

Energy Transition, Out of City Centers

BUSWORLD foundation

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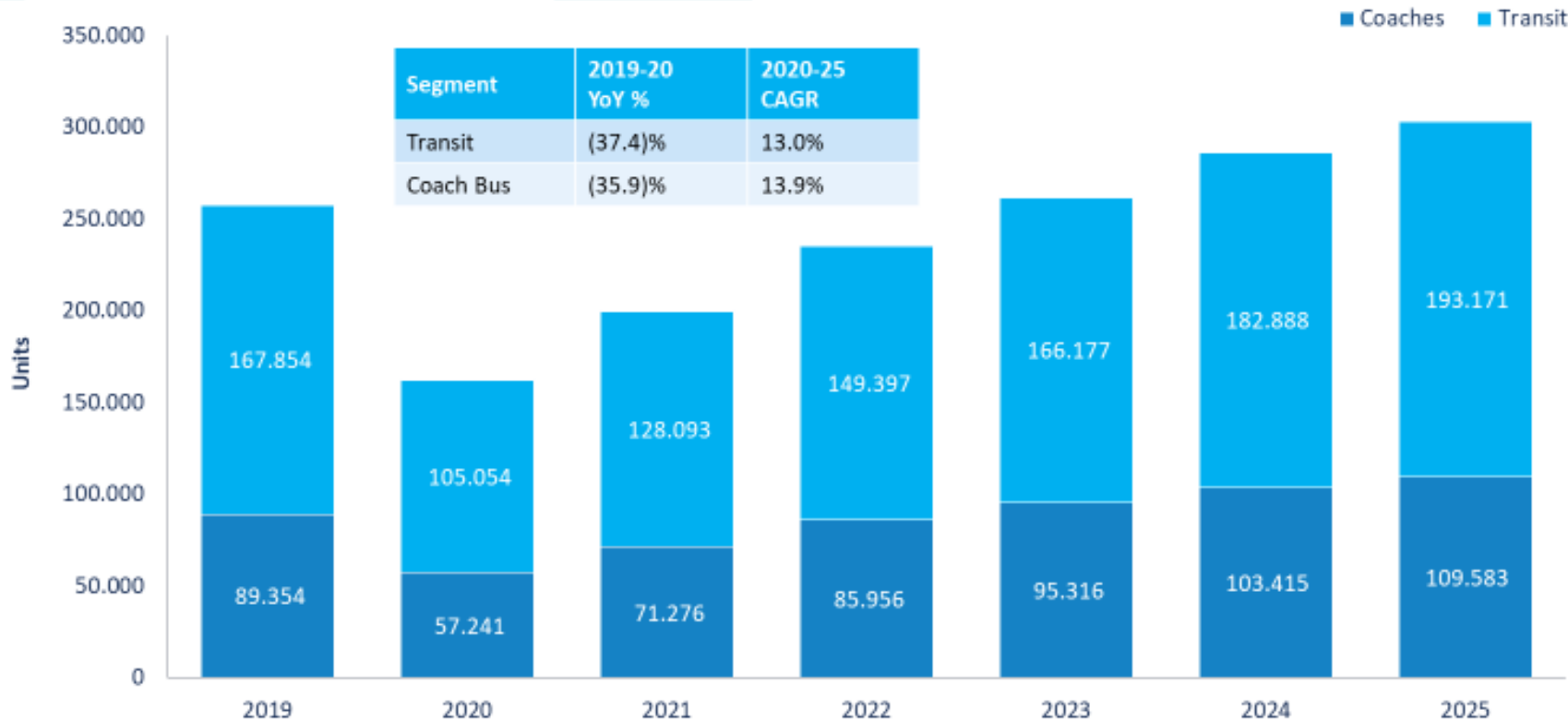
Global Bus Market by region in 2025



Note: All figures are rounded. The base year is 2021. Source: Frost & Sullivan
Global bus market includes medium- and heavy-duty transit buses and coaches.

The Global Bus & Coach Market is set to grow at a steady pace; primarily driven by China, India, Latam & the growing population, especially in the developing regions

Global Market Unit Shipment forecast TRANSIT vs COACH 2019 vs 2025



Segment	2019-20 YoY %	2020-25 CAGR
Transit	(37.4)%	13.0%
Coach Bus	(35.9)%	13.9%

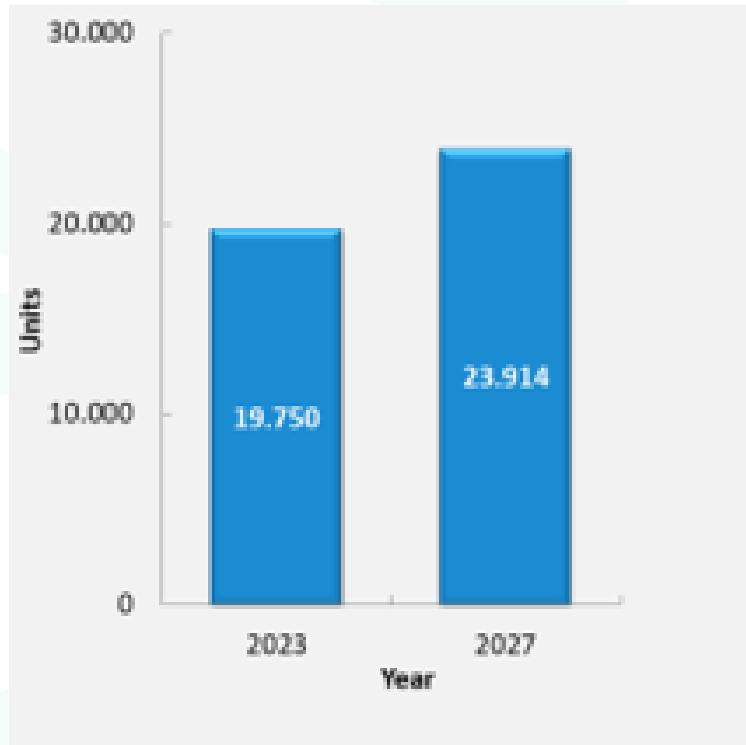
Growing global urban population, supported by policy measures to reduce emissions and improve efficiency of public transport is the driving force behind the growth of the bus market.

The market growth in coach is almost completely driven by long haul intercity services.

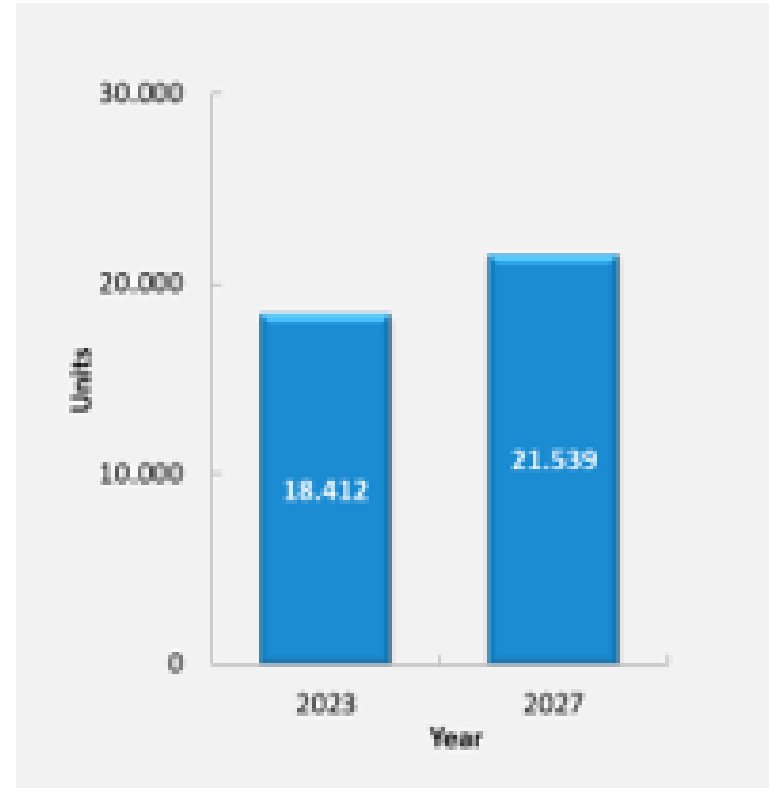
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Source: Frost & Sullivan

EU – Bus & Coach Market

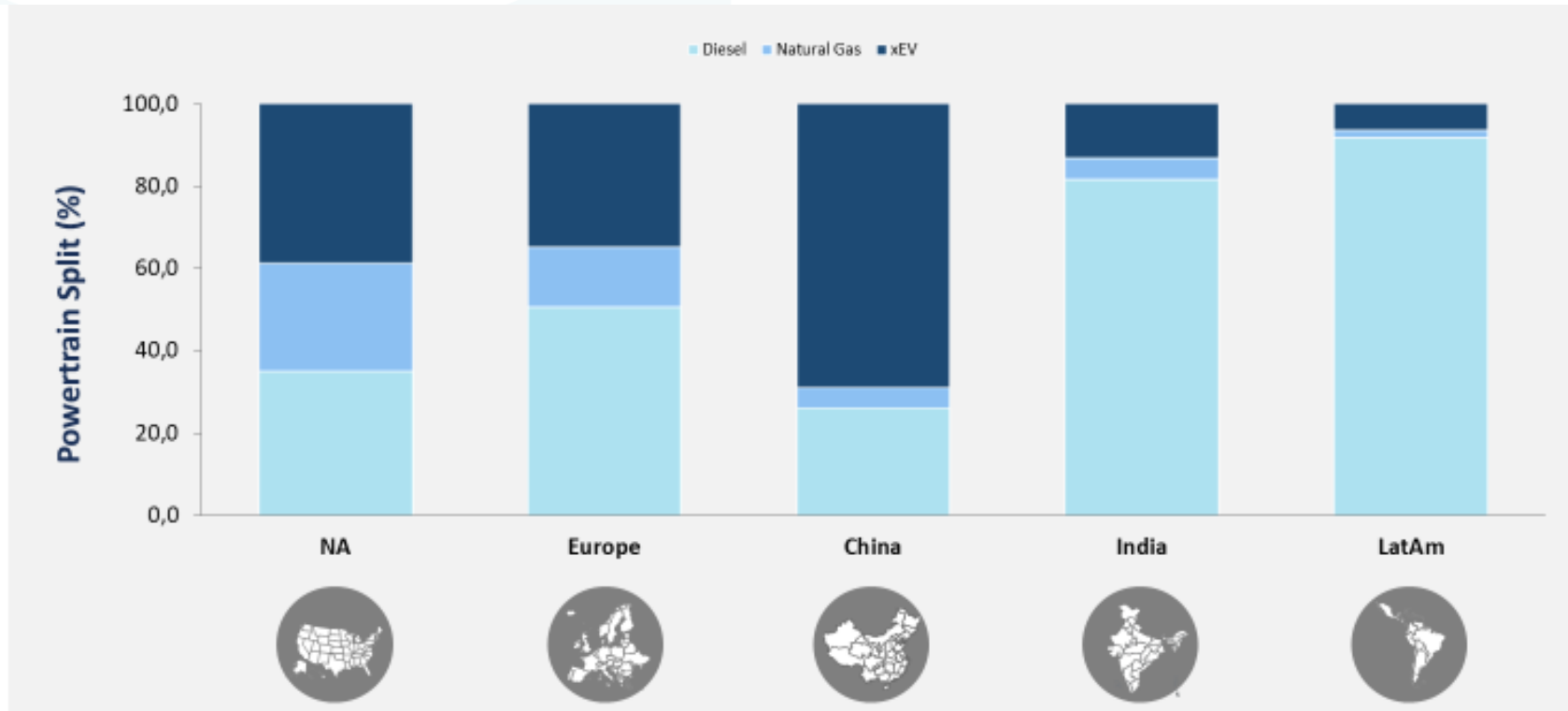


BUS



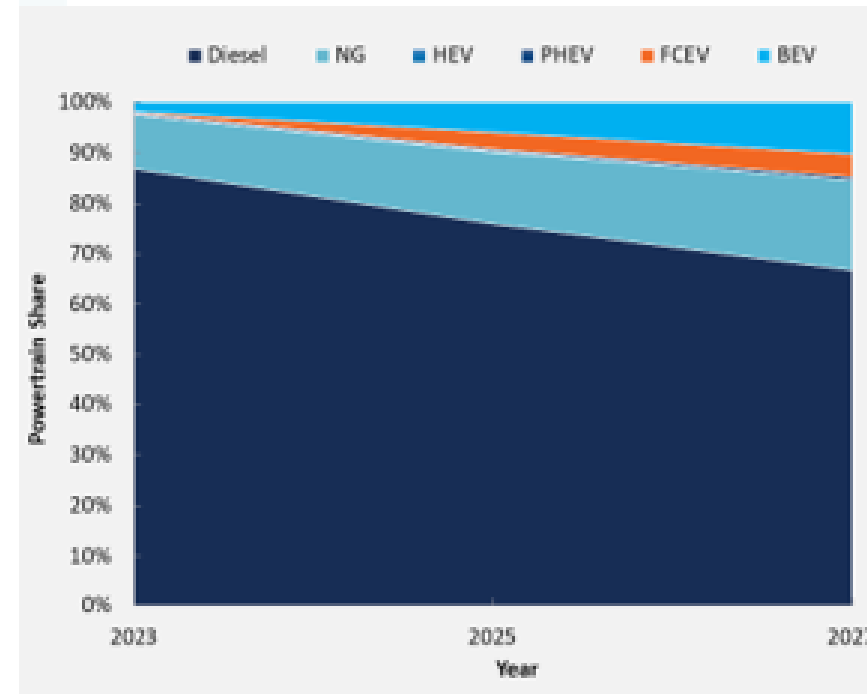
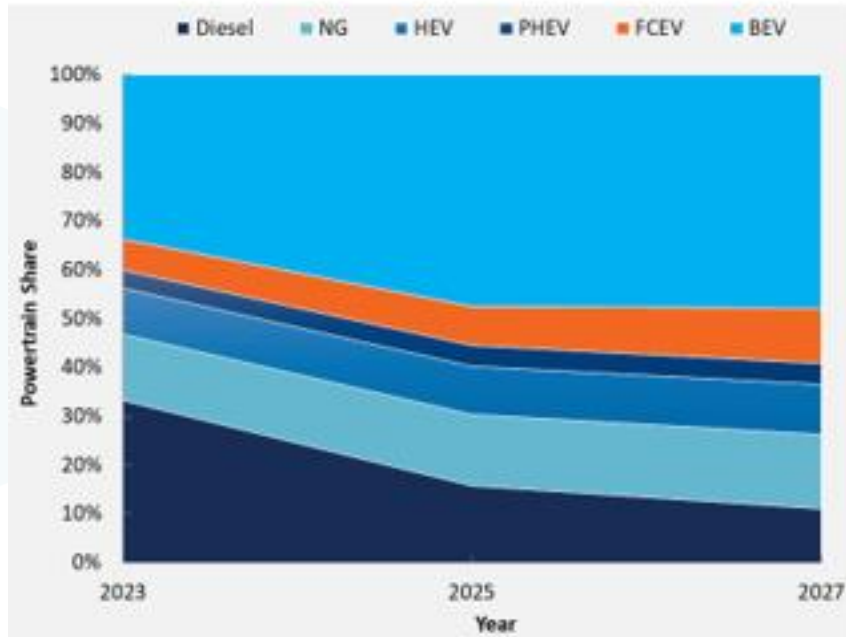
COACH

Global Bus & Coach Market Forecast 2025 Powertrain Technology



China, North America and Europe will be key regions with higher adoption of electric buses with subsidies for public transport and stringent emission regulations being major driving factors

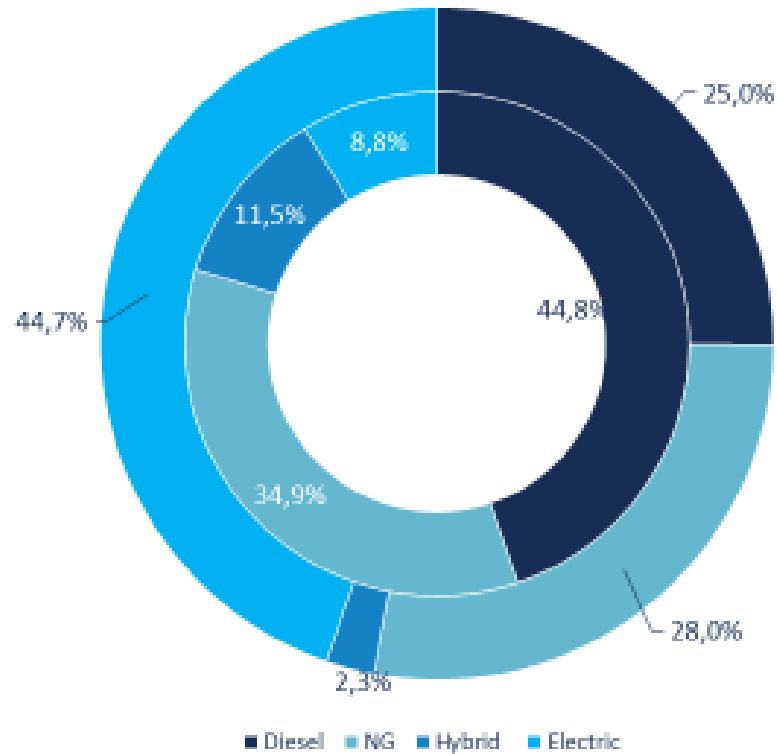
EU – Bus vs Coach – Powertrain forecast



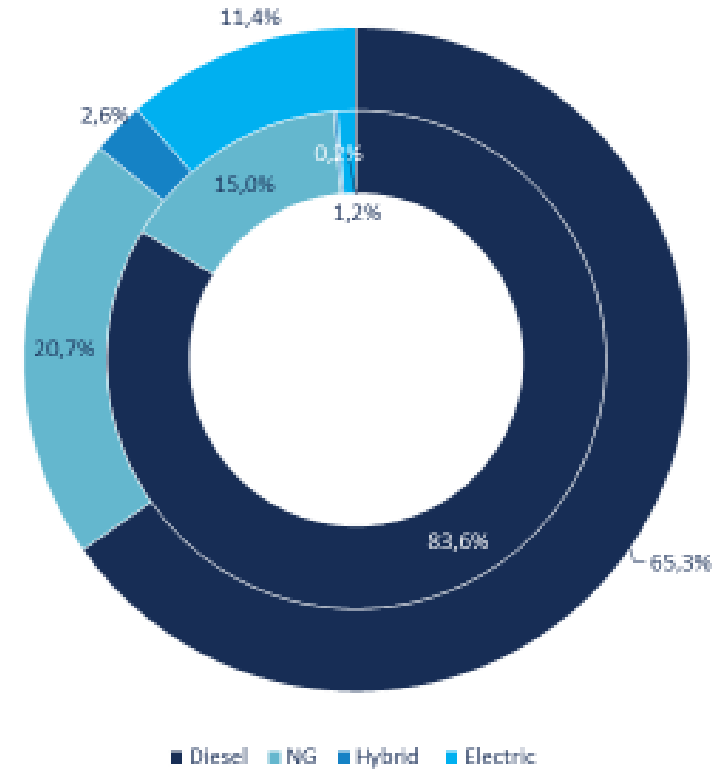
BUS : EU Clean Vehicle Directive boosts electric bus adoption, particularly as part of national public transport procurement

COACH : The adoption rate of electric powertrain is noticeably lesser. The entry of utility and energy major companies into electric charging infrastructure will boost the growth of fueling infrastructure for electric vehicles

Powertrain forecast, Bus vs Coach, NA, 2020 vs 2025

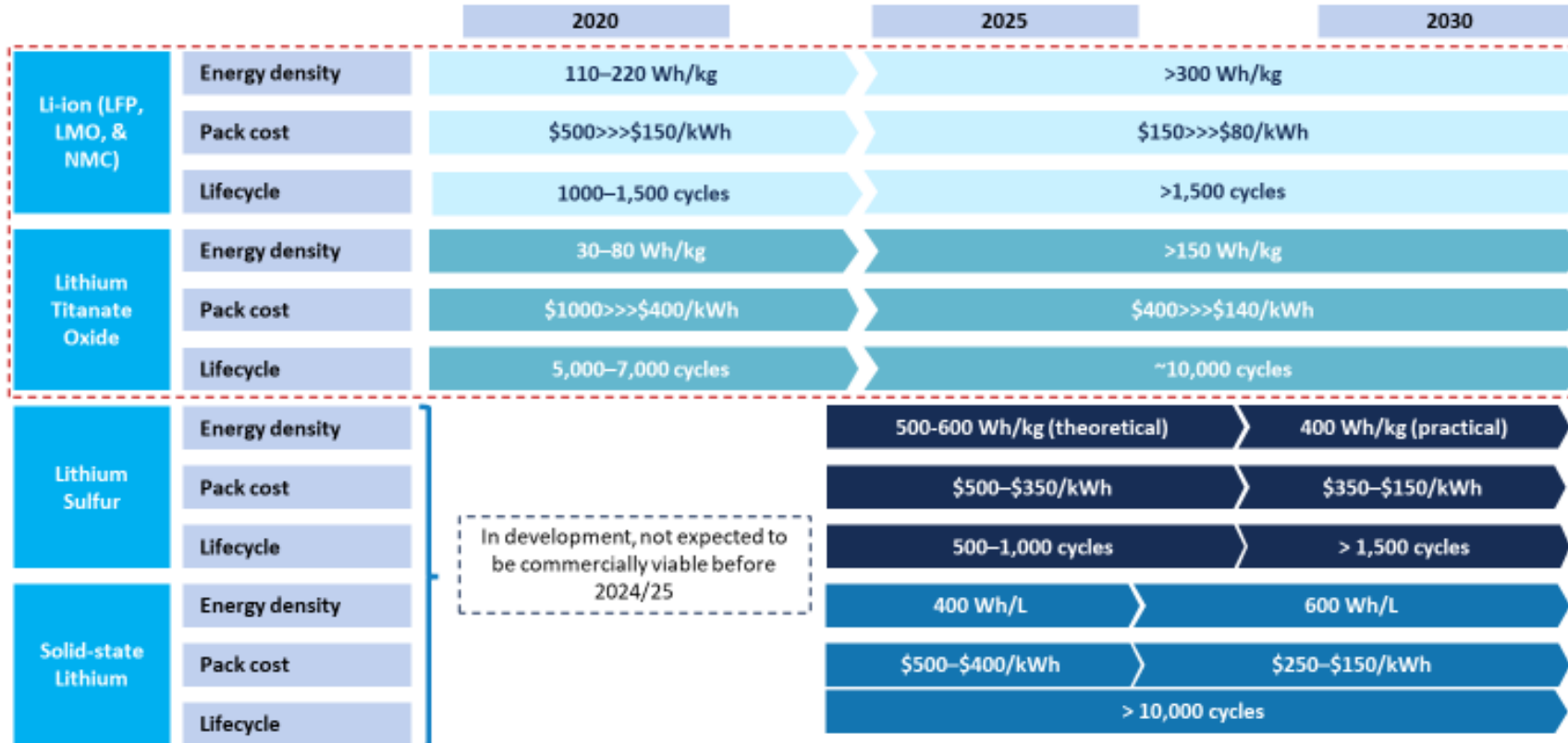


Bus



Coach : growing electric charging infrastructure will drive the adoption of EV Coaches. Fuel cell adoption in coaches will depend on H-fuel price and fueling infrastructure

Future of Battery chemistries



NMC—Nickel Manganese Cobalt Oxide; LFP—Lithium Iron Phosphate

Source: Frost & Sullivan

The arrival of Lithium-Sulfur and Lithium Solid State Batteries, will impact the implementation of EV coaches significantly.

Socio-economic aspects in the energy transition for Coach

- LEZs
- Dependency on Opportunity Charging
- Outroll of charging/fuelling infra : AFIR => freight vs Passenger transport
- Price evolutions => Ex. H-price max € 4,-/kg to have a business case
- Capacity to adapt is related to the company size & structure

Long haul services

- Outroll of charging infra along the major axes
- Complementary to multimodal mobility systems in cities

Coach tourism

- >80% SME's
- Inclusion of last mile is needed
- Revenu model is less flexible
(willingness of the client to pay for ZE ?)

FUTURE of ZE-motorcoaches

Capex (vehicles and depot adaptations) and Assured Availability & Price of Green (?) Electricity/fuels will be crucial for the implementation of zero emission coaches.

Plus :

- Technical evolutions : Battery chemistry, fuel cell efficiency, H-ICE, ...
- Legislation : Biogasses, diesel additives,... = ZE ?

In coach tourism : an incentivising policy is to be preferred to a restrictive one