other information in this report.

Important Notes:

All prices referred to herein are in U.S. dollars unless specified otherwise.

Due to rounding, numbers presented throughout each monthly report may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.