

Global E-bike Market in 2025 & Fearless Forecast



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Light Electric Vehicle Association
July 16, 2025



For more granular data and segmentation on the North American E-bike market, the following report is available for purchase via eCycleElectric:

<https://www.ecycleelectric.com/shop/electric-bike-world-report-2024-north-america-region>

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MISSION: To provide information and make connections that unite, advance and improve the global Light Electric Vehicle (LEV) movement, focusing on electric two wheelers and their sub-components.

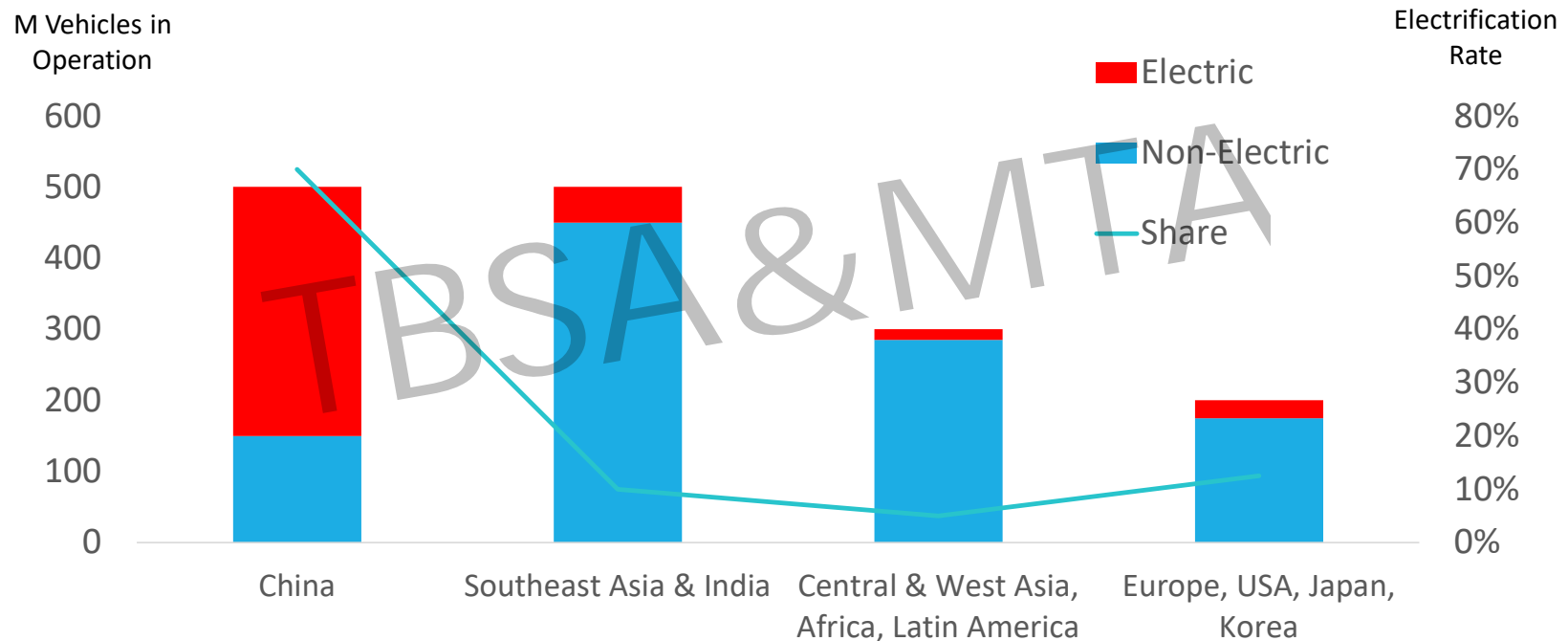


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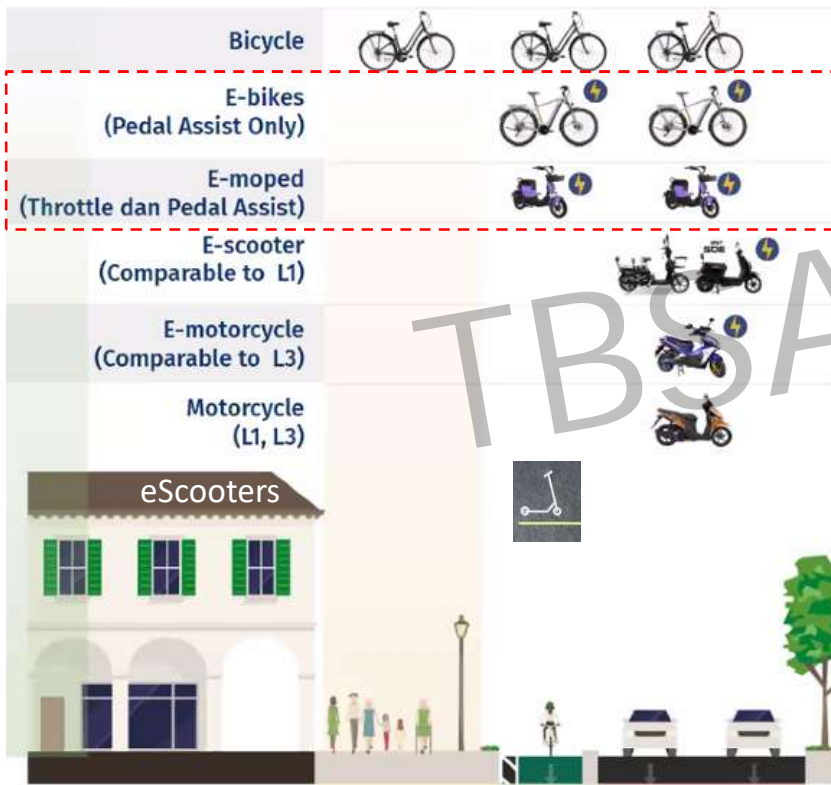
Global Two-Wheelers & Electrification Rate



Source: Weinert estimate (2024) based on various news sources

Almost 2 billion bicycles, e-bikes, eMopeds, etc in the world – electrification outside China still low

What's an "eBike"?



In US & Europe...



In Japan...



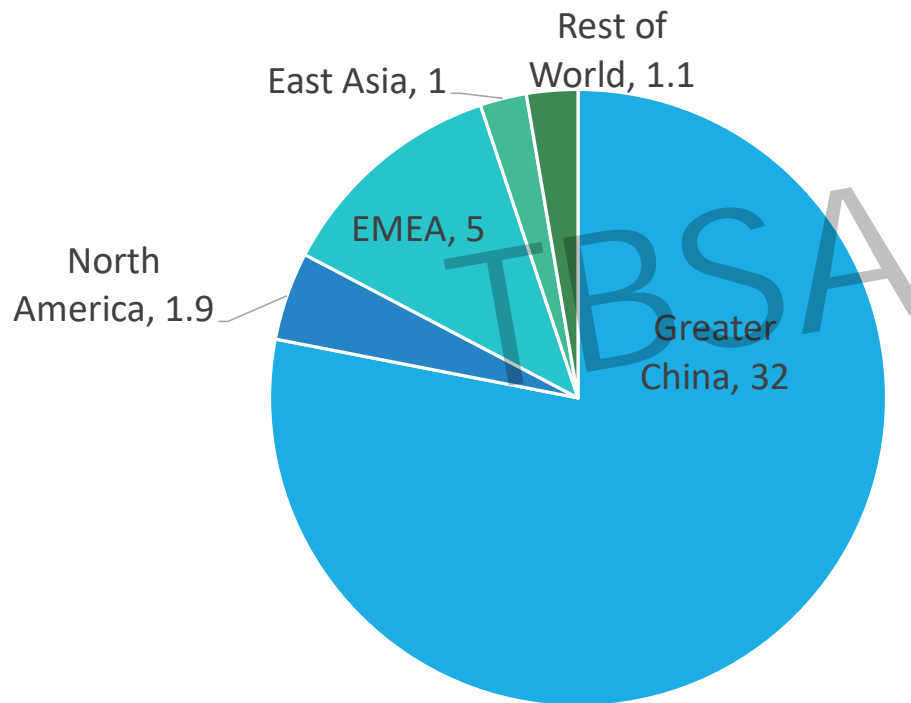
In China...

Source: Siregar (2024) ITDP Webinar

E-bikes are usually <30 kg, 25 km/hr, Li-ion powered, and sometimes pedaled

The Global E-bike Market (2024)

Market Share by Units (M Units/yr)



Most units in China, highest price per unit in EMEA

E-bike battery overview

North America, Europe, Japan:

- Mostly NCM 18650 or 21700 cells
- 36-48V, 400-900 Wh per pack
- Most modern designs integrate pack into the frame



China:

- Most sealed Pb-acid (for cost & public safety reasons)
- Shared e-bikes: LFP prismatic cells, mainly 48V, 500-1000 Wh



Mix of low-voltage Pb-acid for China, and Li-ion for the rest. Capacity per pack slowly increasing.

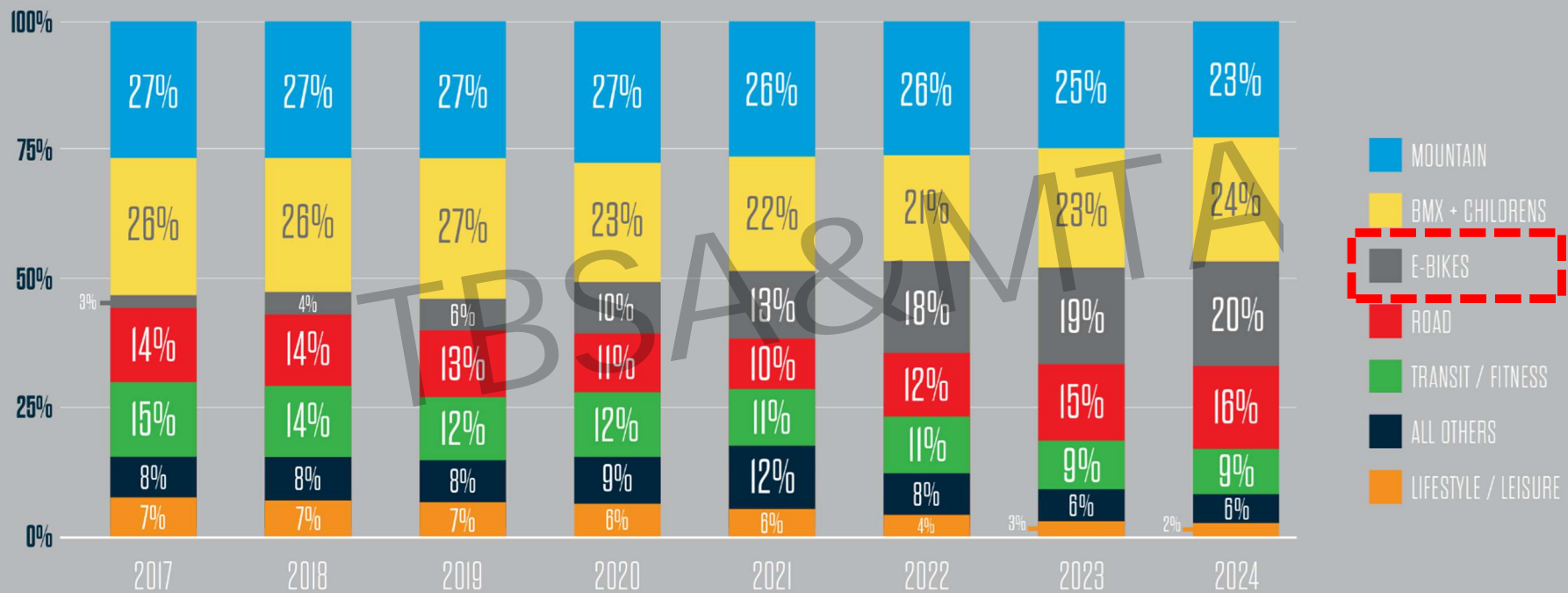


U.S. Bicycle & E-Bike Market

TBSA & MIT

BICYCLE CATEGORY MARKET SHARE

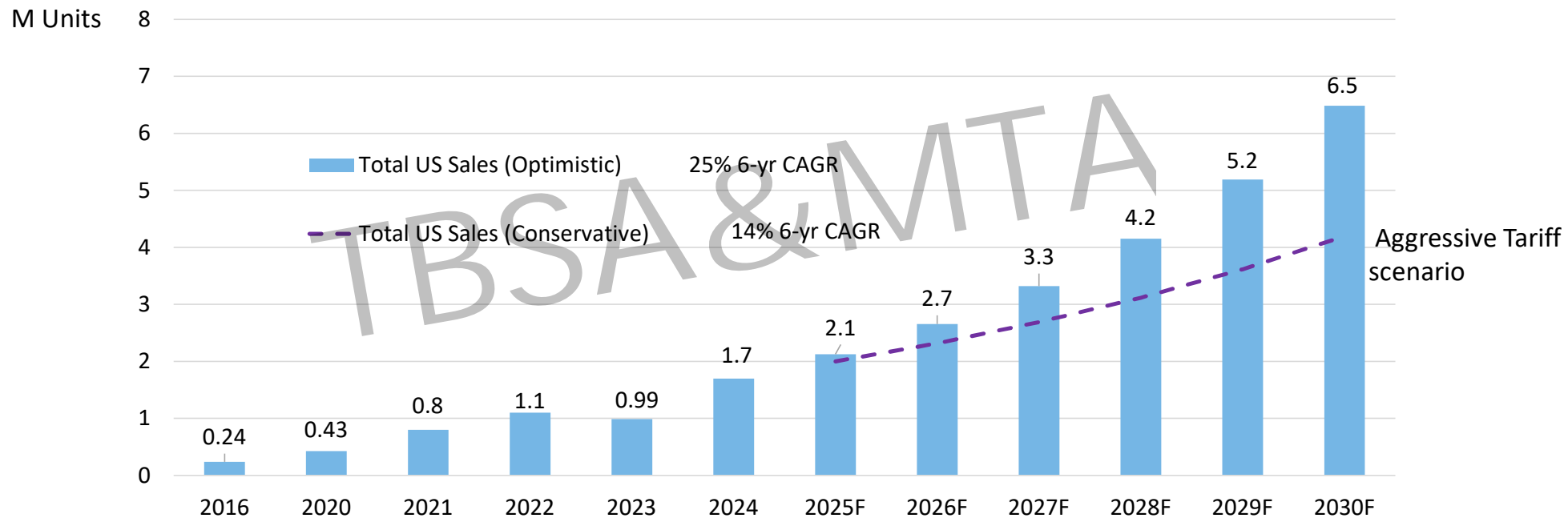
RELATIVE MARKET VALUE GENERATED BY BICYCLE CATEGORIES SOLD THROUGH ALL CHANNELS FROM 2017 TO PRESENT



PeopleForBikes Data, doesn't capture all D2C sales (25-30% of market)

E-bikes gaining share of overall bicycle sales (estimated 20% of total market by value)

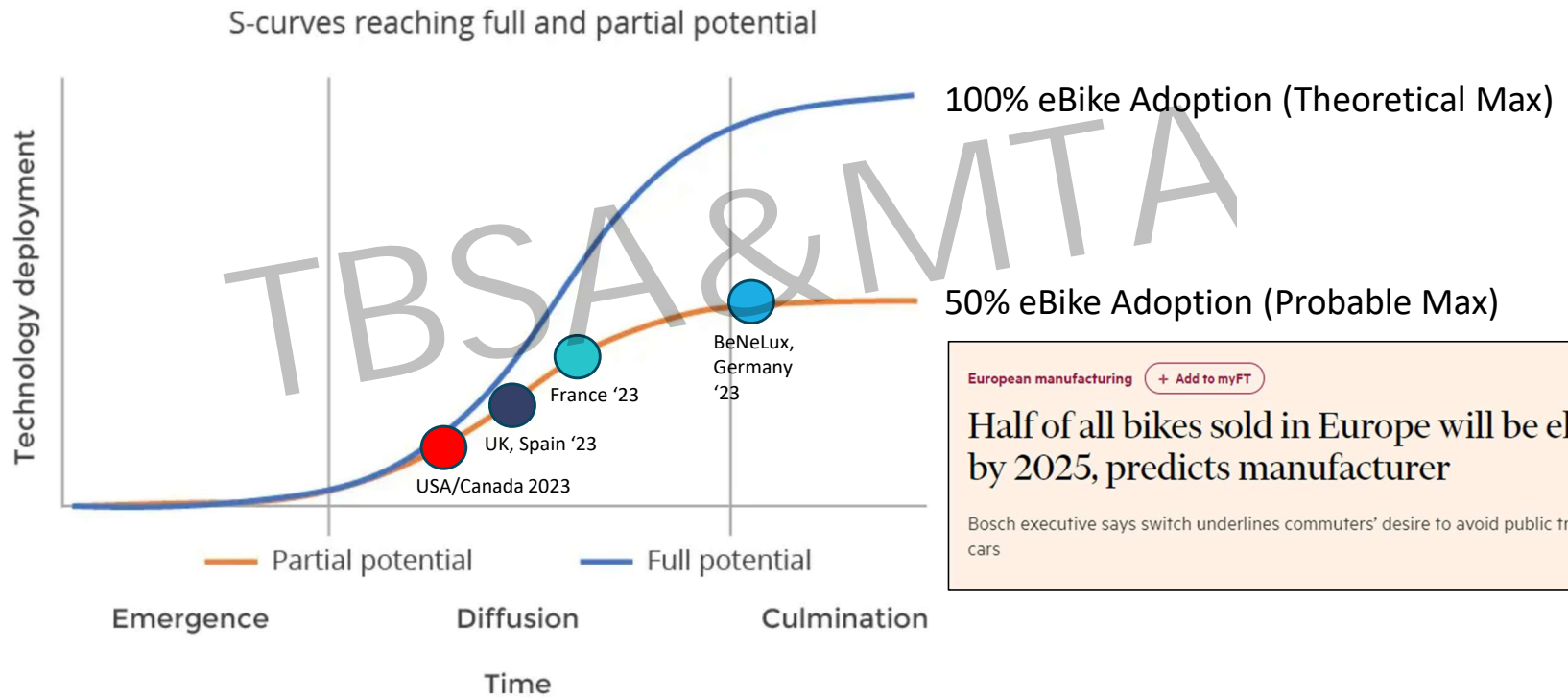
U.S. eBike Imports & Forecast



Source: 2016-2024 based on USCBP e-bike import records analyzed by eCycleElectric.

Stronger than expected 2024 gives us more confidence in reaching ~7M by 2030 (~25% CAGR)

Optimistic Forecast Basis



European manufacturing [+ Add to myFT](#)

Half of all bikes sold in Europe will be electric by 2025, predicts manufacturer

Bosch executive says switch underlines commuters' desire to avoid public transport and cars

Hypothesis: most markets will stabilize (saturate) once 1 in every 2 bikes sold is electric

Market Segmentation by Type



NA E-bike market incredibly diverse due to flexible e-bike regulation and wide range of uses (utility to recreation)

Trends impacting E-bike Adoption

Tailwind Trends

Political

Investment in cycling infrastructure at all time high (\$13B in combined federal, state, municipal projects) in U.S. history.¹

eBike rebates available in 41 states throughout the US and Canada

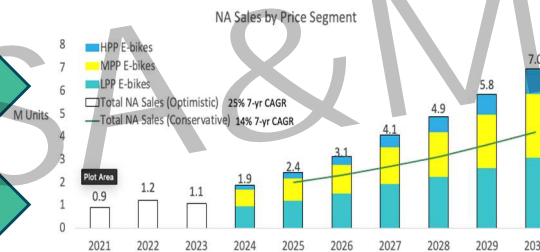
Tech

Li-ion battery quality and cost improve with economies of scale and competition

Social, Economic

Urbanization and the rise of corporate cycling incentives, bike share, food delivery

"50% eBike Share" Sales Projection



Headwind Trends

eBike tariffs

Battery fires leading to stringent safety regulations (e.g. UL-2849) and parking restrictions on e-bikes. CPSC regulation change possible.

E-bike injuries on the rise, especially amongst youth

Sources:

1. <https://www.peopleforbikes.org/news/billions-of-dollars-are-available-for-bike-projects>

Tailwinds expected to overcome the headwinds and lead to strong growth through 2030

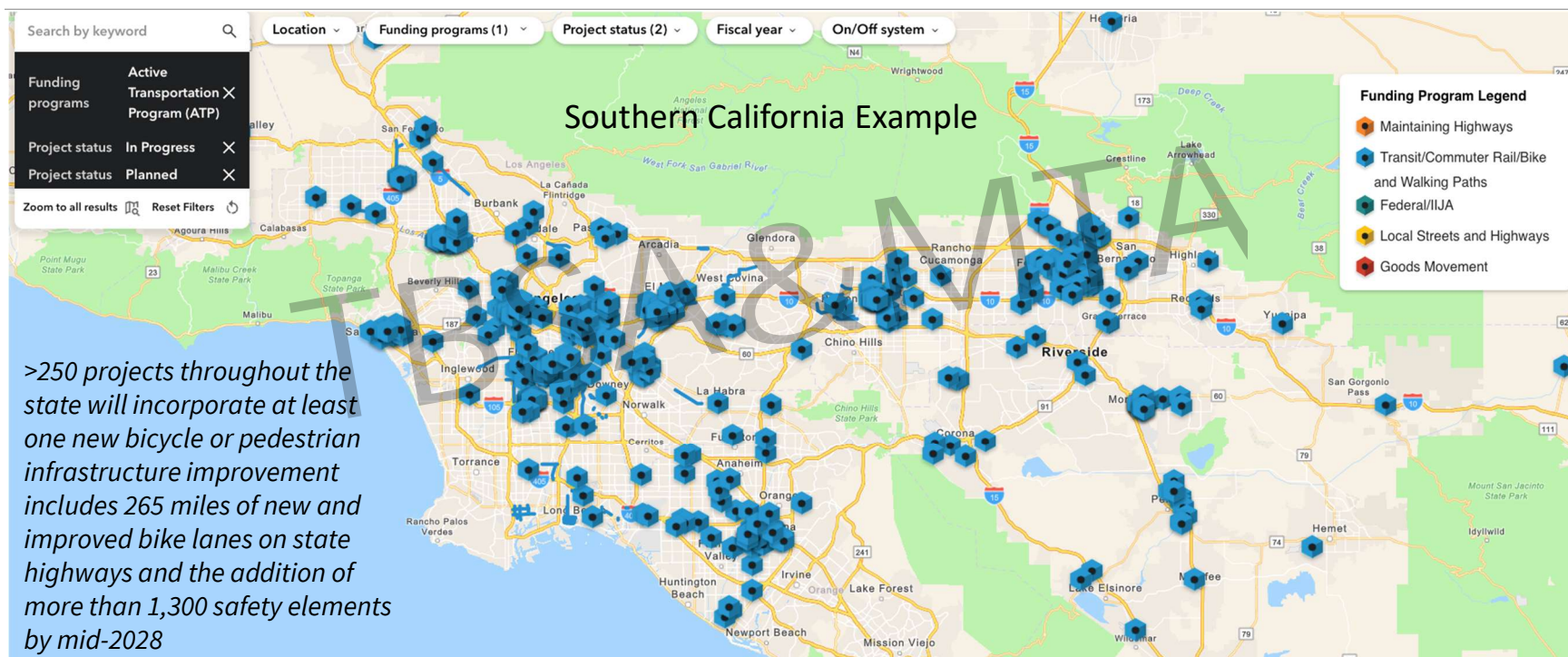
The Tailwinds...

Teens & E-bikes



For teens around America, e-bikes represent new-found freedom, friends, and fun

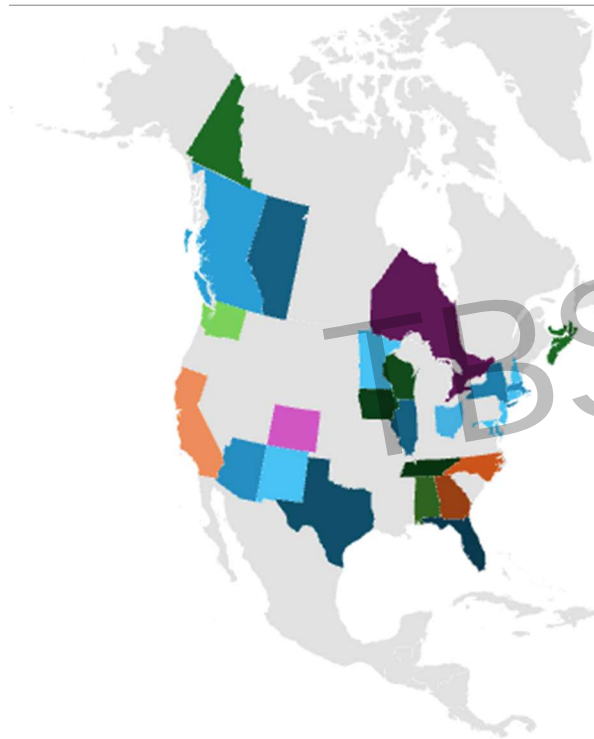
Bike Infrastructure Investments



Source: (2024) <https://dot.ca.gov/caltrans-near-me/district-7/district-7-news/ctc-invests> & <https://build.ca.gov/map> accessed Feb 2025

California investing ~\$1 billion in Bike & Ped. infrastructure over next 4 years

E-bike Rebate Programs



34 States in US
7 States in Canada
offer e-bike purchase
incentives



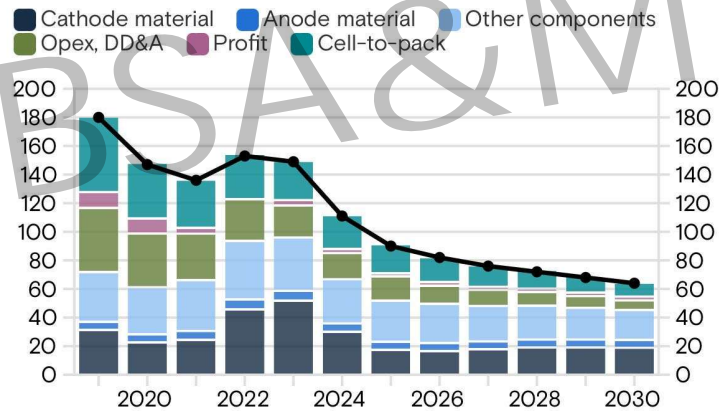
Source: MacArthur and Bennett, Portland State University, "E-Bike Incentive Programs of North America Tracker", Updated Aug 2024

Rebates programs are spreading to reduce the up-front purchase cost barrier

Batteries are getting cheaper / safer

Battery prices forecast to continue to fall

Global: average battery pack prices (US\$/kWh)



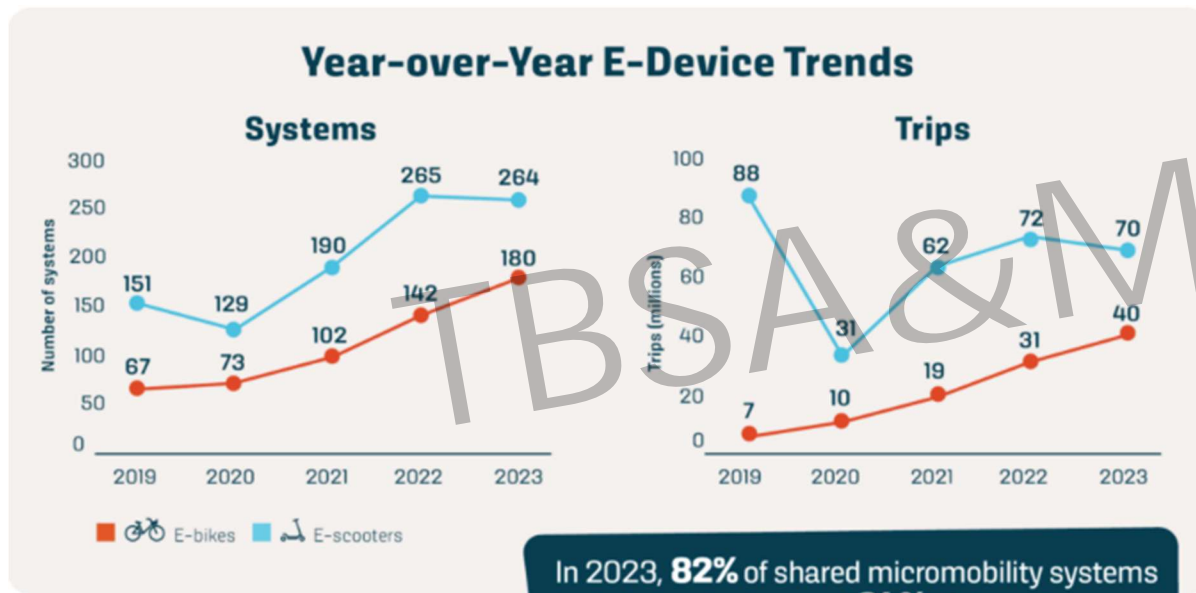
Source: Company data, Wood Mackenzie, SNE Research, Goldman Sachs Research
2024- 2030 are forecasts

Accessed Oct 2024

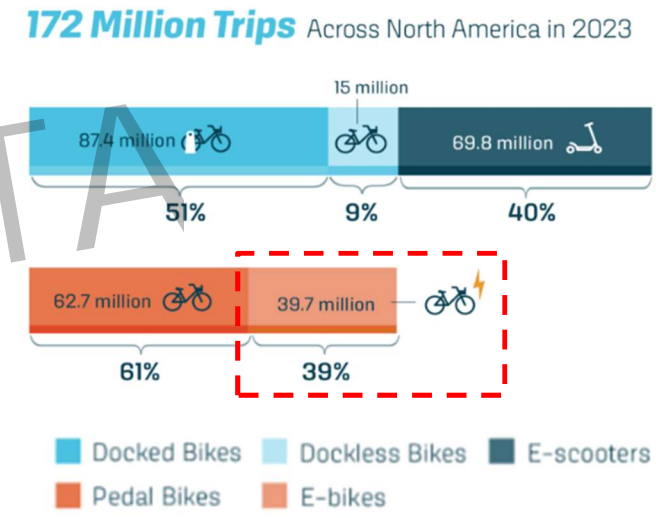
Goldman Sachs

E-bikes will continue to get more useful, fun, and safe, and affordable

Municipal Bike Share Trends



In 2023, **82%** of shared micromobility systems included e-devices and **64%** of shared micromobility trips were taken on e-devices.



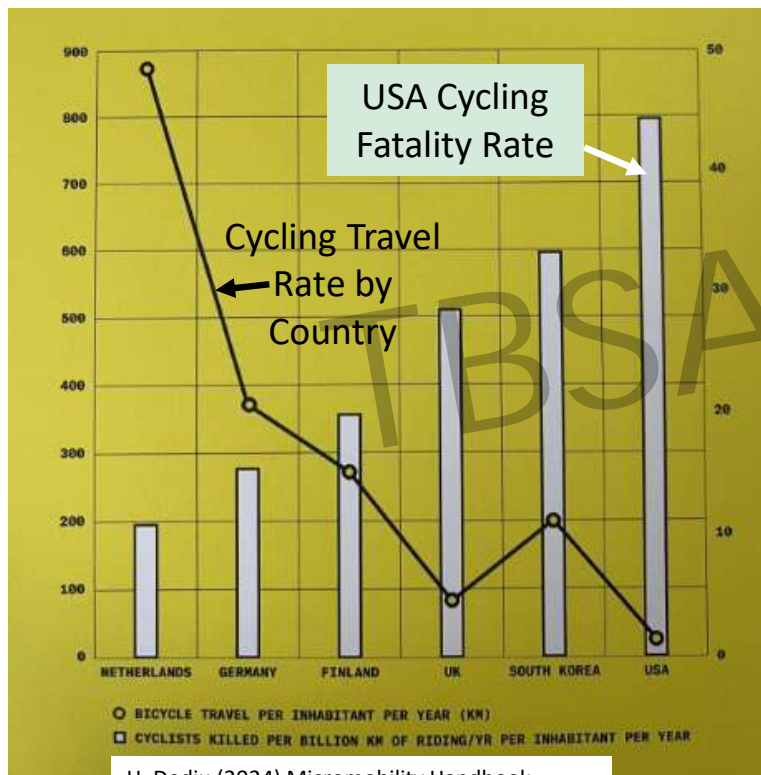
Source: NABSA, Aug 2024, Shared Micromobility State of the Industry Report: <https://nabsa.net/2024/08/06/2023industryreport/>

180 shared e-bike systems (docked and dockless) made 40M trips in 2023 (25% YoY increase)

Headwinds...

FBSA & MTA

Biking in USA still too risky

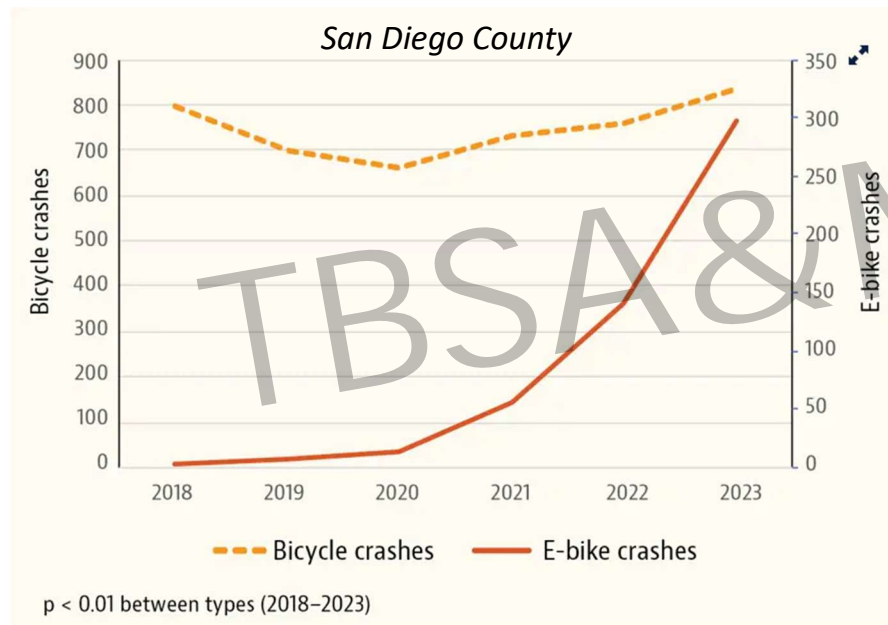


H. Dediu (2024) Micromobility Handbook



Fear of injury from cars scares off most “interested but concerned” bikers; current administration isn’t helping

E-bikes Emerging as Public Health Hazard



Source: <https://pmc.ncbi.nlm.nih.gov/articles/PMC10372360/>
<https://www.facs.org/for-medical-professionals/news-publications/news-and-articles/bulletin/2024/julyaugust-2024-volume-109-issue-7/electric-bikes-are-emerging-as-public-health-hazard/>

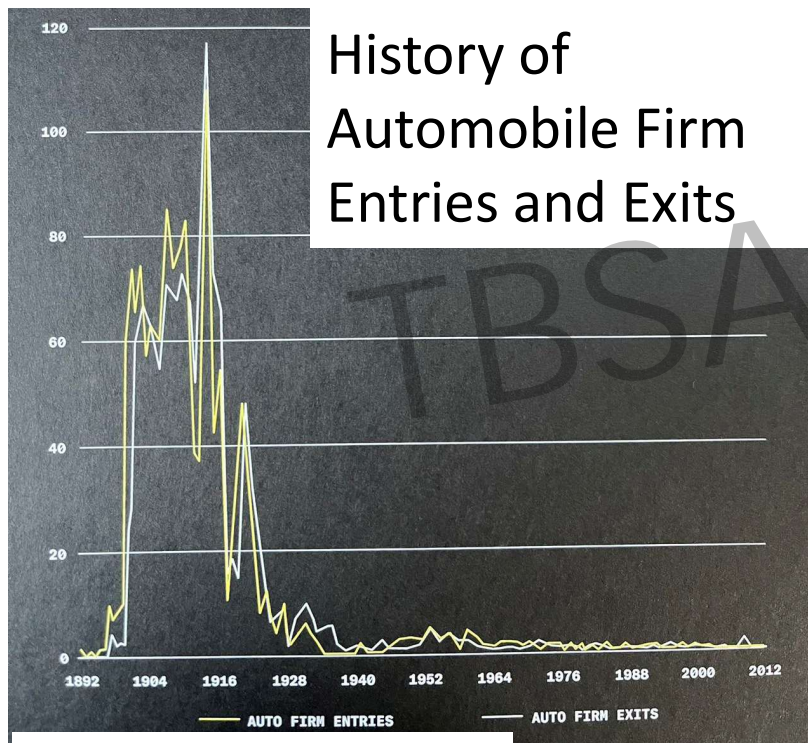
One culprit...an e-Bike?



Meant for dirt roads only, this popular style of “e-Dirt Bike” is popular with youth and gives low speed low power e-bikes a bad reputation

As e-bike crashes rise, regulators considering mandatory training, licensing, helmets, and age-restrictions

Consolidation and rationalization is coming



H. Dediu (2024) Micromobility Handbook

WORLD

Van poof! Dutch e-bike maker VanMoof goes bankrupt, leaving riders stranded

AUGUST 23, 2023 - 5:14 AM ET

HEARD ON MORNING EDITION



Rob Schmitz



“Not all of our companies are going to make it” – H. Dediu

Tariffs & Trade Wars

Feb 03, 2025

Important Pricing Update on Vvolt Ebikes



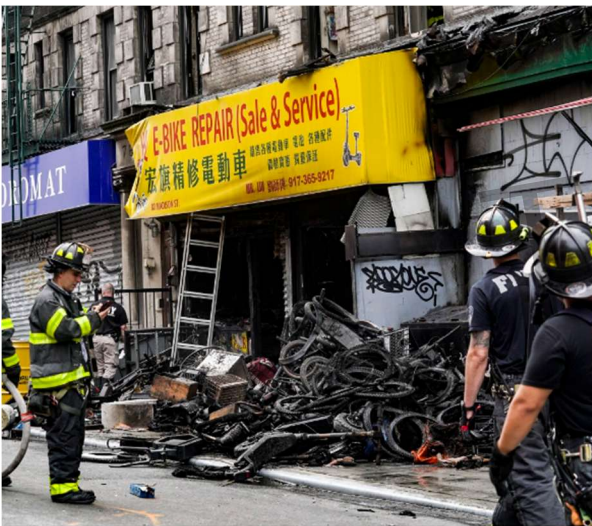
OKAI Pricing Increases March 1st

Ready to upgrade your ride? E-bikes are a game changer—whether you're zipping through traffic, cruising scenic routes, or cutting down on your carbon footprint, they make every trip a breeze! But here's the kicker: prices are going up starting **March 1st** due to new tariffs.

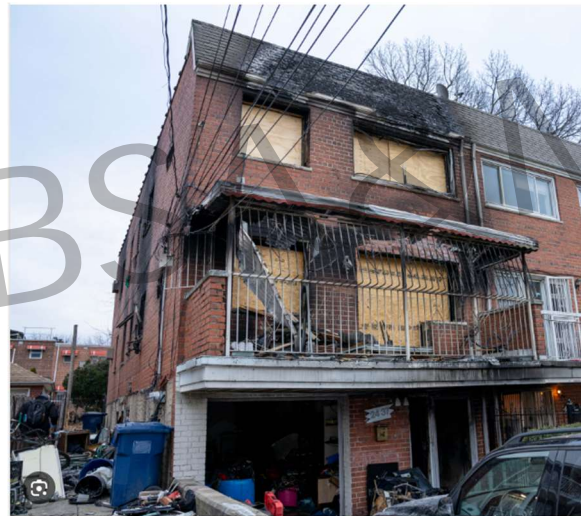
E-bike production (at least frame mfg.) shifting from mainland China to ASEAN countries

E-bike Industry's big black-eye: Li-ion battery safety

Retailers



Residential



Man dies, 10 hospitalized when e-bike erupts in NYC home

Product Recalls

E-Bikes Catching Fire: Santa Cruz Recalls Battery on Heckler 9

The California bike manufacturer said some of its Heckler 9 e-bike batteries can pose a fire hazard and that customers should stop riding and check immediately whether their battery is included.

Written by [Will Brendza](#) May 01, 2025 3:51 p.m. ET



While few in number, they create disturbing headlines & public fear leading to stricter regulation

Barriers to Growth as reported in U.S.

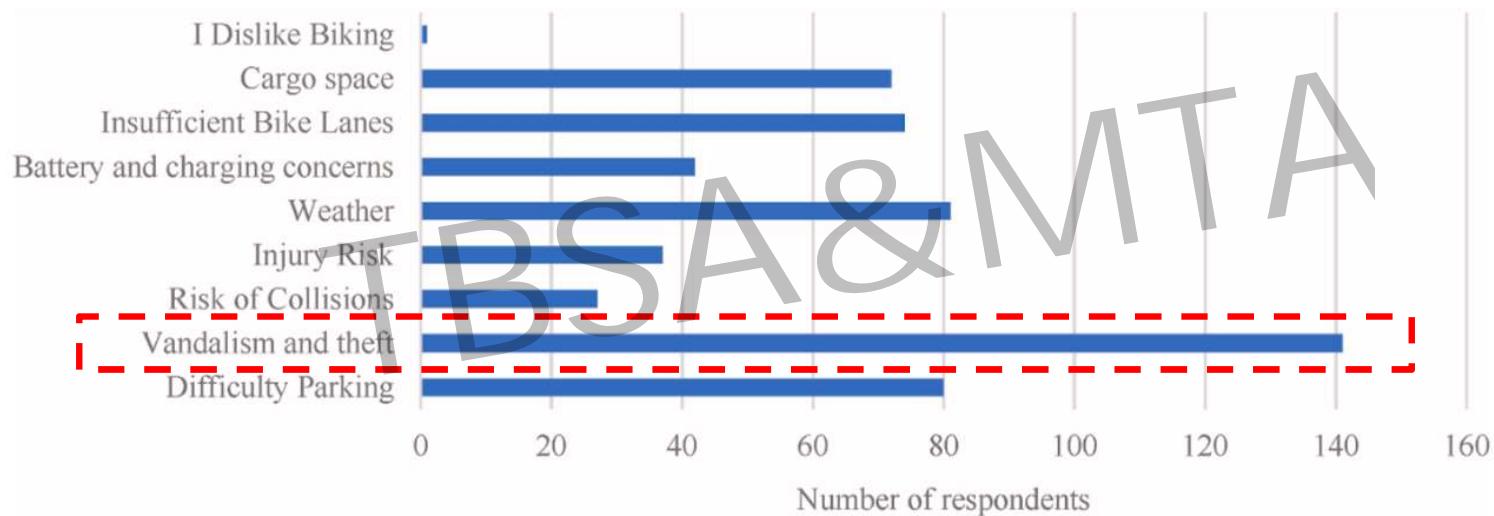


Fig. 5. Reported barriers to using an e-bike more.

Johnson et al (2023), "Impacts of e-bike ownership on travel behavior: Evidence from three northern California rebate programs", *Transport Policy*

2.4 million adult bicycles & e-bikes stolen annually in the US

European E-bike Market

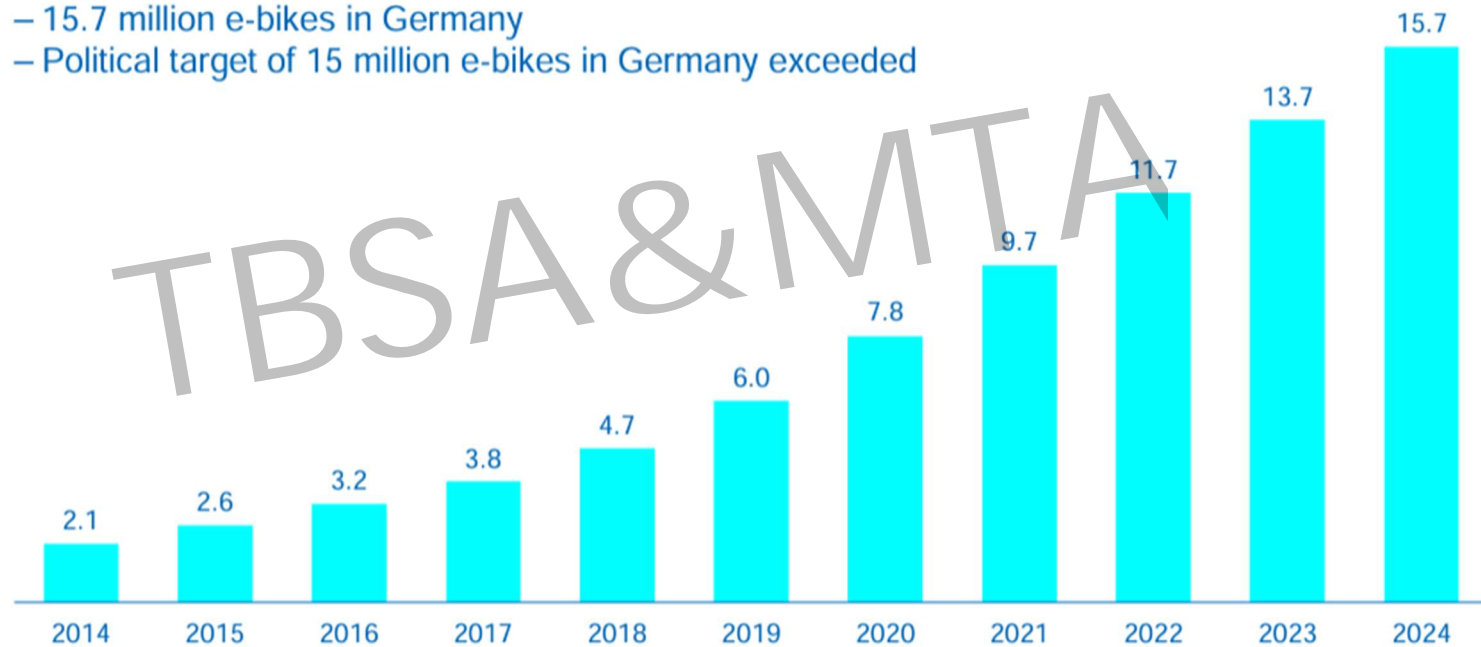
TBSA & MATTA

0/40

Germany strongest EU market for Premium E-Bikes

E-bikes in Germany (in million units) **TOTAL FLEET SIZE**
Eightfold increase in e-bikes in past ten years

- 15.7 million e-bikes in Germany
- Political target of 15 million e-bikes in Germany exceeded

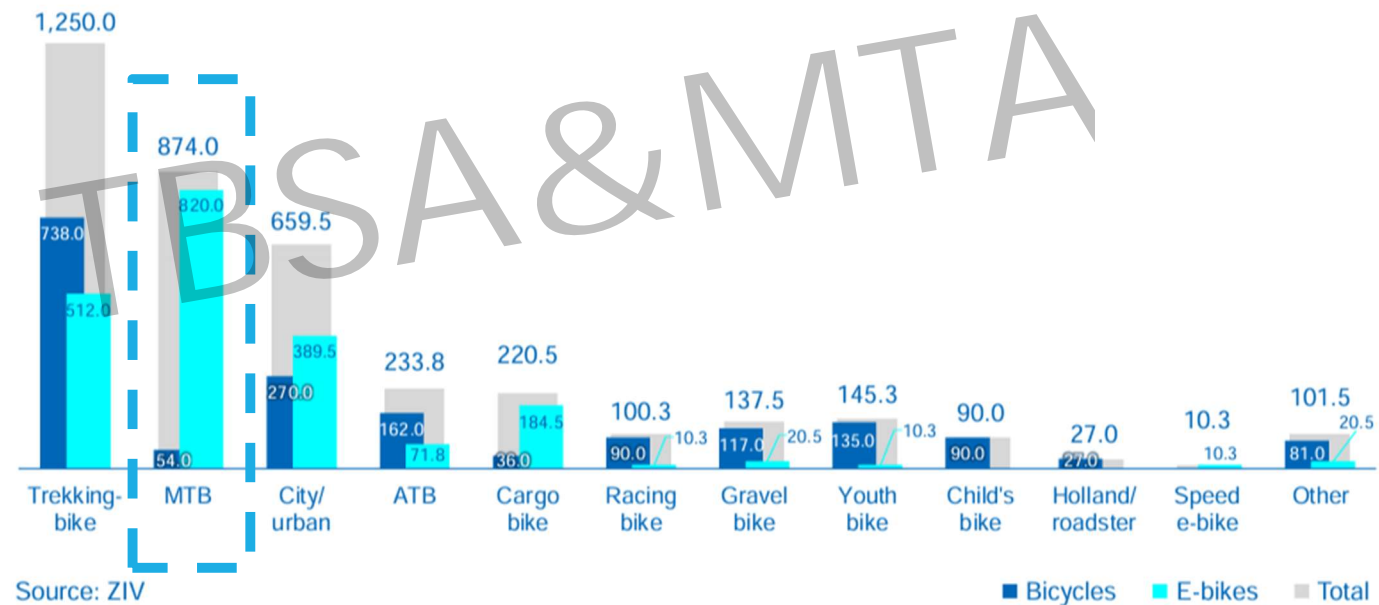


Source: ZIV (* figures adjusted by discarded bicycles)

>90% of all MTBs sold in Germany are electric

Rest of Europe and US are 3-5 years behind this trend

Bicycle and e-bike sales by product category (in 1,000 units)
Cargo bikes and MTBs almost always with motor support





East Asian E-Bike Market

TBSA & IATA

East Asian / Oceania E-bike Market Stats

	Japan	Korea	Australia	New Zealand
2024 Total eBike Sales (k Units)	~700 *	~200	~200	~40
2024 Total eMTB Sales (k Units)	40	10	~50	~30
eBike market share (% of total bicycle units)	40%	25%	20%	20%

* Initial estimate based on Panasonic 2024; estimates range from 300k to 1.3 M per year

Takeaways:

- Japan one of the earliest pedal-assist e-bike markets slowly shrinking as overall population and birth rate decline. Most e-bike used by mothers for transporting children and by the elderly
- Korea, Australia are emerging growth markets
- New Zealand emerging as popular eMTB destination

Japan had first mover advantage but its e-bike tech lags other markets due to unique regulation / protectionism

Regulatory Requirements to Achieve Same Right & Duties as Bicycles

Japan: Must be pedal-assist, max 24 km/h, max assist ratio of 2.5X.



EU: Must be pedal-assist, 25 km/h max, 250W rated power (peak power ambiguous)



China: “Bicycle equivalent” regulation in progress. Typical e-bike regulation is max 25 km/h, “operable” pedals. License plate required



US: Pedal-assist or throttle-driven, max 45 km/h, 750W



Global growth depends on e-bikes gaining equal or similar rights & duties as the loosely regulated bicycle

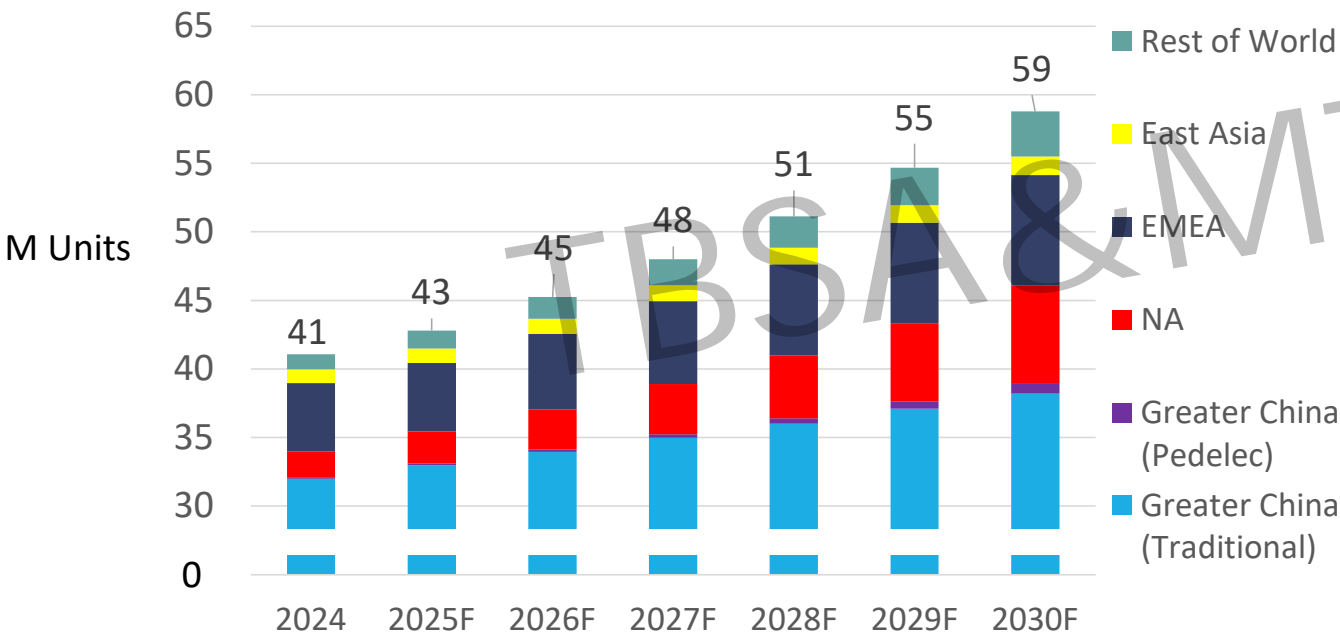
Regulatory Framework by Classification and Use in the largest e-Bike markets

Examples from countries for an e-bike to qualify for the same rights & responsibilities as bicycles. Note, in some countries like the U.S. & Europe, there are several e-bike classes with some loss of rights as vehicles get faster or more “moped-like”. Vehicle definition is ideally set at national level. States or cities may want the right to set the user and bikeway access requirements depending on local conditions.

Country	Name	Set by Federal gov't			Set by State or Local government (Y,N, etc.)				Bikeway Access		
		Assist mode	Max motor-assisted speed (km/hr)	Max power (W)	Min. Age	Drivers license	License plate	Helmet	Bike Path	Protected Bike Lane (cycle track)	Natural surface bike trails
U.S.	Class 1 & 2	Pedal or throttle	32	750	N/A	N	N	<18	Y	Y	?
EU	Pedelec	Pedal	25	250 (rated)	?	N	N	N	Y	Y	Y
Japan	Pedelec	Pedal	24	1:2 power ratio	N/A	N	N	N	Y	Y	?
China	Electric bicycle	Pedal or throttle	25	400	?	N	Y	N	Y	Y	?

Opportunity for emerging e-bike markets to learn from mature market on optimal e-bike policy

Fearless Forecast Part 1: Market Growth



Rest of World: led by females & youth in Southeast Asia & Latin America ditching gasoline scooters or public transit for lighter, cleaner e-bike.

East Asia: Growing popularity in Oceania offset by slowly shrinking market in Japan

EMEA: after inventory issue resolved in 2026, market returns to steady growth aided by public policy.

NA: Loose regulations make e-bikes the preferred transport mode of youth, and popular recreational toy for older age groups.

Greater China (Pedelec): emerging market, depends on adopting EU-style standard (in progress).

Greater China (Traditional): very mature market, slight growth with continued urbanization.

By 2030: ~40-50 GWh new batteries per year; after-market replacement batteries ~2X; Total ~150 GWh/yr

Fearless Forecast Part 2: Battery Tech

EMEA & NA:

Li-ion NMC slowly transitioning to safer chemistries like solid-state Li.



Greater China (Traditional):

Pb-Acid eventually gives way to Sodium-ion & Li-ion



E-bikes: proving ground for Solid-state Li & Na-ion as brands strike balance between price, energy density, life, and safety



乔文轩 Jonathan
United States

THANK
YOU

FOR
SLIDES:



TESHA QUINTA