

# Electric Buses: Market Update and Trends in Charging Strategies

What will be covered during today's session

- European electric bus market overview
- Shift towards depot charging.. but for how long?
- The bigger picture: how does Europe fit into the global electric bus market

## Who we are

Interact Analysis provides industry-leading market intelligence to the commercial vehicle industry. Our team of vastly experienced analysts enable us to provide the highest quality data and expert analysis.

We offer market intelligence services derived largely from extensive primary research. Our industry expertise combined with vast experience in statistical analysis provides you with reliable, trusted intelligence that enables you to make decisions with confidence.

## Brief Introduction to Speaker



### Rueben Scriven - Senior Analyst

Rueben is an experienced research analyst covering the global electrified commercial vehicle market. He's spoken on CNBC and has featured in several leading publications such as the Wall Street Journal. Prior to his current position, Rueben was in the field of computational biology and bioinformatics.

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## Our clients include:



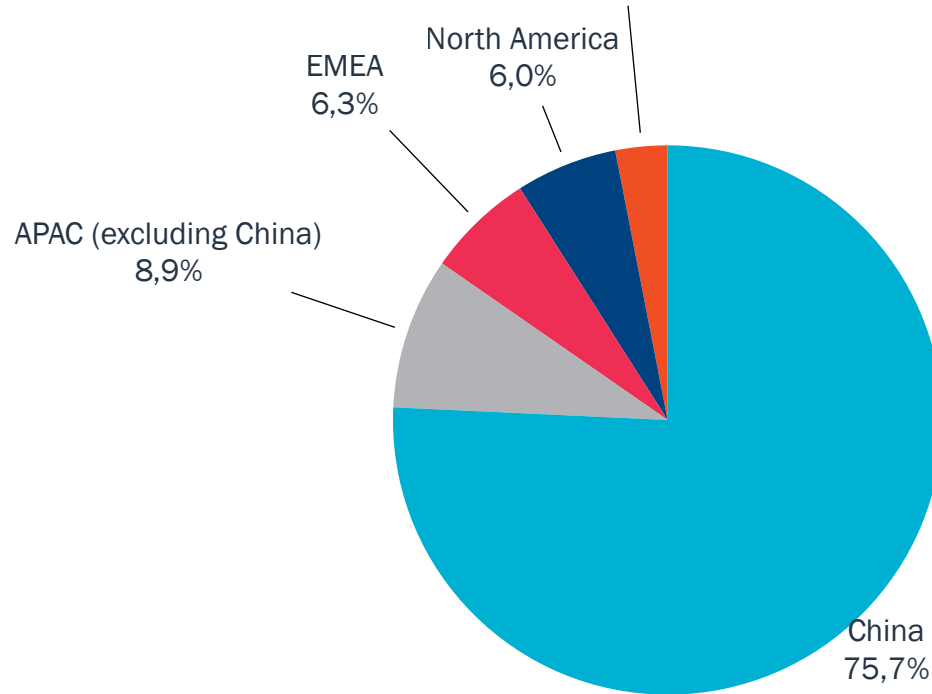
# Market Overview

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# Global Electric Bus Market

China to account for the lion share of electric bus registrations throughout the next decade

## Global Battery Electric Bus Registrations by Major Region (2020 – 2030)



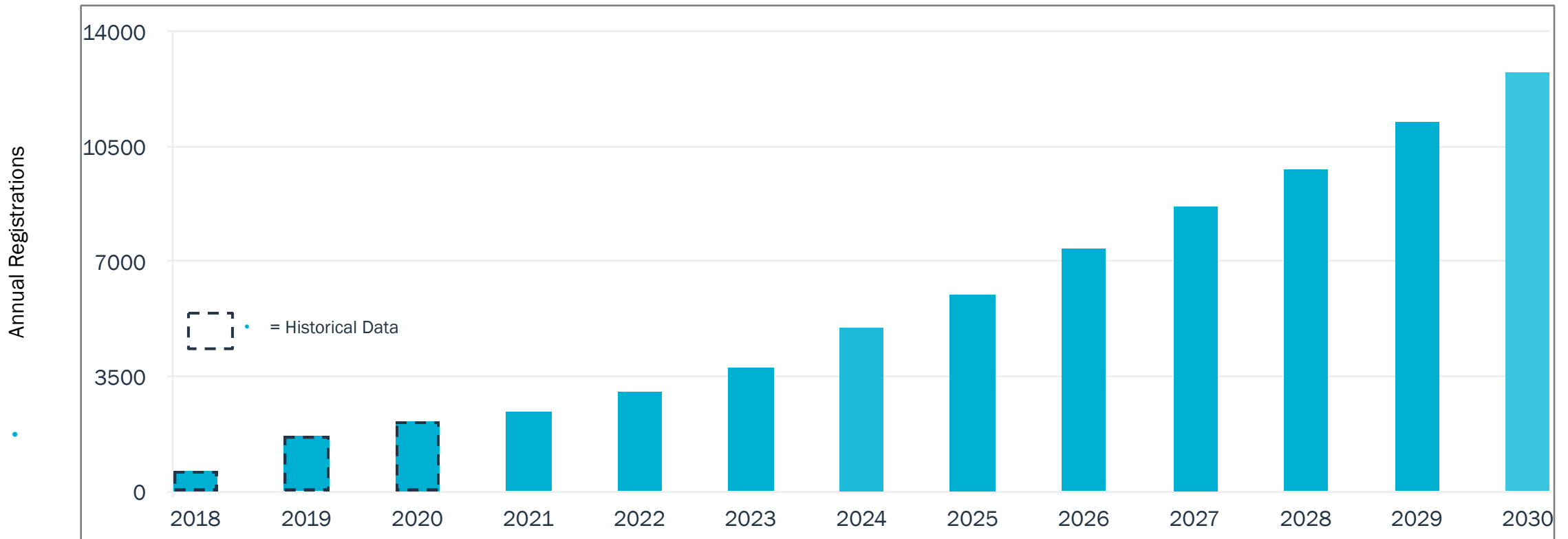
Source: Interact Analysis

Notes: Includes city buses, inter-city buses and school buses

# European Battery Electric Bus Market Forecast

The European battery electric bus market is forecast to reach just over 12,000 annual registrations in 2030

- European Battery Electric Bus Market Forecast



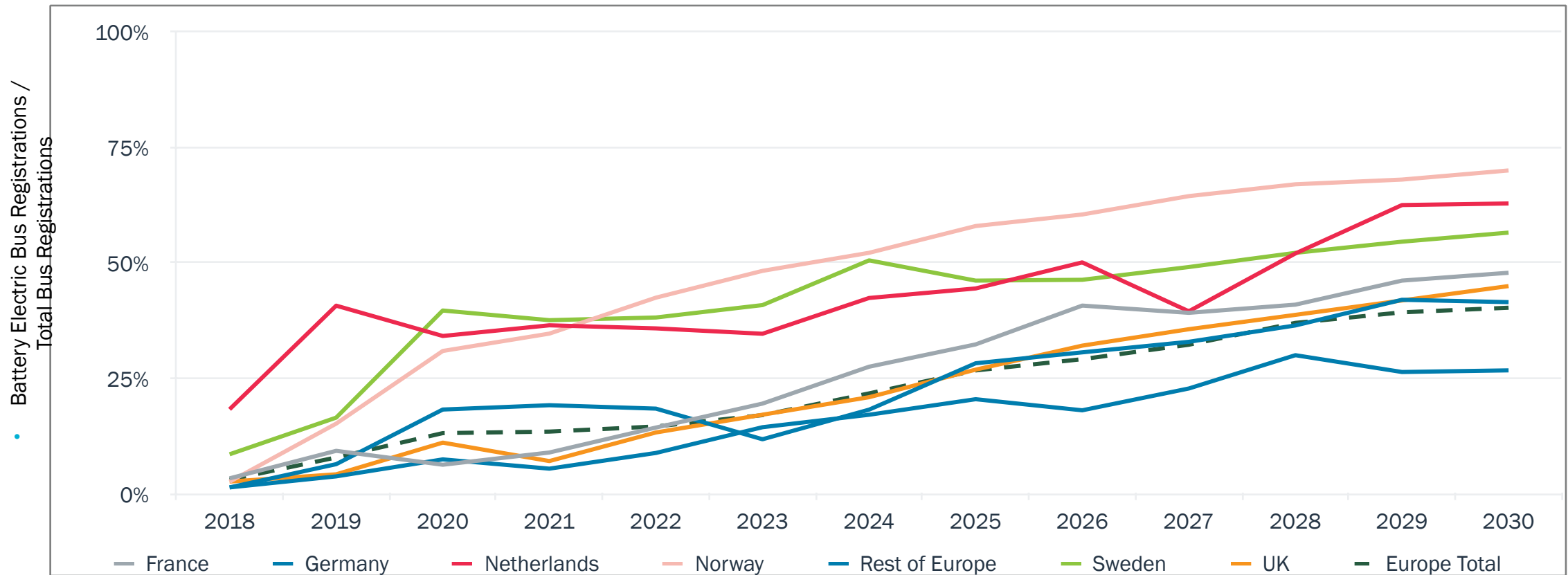
•Source: Interact Analysis

•Notes: Includes city buses, inter-city buses and school buses

# Electric Bus Market Growth (3)

Norway and the Netherlands are forecast to account for the highest penetration of battery electric city buses in Europe

- European Battery Electric City Bus Registrations by Country



- Source: Interact Analysis

# Shift Towards Depot Charging

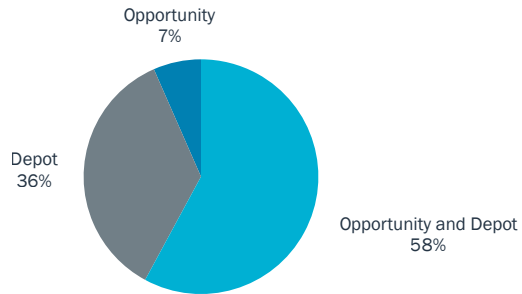
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# Shift Towards Depot Charging (1)

Shift towards depot only charging strategies over time

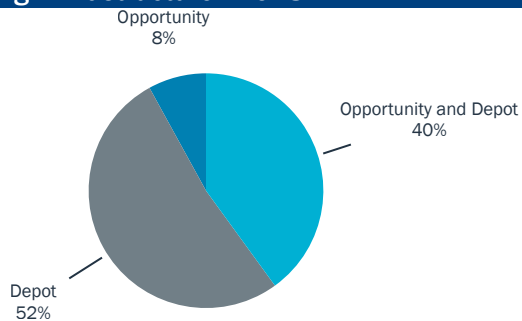
Europe Electric Bus Charging Infrastructure - up to 2017



Source: Interact Analysis

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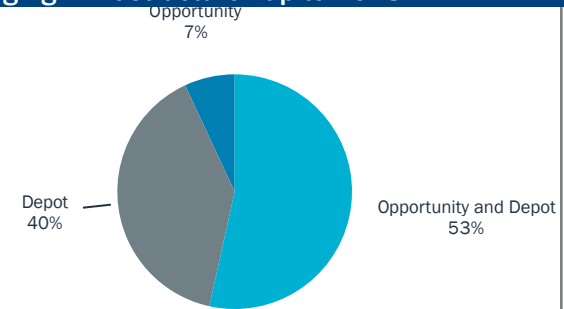
Europe Electric Bus Charging Infrastructure - 2018



Source: Interact Analysis

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Europe Electric Bus Charging Infrastructure - up to 2018



Source: Interact Analysis

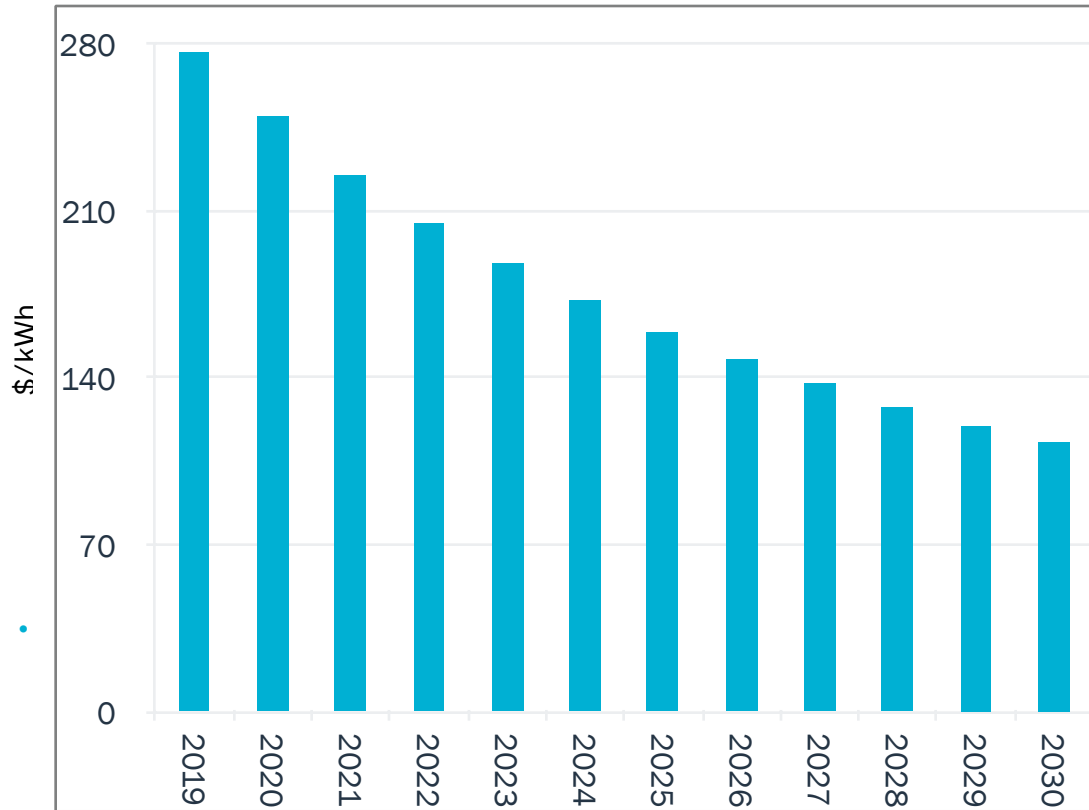
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- Before 2018, 'Opportunity' and 'Opportunity & Depot' accounted for the majority of electric bus projects in Europe
- In 2018, 'Depot' only projects accounted for the majority of registrations

# Shift Towards Depot Charging (2)

What's causing the shift towards depot-based charging strategies

- NMC Electric Bus Battery Costs for EMEA by year



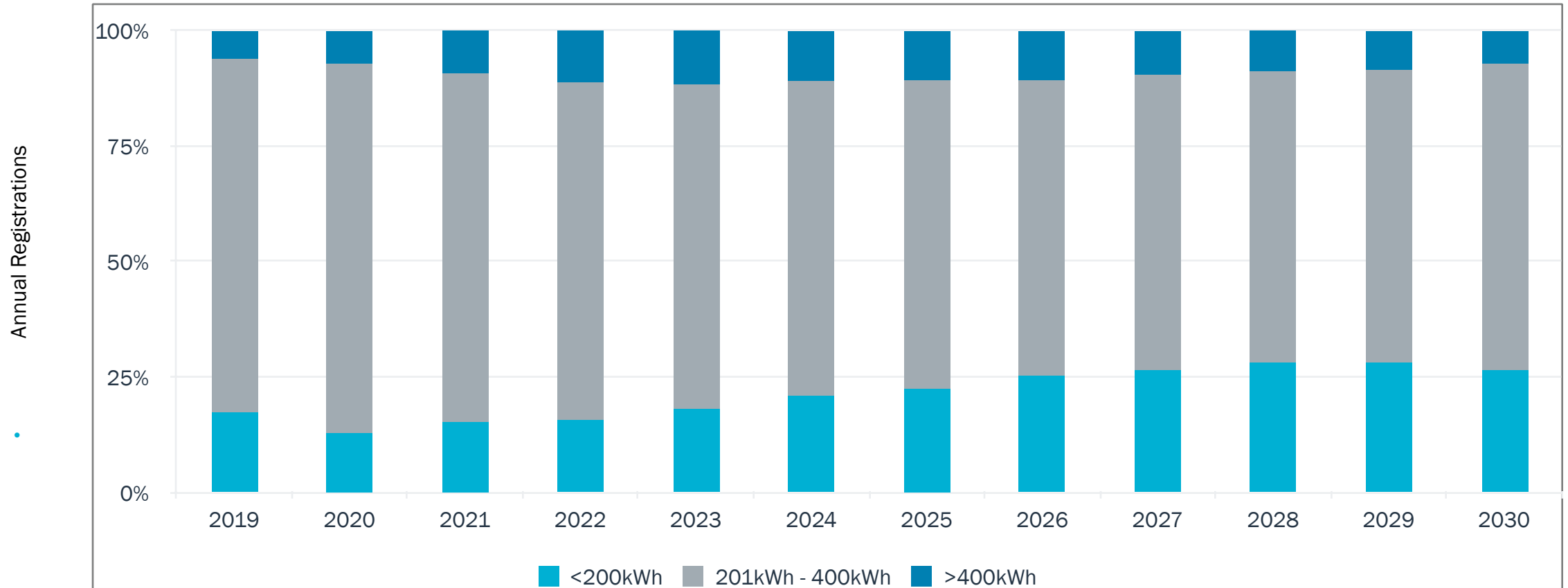
- Source: Interact Analysis

- Lower battery costs
- higher battery densities
- Administrative hassle to install opportunity chargers in public areas
- Growth of Chinese electric buses using LFP batteries

# Shift Towards Depot Charging (4)

Opportunity charging will lead to more batteries less than 200kWh in size

- EMEA Battery Electric City Bus Forecast by Battery Capacity



- Source: Interact Analysis

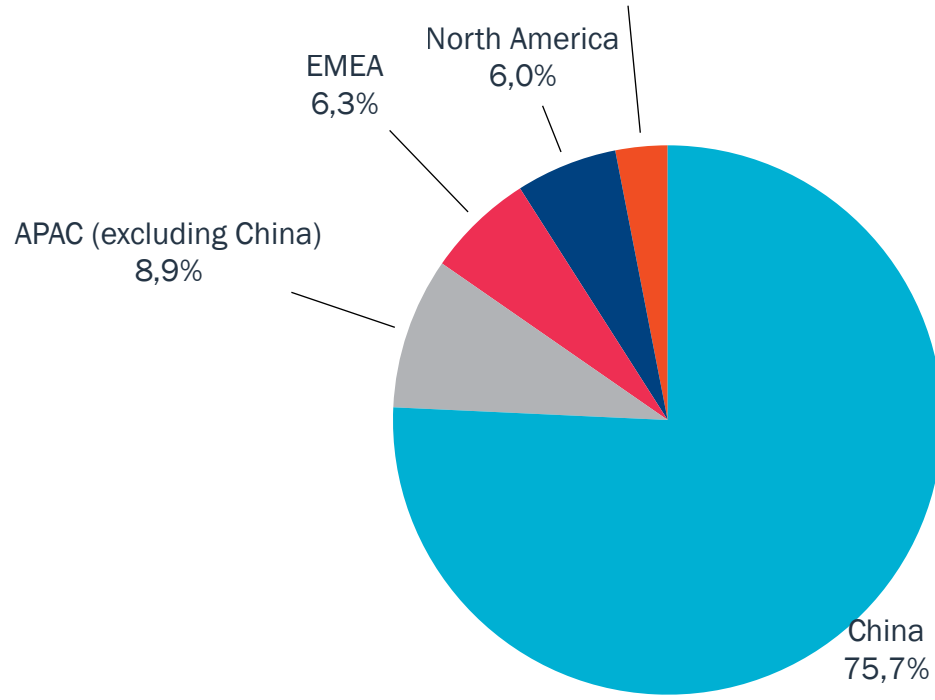
# The Bigger Picture

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# Global Electric Bus Market

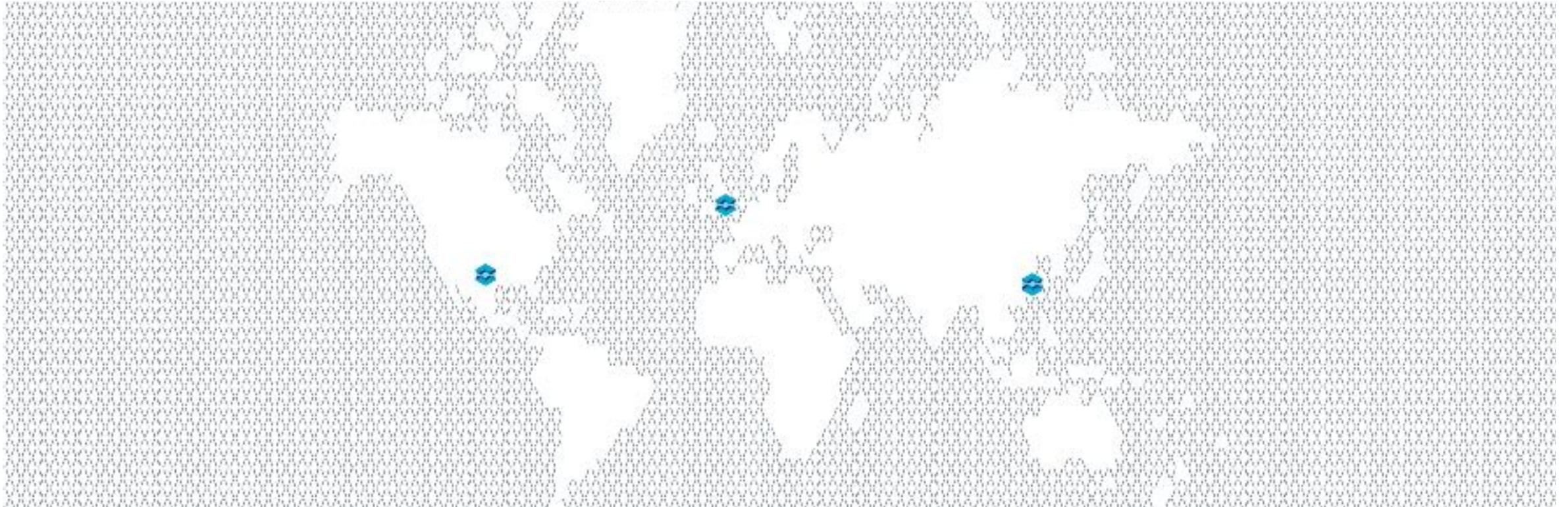
China to account for the lion share of electric bus registrations throughout the next decade

## Global Battery Electric Bus Registrations by Major Region (2020 – 2030)



Source: Interact Analysis  
Notes: Includes city buses, inter-city buses and school buses

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