

Annex 3: Advanced Economies Europe

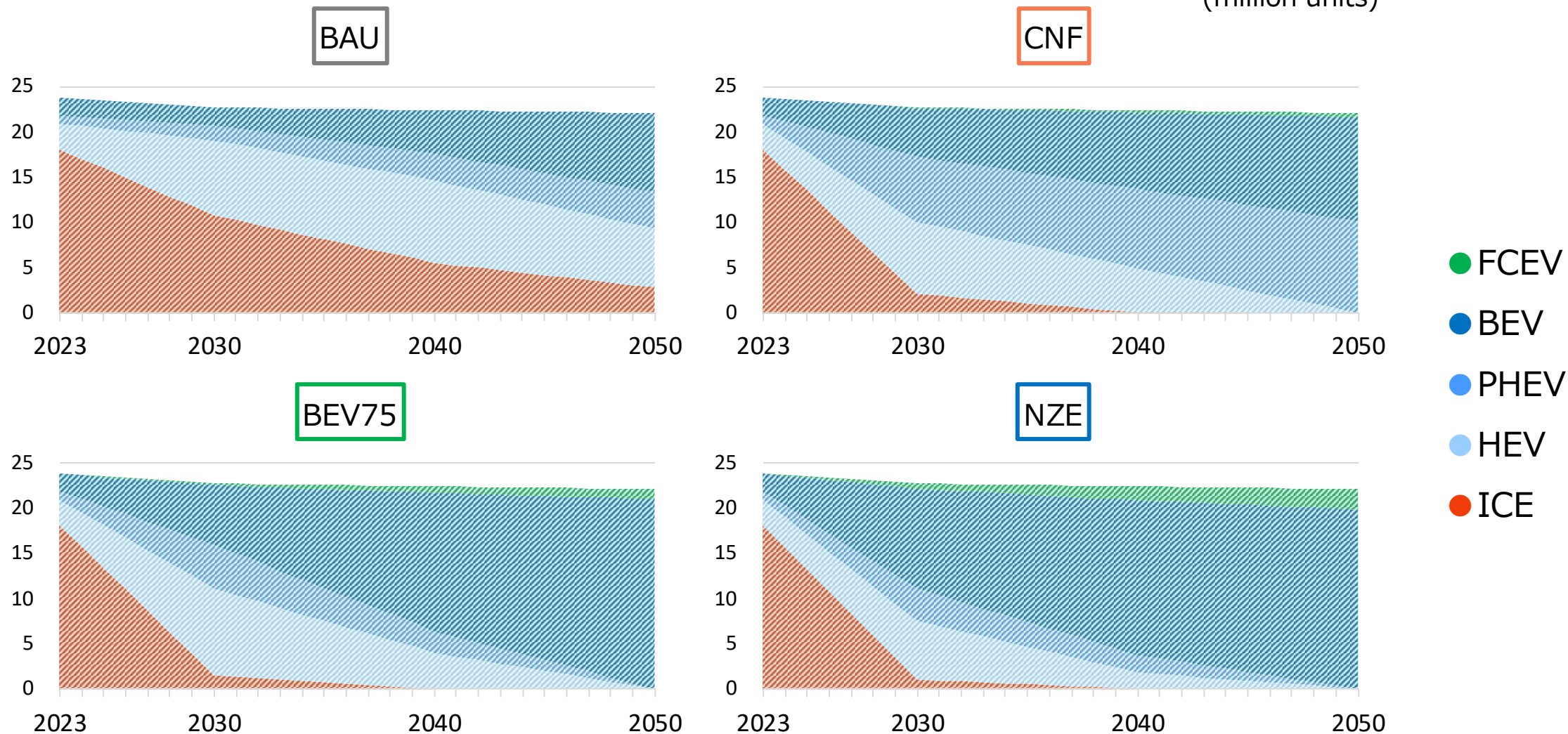
Trends in Advanced Economies Europe @2050

Scenario	Trends in Advanced Economies Europe		2050/2020 CO ₂ Emissions
All	Market	Passenger cars, trucks and buses: Gradual declines in new vehicle sales and gradual increases in in-use fleets; for motorcycles, gradual declines in both new vehicle sales and in-use fleets.	
	Energy mix	Increased supply of diversified clean energy + CCS leads to mostly decarbonization.	
CNF	Electrified vehicles	- Share of electrified vehicles in new vehicle sales: 100% for passenger cars, trucks and buses, with PHEVs accounting for 46% of new passenger car sales, and 80% for motorcycles. - Share of BEVs/FCEVs in in-use vehicle fleets: 47% for passenger cars, trucks and buses and 73% for motorcycles.	-97%
	Fuel mix	- Almost 100% is CNF (synthetic fuels, biofuels) + electricity + hydrogen. - CNF share represents 21% of total liquid fuel consumption in 2023.	
BEV75	Electrified vehicles	- Share of BEVs/FCEVs in new vehicle sales: 100% for passenger cars, trucks and buses and 88% for motorcycles. - Share of BEVs/FCEVs in in-use vehicle fleets: 79% for passenger cars, trucks and buses and 80% for motorcycles.	-98%
	Fuel mix	- Almost 100% is CNF (synthetic fuels, biofuels) + electricity + hydrogen. - CNF share represents 16% of total liquid fuel consumption in 2023.	
NZE	Electrified vehicles	- Share of BEVs/FCEVs in new vehicle sales: 100% for all vehicle types. - Share of BEVs/FCEVs in in-use vehicle fleets: 88% for passenger cars, trucks and buses and 100% for motorcycles.	-93%
	Fuel mix	87% is biofuels + electricity + hydrogen and assuming synthetic fuel is zero. - Biofuel share represents 3% of total liquid fuel consumption in 2023.	

In all non-BAU scenarios, CO₂ emission levels are close to carbon neutrality.

New Passenger Car Sales (Advanced Economies Europe)

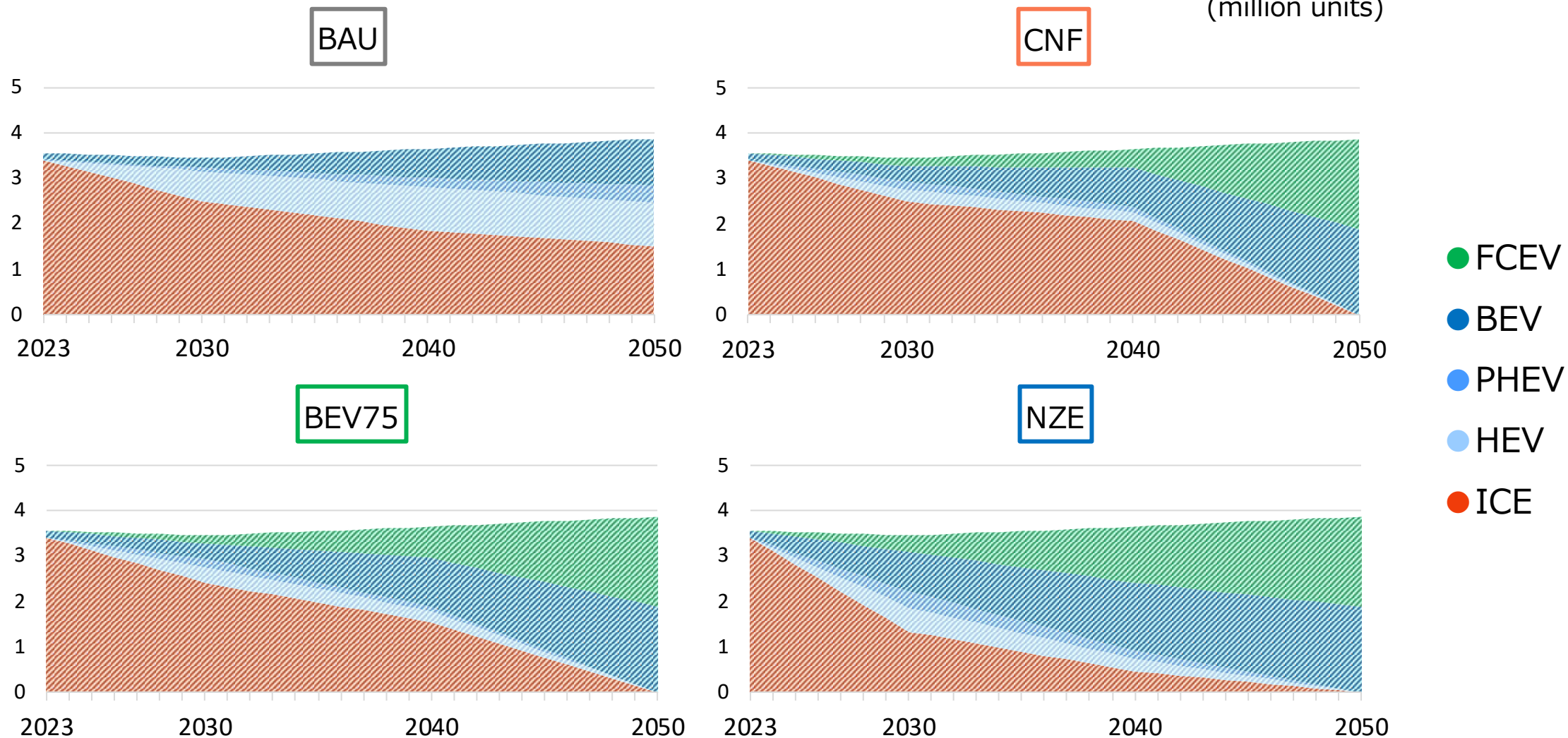
(million units)



Note: Historical values are based on estimates by the IEEJ's Energy and Data Modelling Center (EDMC). Future total new vehicle sales are EDMC estimates, and EDMC estimated the powertrain mix using assumptions from JAMA scenarios.

New Truck and Bus Sales (Advanced Economies Europe)

(million units)



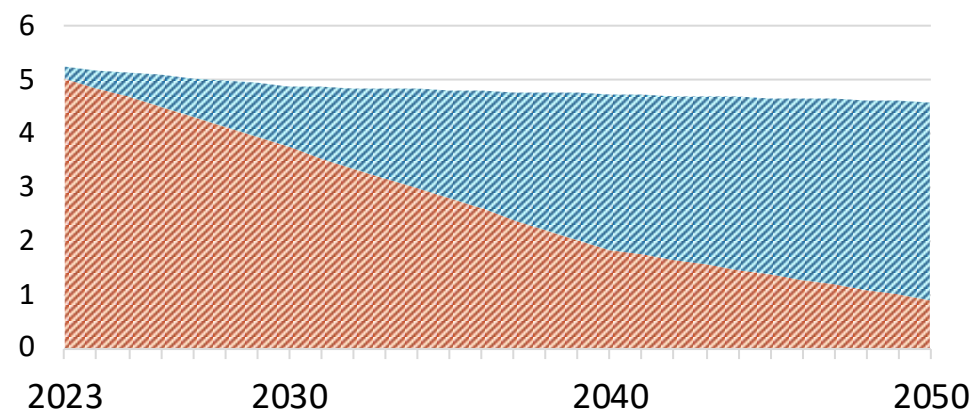
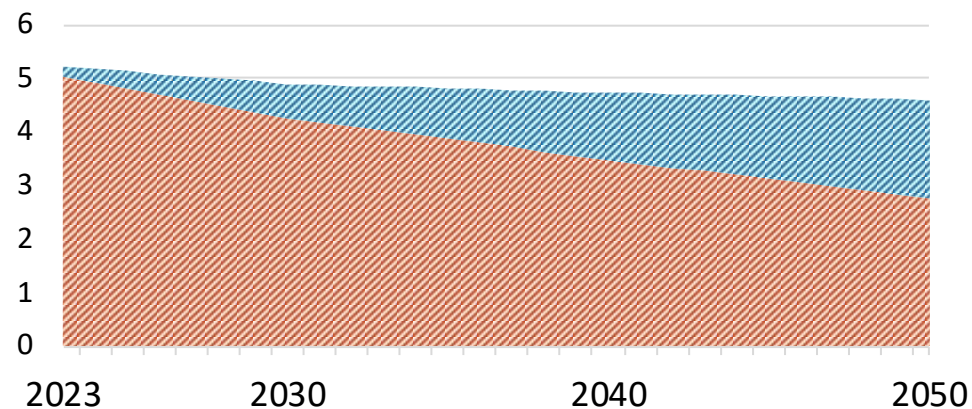
Note: Historical values are based on EDMC estimates. Future total new vehicle sales are EDMC estimates, and EDMC estimated the powertrain mix using assumptions from JAMA scenarios.

New Motorcycle Sales (Advanced Economies Europe)

(million units)

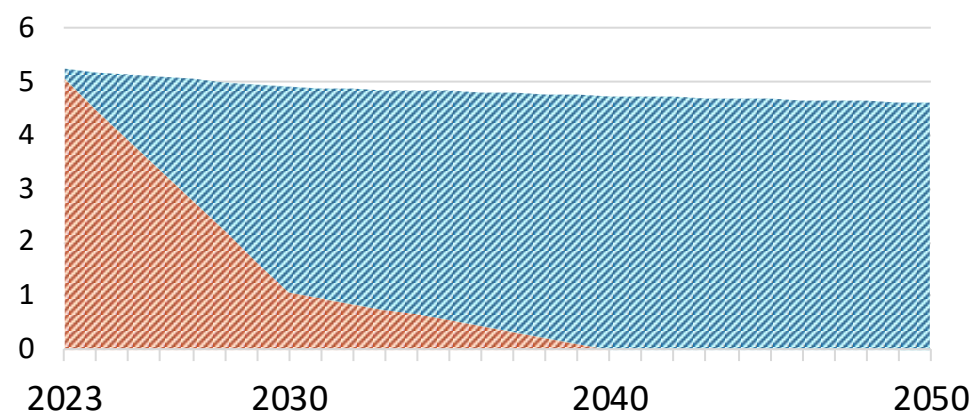
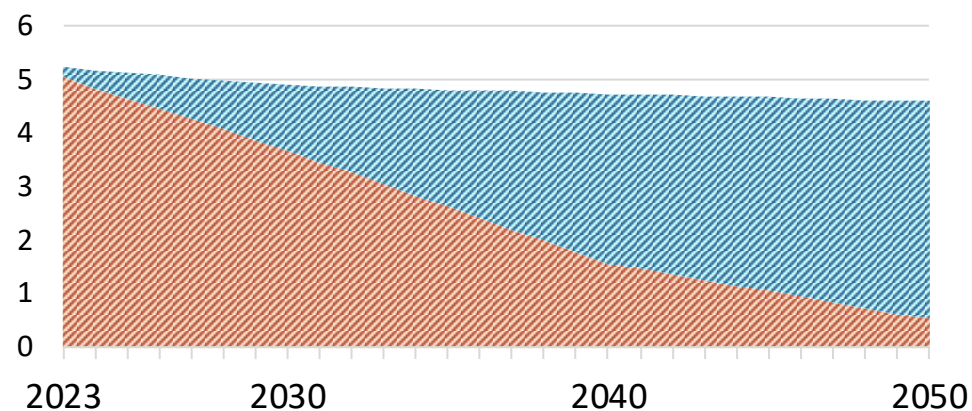
BAU

CNF



BEV75

NZE

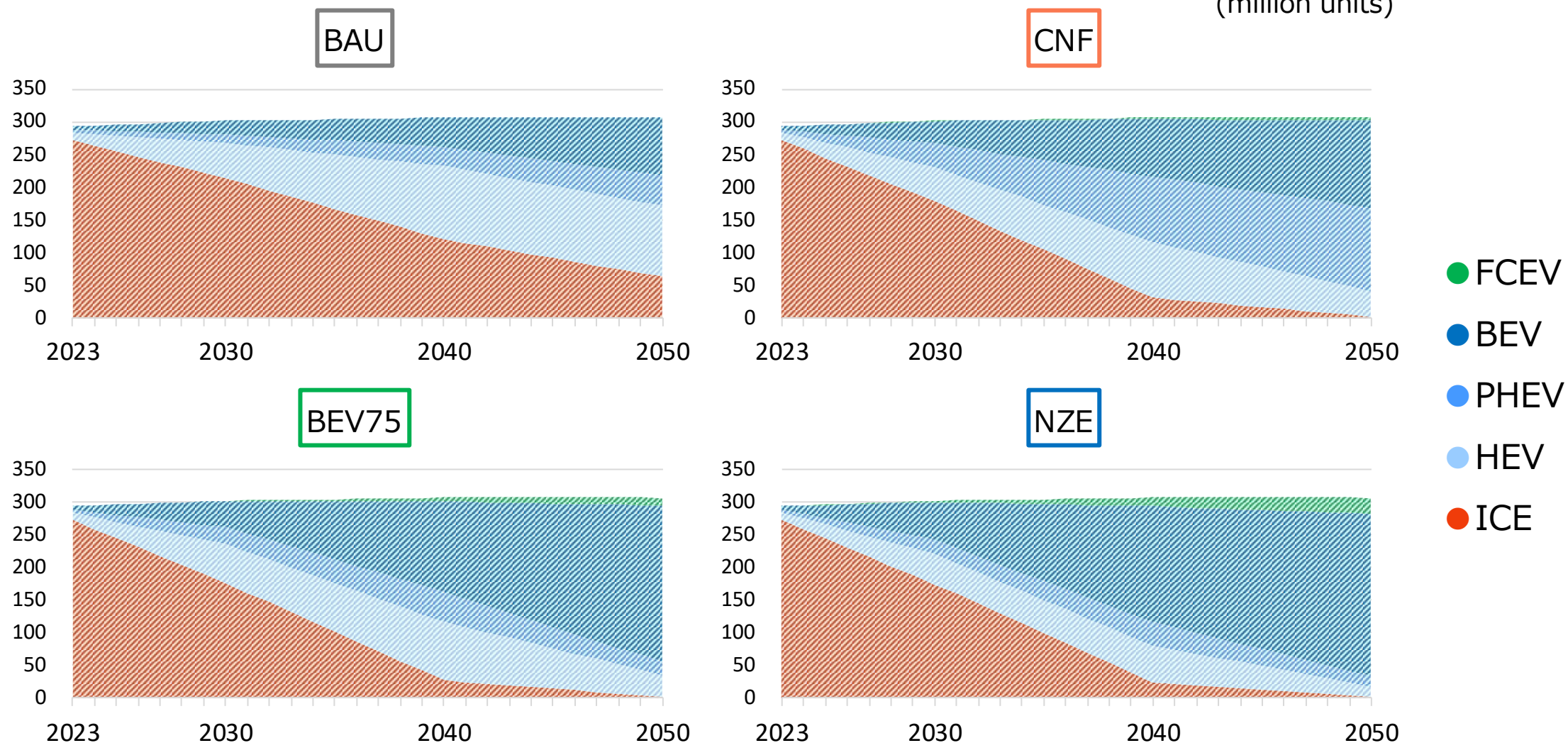


● BEV
● ICE

Note: Historical values are based on EDMC estimates. Future total new vehicle sales are EDMC estimates, and EDMC estimated the powertrain mix using assumptions from JAMA scenarios.

In-Use Passenger Car Fleet (Advanced Economies Europe)

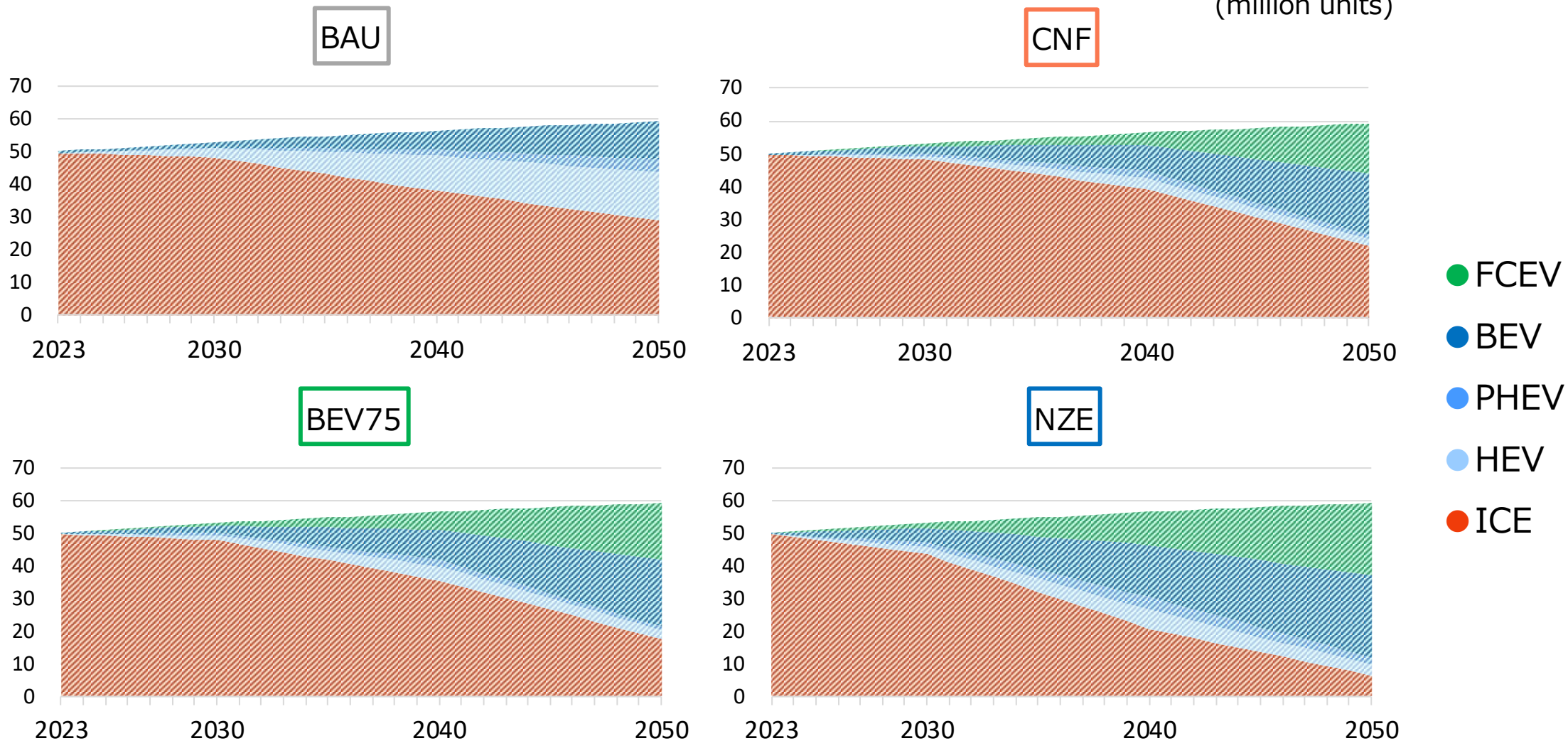
(million units)



Note: Historical data based on the 2026 edition of the EDMC Handbook of Japan's & World Energy & Economic Statistics (JAMA's previous analysis was based on the Handbook's 2022 edition); in-use car fleet projections based on [IEEJ Outlook 2026](#) (published 2025); powertrain mix projections based on JAMA scenarios.

In-Use Truck and Bus Fleets (Advanced Economies Europe)

(million units)



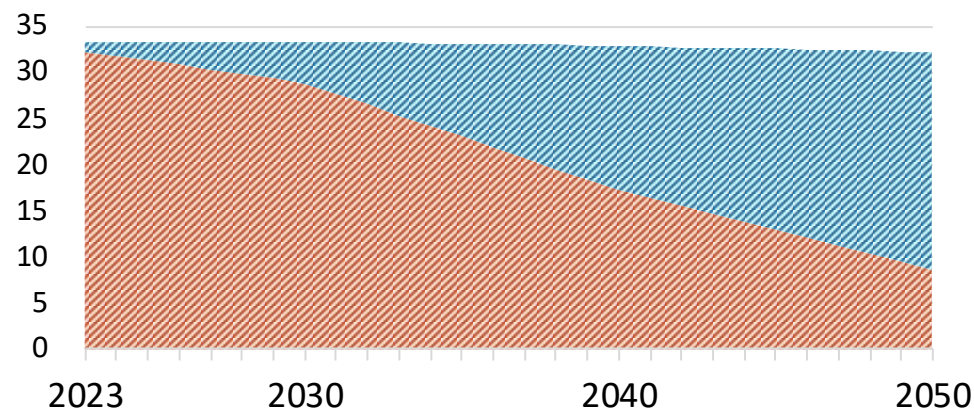
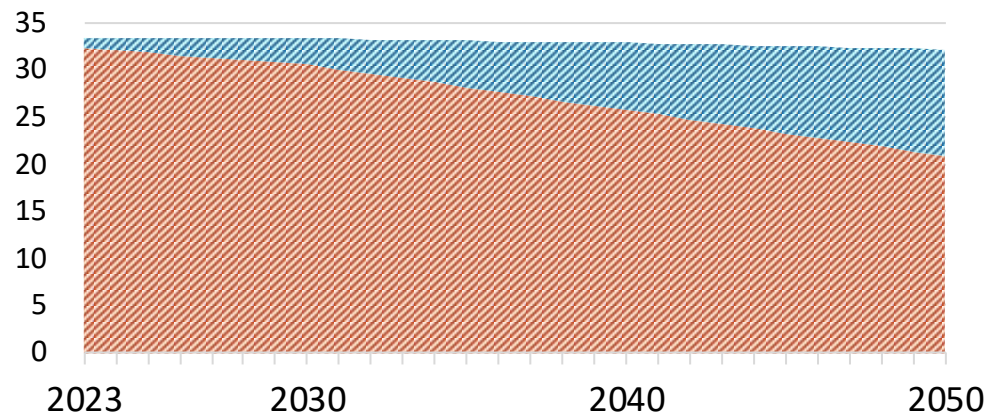
Note: Historical data based on the 2026 edition of the EDMC Handbook of Japan's & World Energy & Economic Statistics (JAMA's previous analysis was based on the Handbook's 2022 edition); in-use car fleet projections based on [IEEJ Outlook 2026](#) (published 2025); powertrain mix projections based on JAMA scenarios.

In-Use Motorcycle Fleet (Advanced Economies Europe)

(million units)

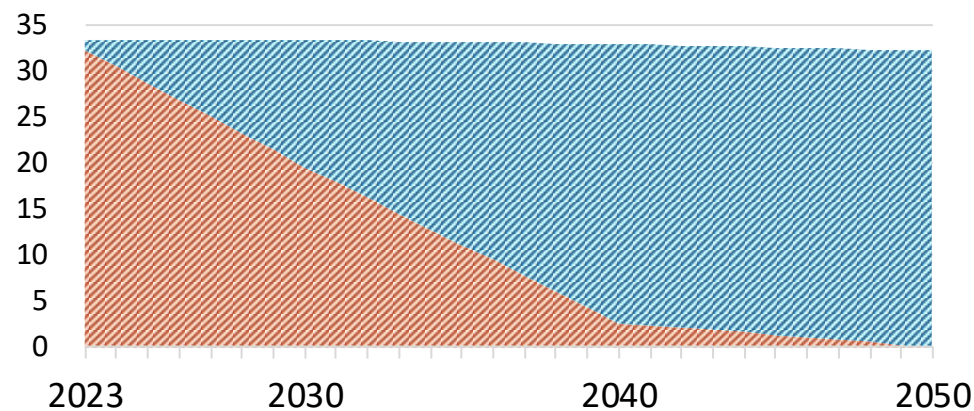
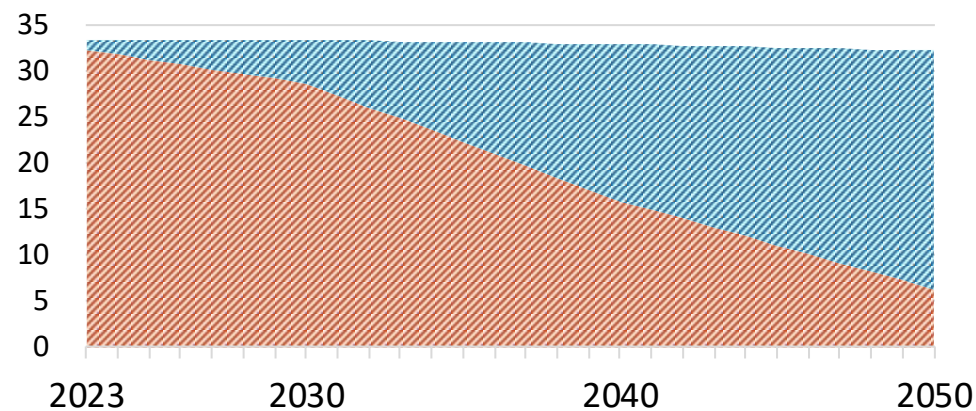
BAU

CNF



BEV75

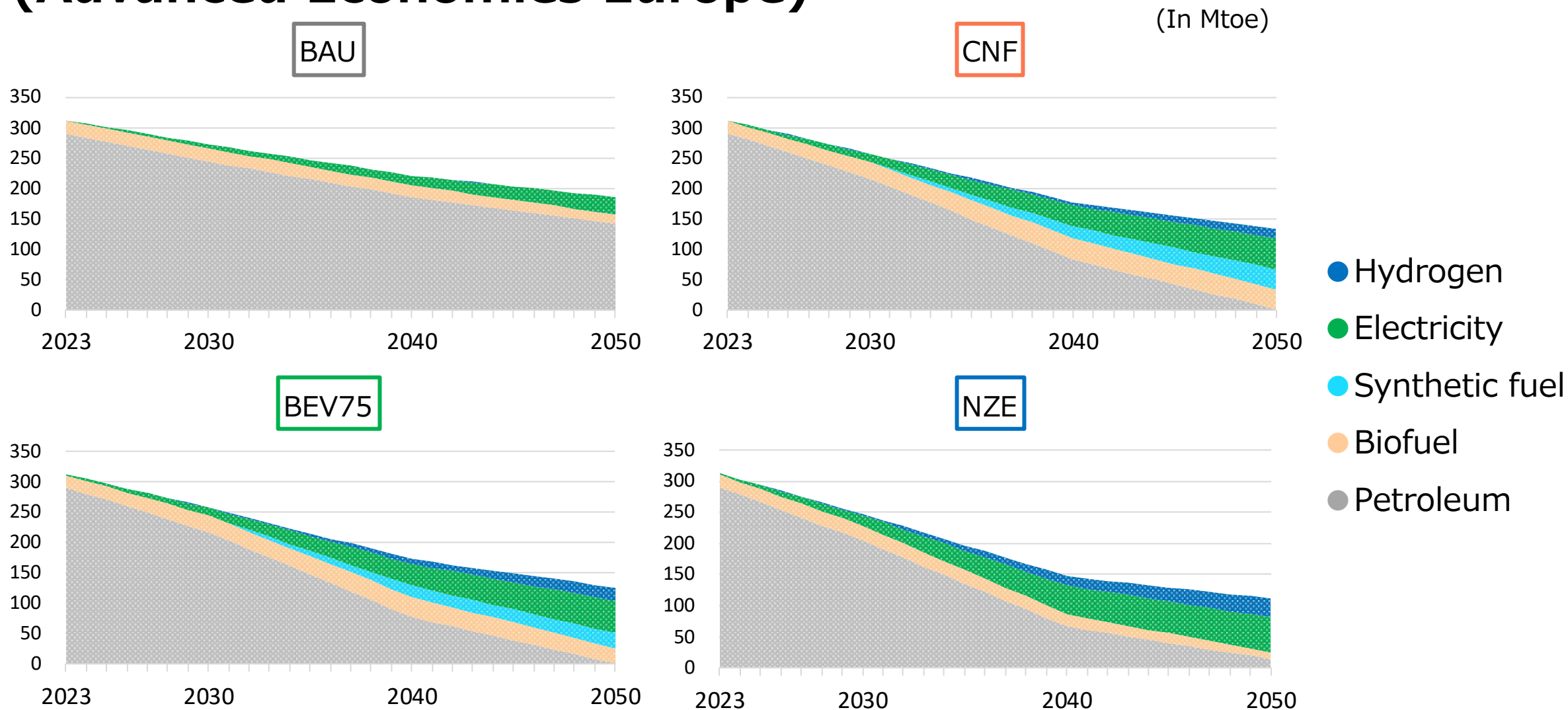
NZE



● BEV
● ICE

Note: Historical values are EDMC estimates using [IRF World Road Statistics](#) and national statistics. In-use fleet projections are EDMC estimates, and EDMC estimated the powertrain mix using JAMA scenarios.

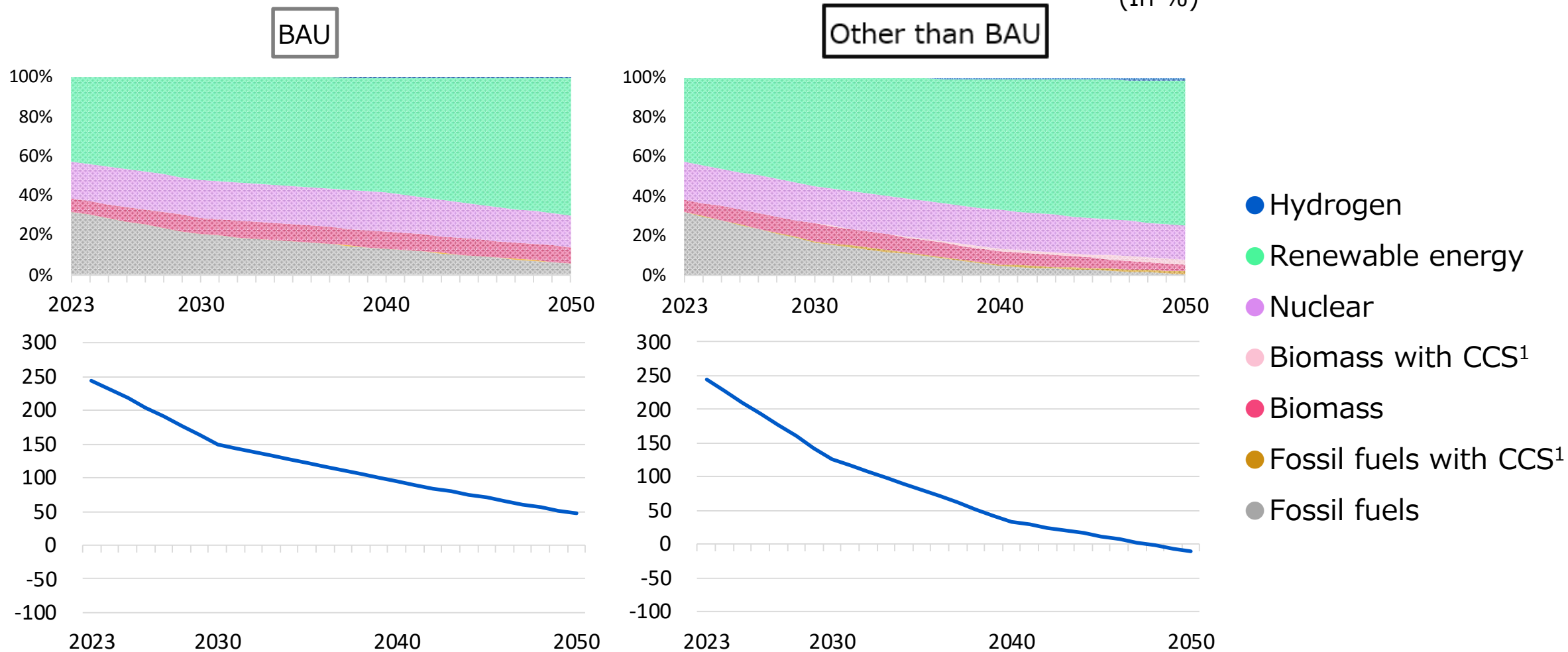
Automotive Fuel Mix (Advanced Economies Europe)



Note: Historical values are EDMC estimates. EDMC also estimated future values, based on JAMA scenarios.

Energy Mix (Advanced Economies Europe)

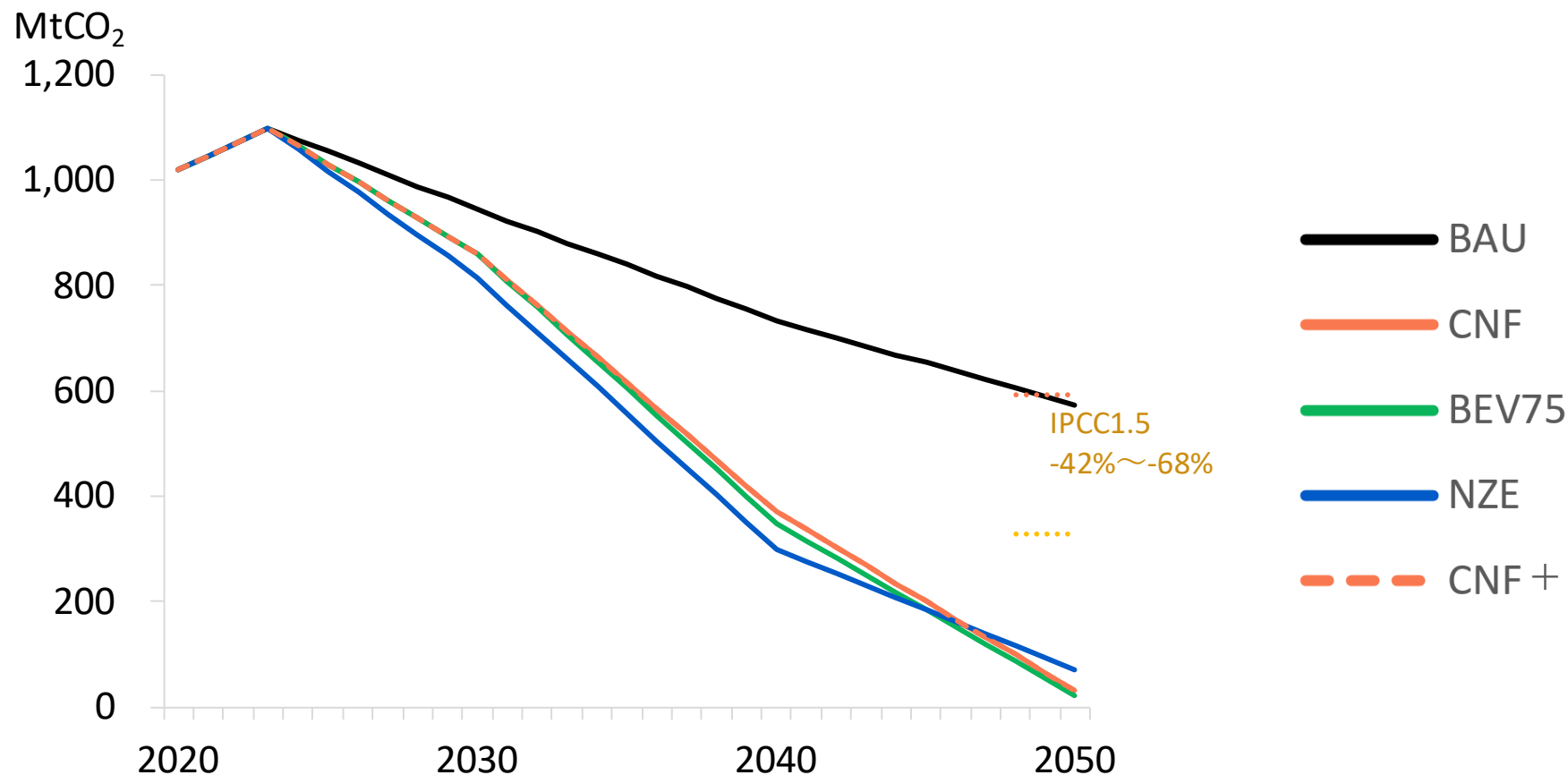
(In %)



¹CCS: Carbon capture and storage is a technology used to reduce atmospheric CO2 emissions by capturing CO2 emitted from power plants, factories, and other sources and storing it underground or in other locations.

Note: Historical data based on [IEA World Energy Balances](#); future projections based on [IEEJ Outlook 2026](#) (published 2025).

CO₂ Emissions (Advanced Economies Europe)



Note: Since the results for the CNF and CNF+ scenarios are identical for advanced economies in Europe, the two lines overlap in both graphs. “IPCC 1.5°C (-42% to -68%)” refers to the interquartile range of scenarios, presented in Chapter 10 of the IPCC WG III Sixth Assessment Report, that limit global warming to 1.5°C with no or limited overshoot. In those scenarios, CO₂ emissions from the global transport sector are reduced by approximately 42% to 68% by 2050 relative to 2020 levels. Values within or below this range can be regarded as consistent with the IPCC 1.5°C goal.

In all non-BAU scenarios, CO₂ emission levels are close to carbon neutrality.