

## Annex 2: ASEAN

# Trends in ASEAN @2050

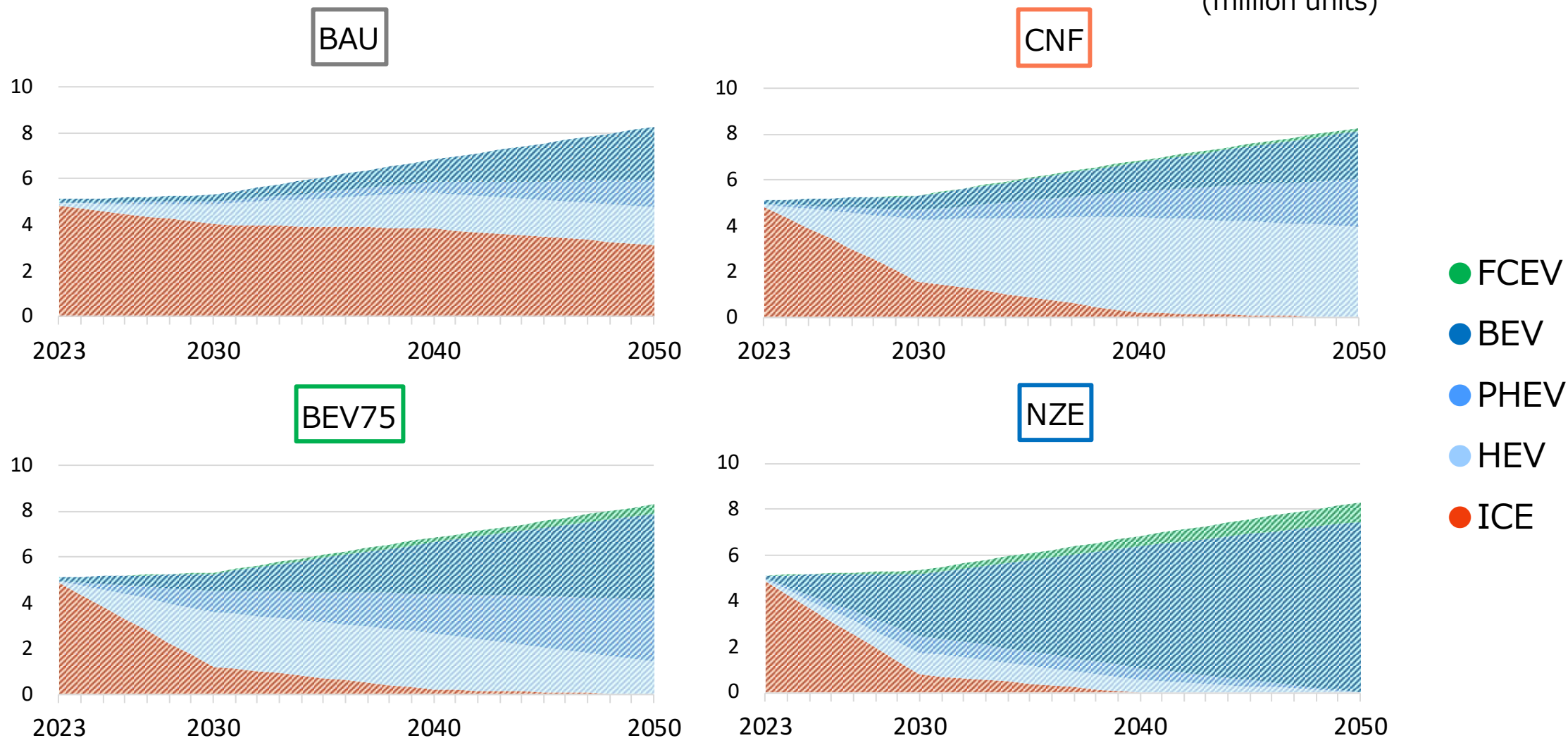
| Scenario | Trends in ASEAN      |                                                                                                                                                                                                                                                                                                                                                             | 2050/2020 CO <sub>2</sub> Emissions                               |
|----------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| All      | Market               | <ul style="list-style-type: none"> <li>Passenger cars, trucks and buses: Significant increases in both new vehicle sales and in-use fleets; for motorcycles, gradual increases in both new vehicle sales and in-use fleets.</li> </ul>                                                                                                                      |                                                                   |
|          | Energy mix           | <ul style="list-style-type: none"> <li>Share of clean energy + CCS is 68%.</li> </ul>                                                                                                                                                                                                                                                                       |                                                                   |
| CNF      | Electrified vehicles | <ul style="list-style-type: none"> <li>Share of electrified vehicles in new vehicle sales: 89% for passenger cars, trucks and buses, with PHEVs accounting for 27% of new passenger car sales, and 80% for motorcycles.</li> <li>Share of BEVs/FCEVs in in-use vehicle fleets: 23% for passenger cars, trucks and buses and 74% for motorcycles.</li> </ul> | -36% (CNF+ -45%)<br>Increase until 2030, then decrease thereafter |
|          | Fuel mix             | <ul style="list-style-type: none"> <li>60% is CNF (synthetic fuels, biofuels) + electricity + hydrogen.</li> <li>CNF share represents 51% of total liquid fuel consumption in 2023 (CNF+ 59%).</li> </ul>                                                                                                                                                   |                                                                   |
| BEV75    | Electrified vehicles | <ul style="list-style-type: none"> <li>Share of BEVs/FCEVs in new vehicle sales: 60% for passenger cars, trucks and buses and 88% for motorcycles.</li> <li>Share of BEVs/FCEVs in in-use vehicle fleets: 41% for passenger cars, trucks and buses and 81% for motorcycles.</li> </ul>                                                                      | -44%<br>Increase until 2030, then decrease thereafter             |
|          | Fuel mix             | <ul style="list-style-type: none"> <li>72% is CNF (synthetic fuels, biofuels) + electricity + hydrogen.</li> <li>CNF share represents 38% of total liquid fuel consumption in 2023.</li> </ul>                                                                                                                                                              |                                                                   |
| NZE      | Electrified vehicles | <ul style="list-style-type: none"> <li>Share of BEVs/FCEVs in new vehicle sales: 100% for all vehicle types.</li> <li>Share of BEVs/FCEVs in in-use vehicle fleets: 81% for passenger cars, trucks and buses and 100% for motorcycles.</li> </ul>                                                                                                           | -51%<br>Decrease after 2023                                       |
|          | Fuel mix             | <ul style="list-style-type: none"> <li>79% is biofuels + electricity + hydrogen and assuming synthetic fuel is zero.</li> <li>Biofuel share represents 8% of total liquid fuel consumption in 2023.</li> </ul>                                                                                                                                              |                                                                   |

Note: In the CNF+ scenario CNF supply is roughly 1.2 times greater than in the CNF scenario, assuming that about half of sustainable aviation fuel in 2050 is produced via Fischer-Tropsch synthesis; the additional supply is preferentially allocated to Africa, the Middle East, India, and ASEAN, where power sector decarbonization poses a challenge.

**In all non-BAU scenarios, CO<sub>2</sub> emissions fall by 36% to 51% compared to 2020.**  
(CO<sub>2</sub> emissions just meet or are within the IPCC 1.5°C climate scenarios' -42% to -68% range in 2050.)

# New Passenger Car Sales (ASEAN)

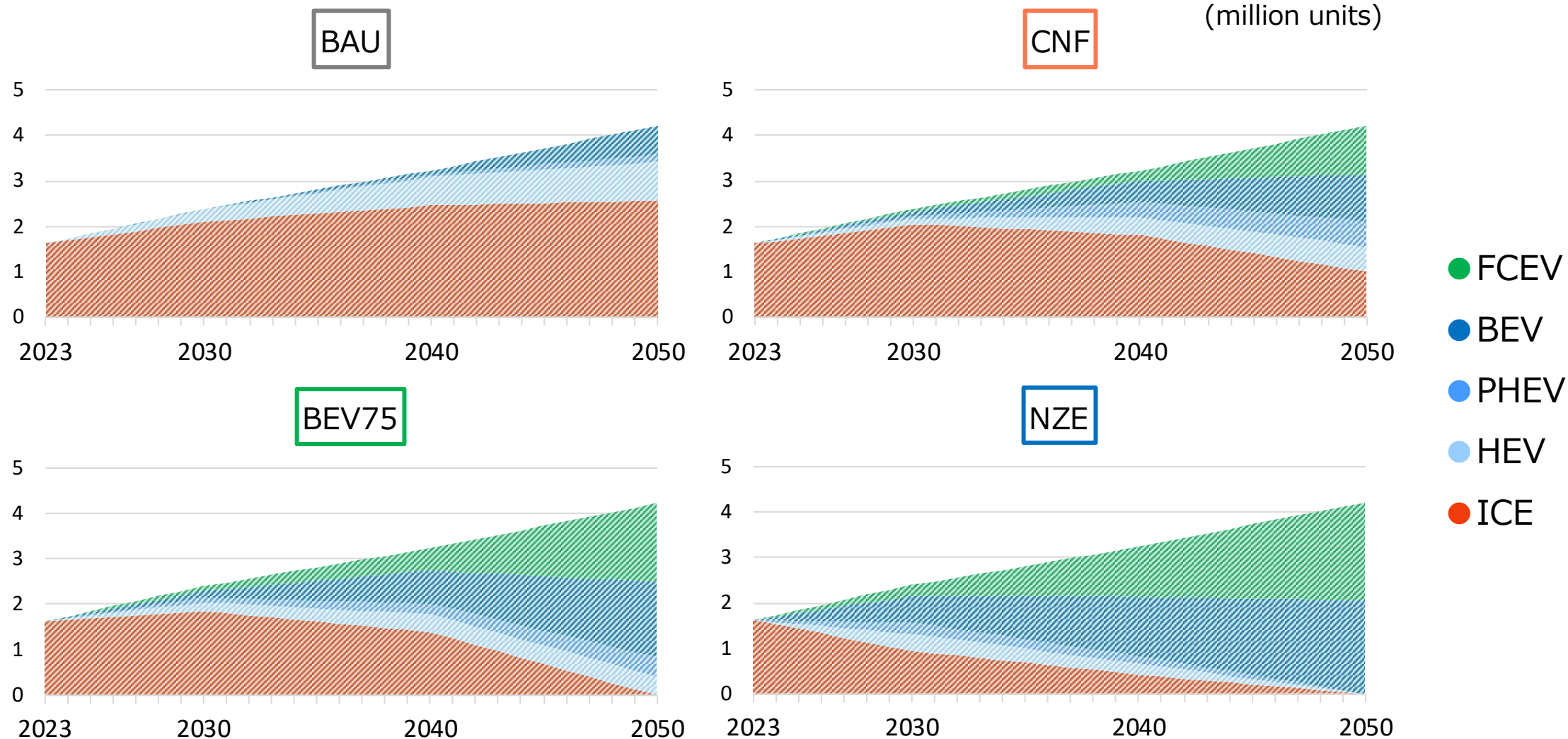
(million units)



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.

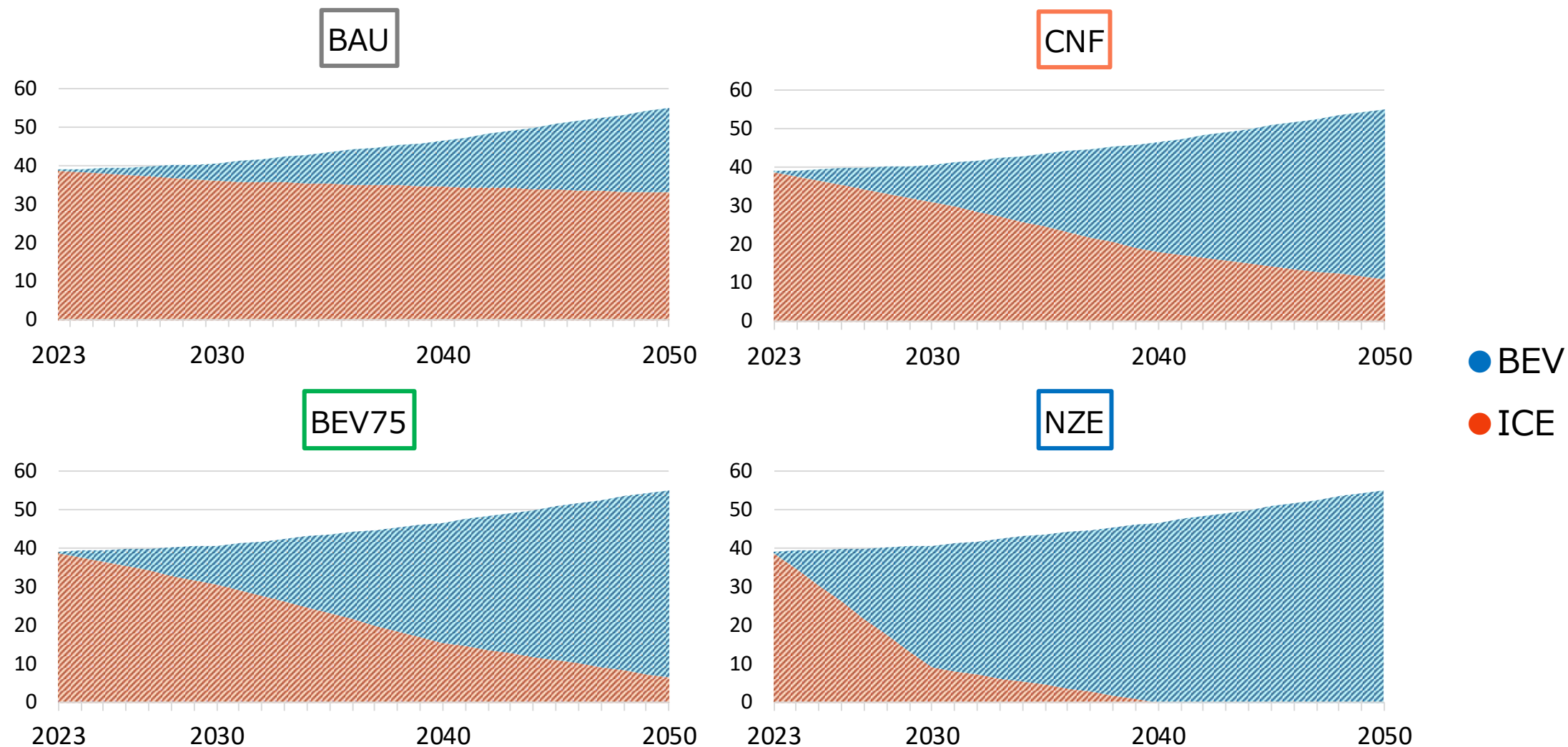
# New Truck and Bus Sales (ASEAN)

(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.

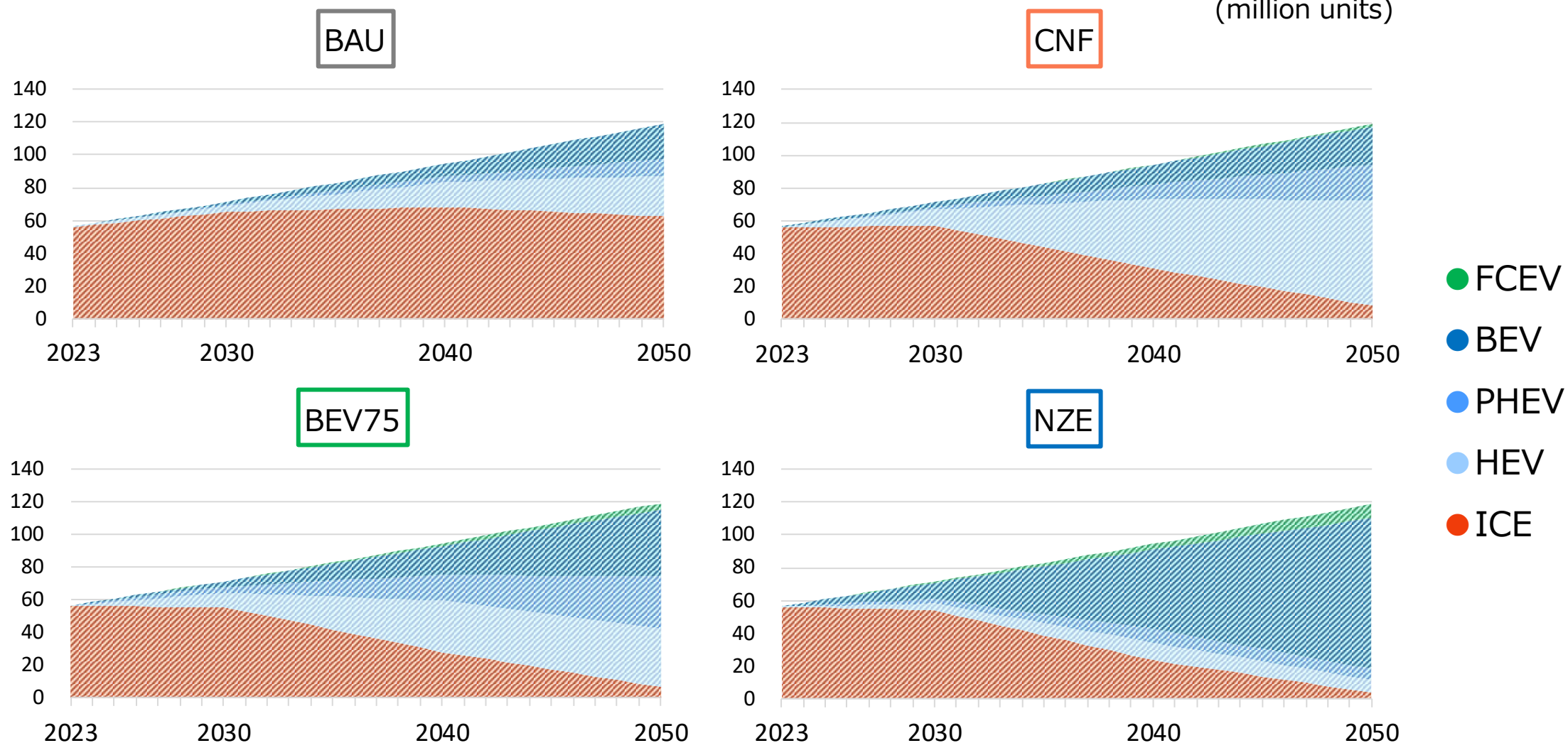
# New Motorcycle Sales (ASEAN)



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 (ASEAN)

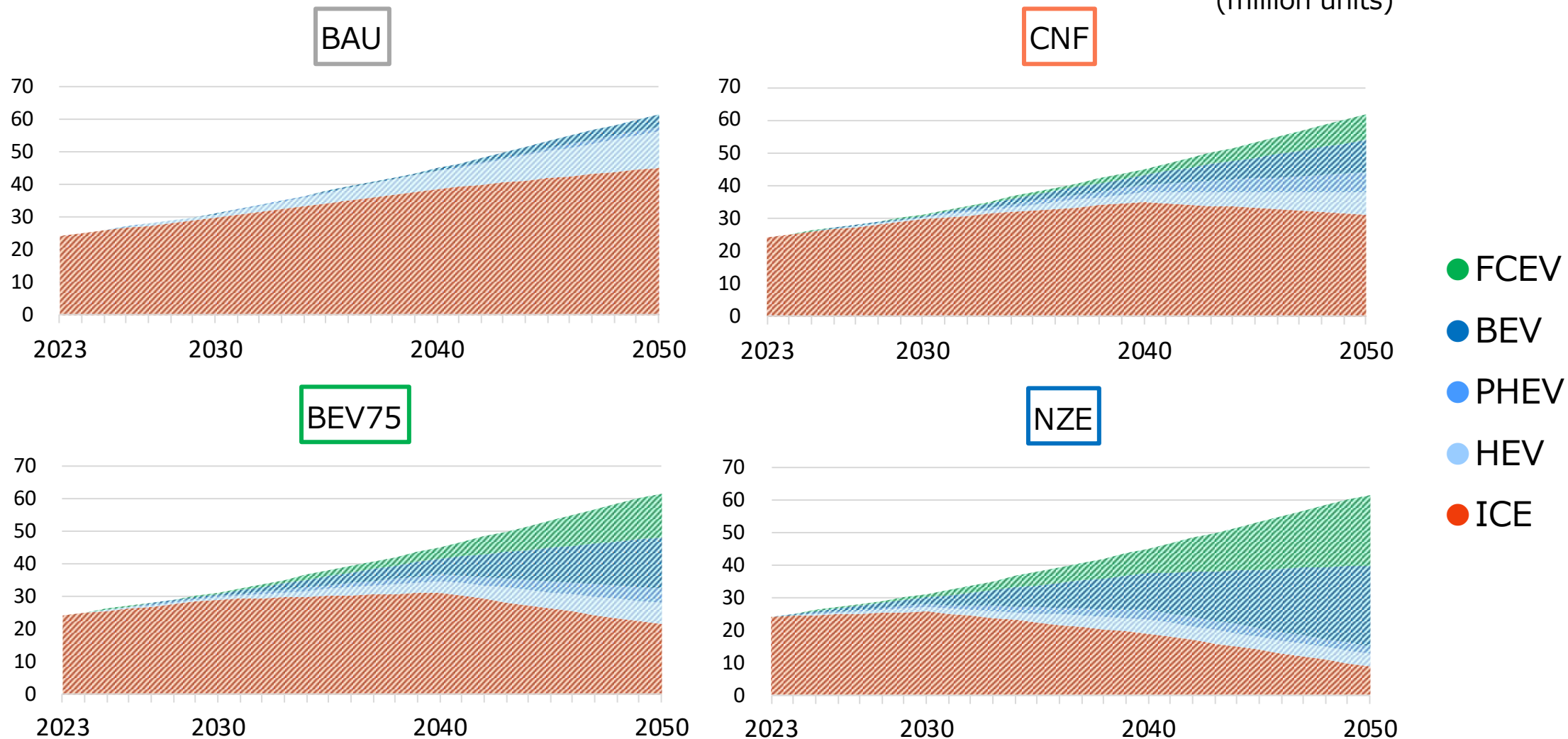
(million units)



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 (ASEAN)

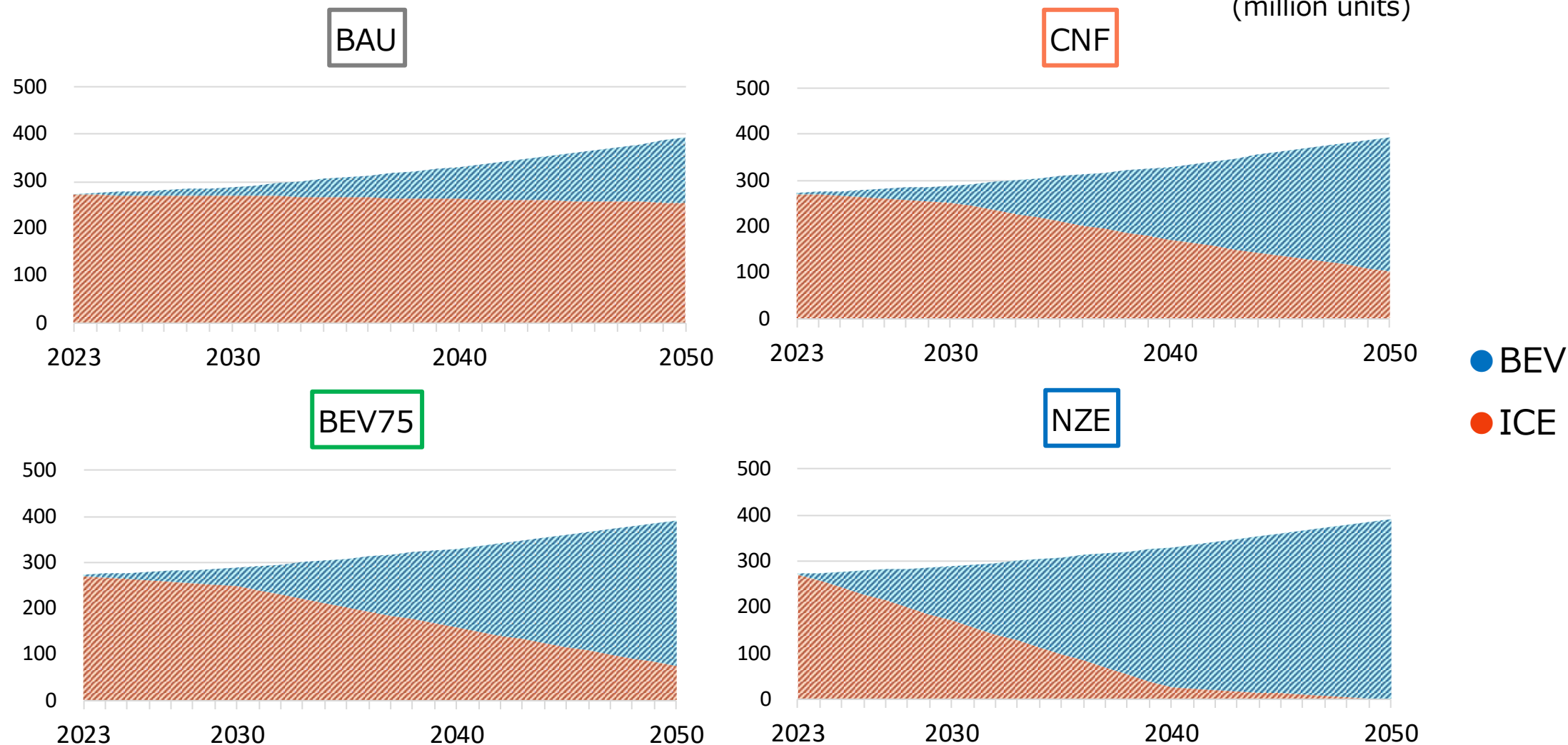
(million units)



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 (ASEAN)

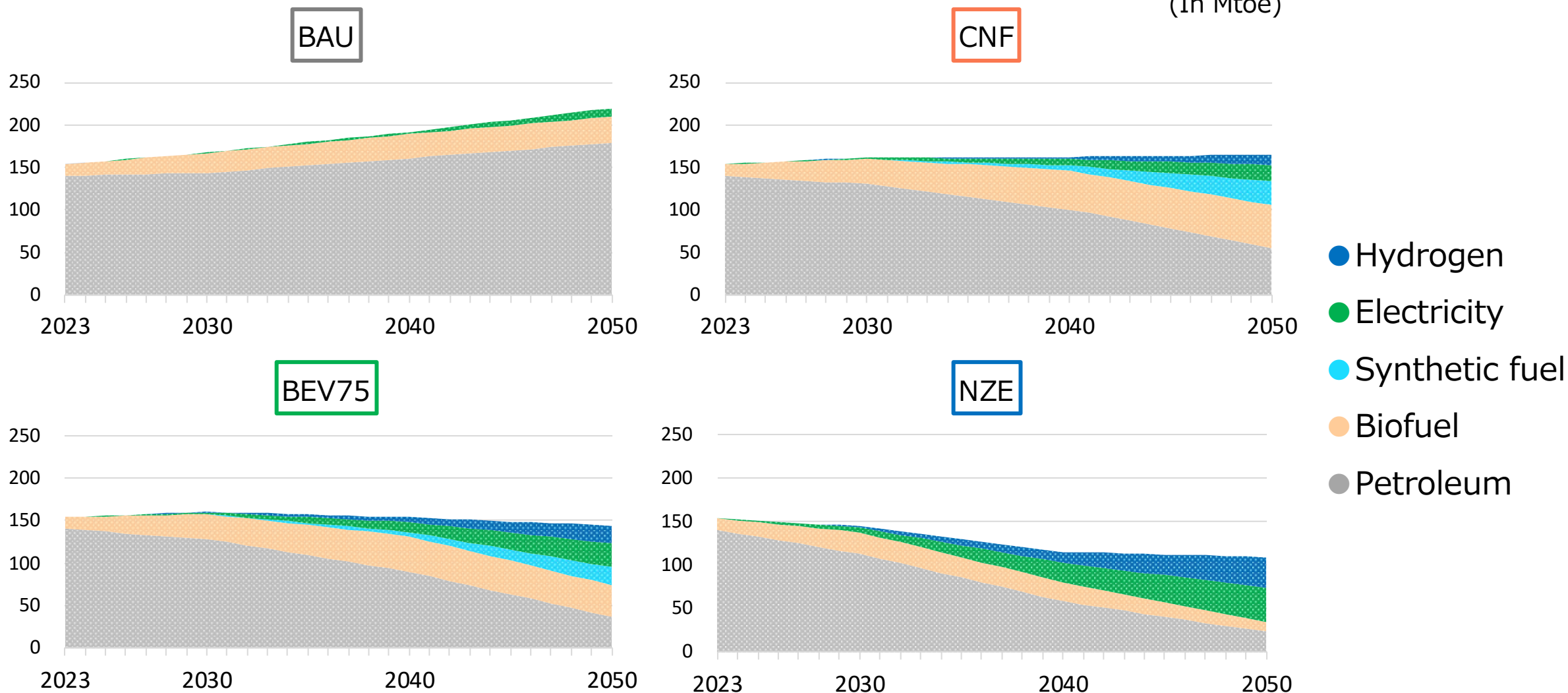
(million units)



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.

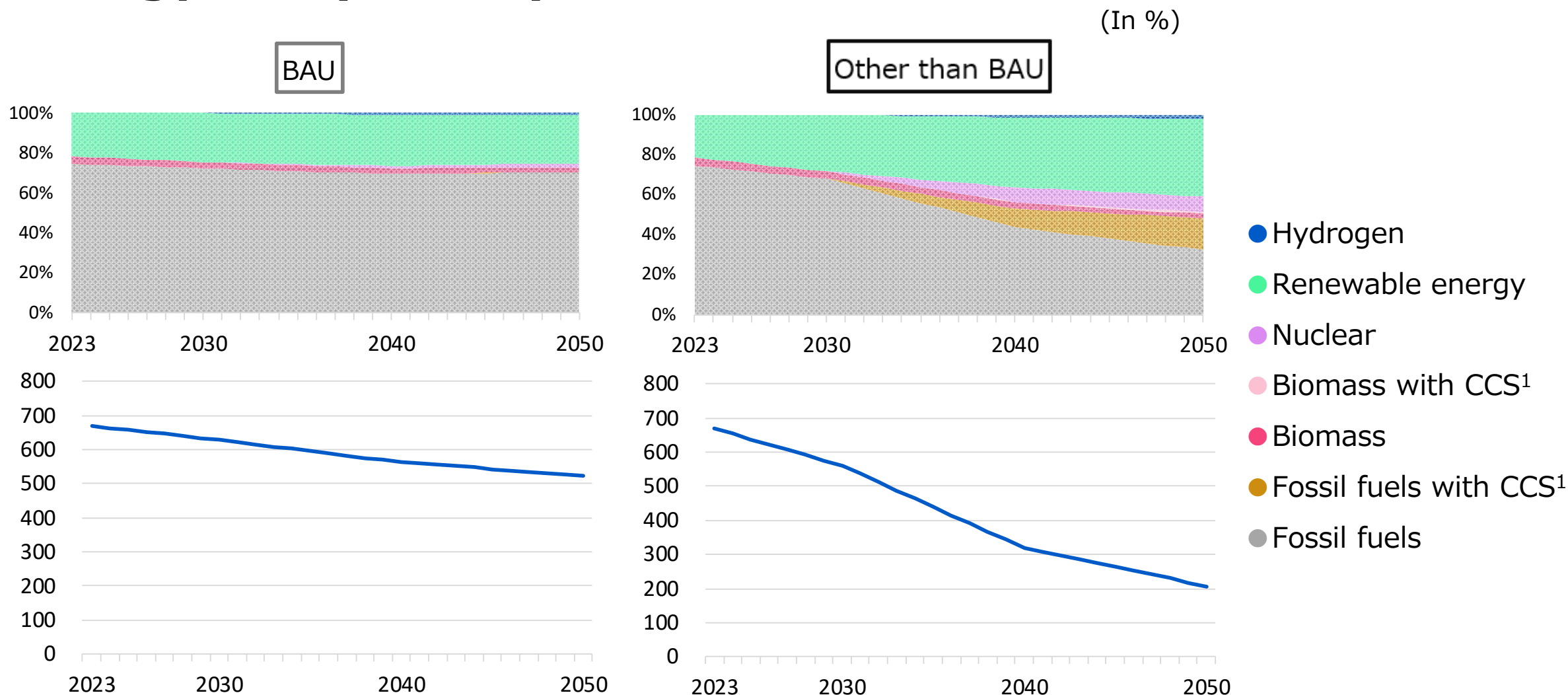
# Automotive Fuel Mix (ASEAN)

(In Mtoe)



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

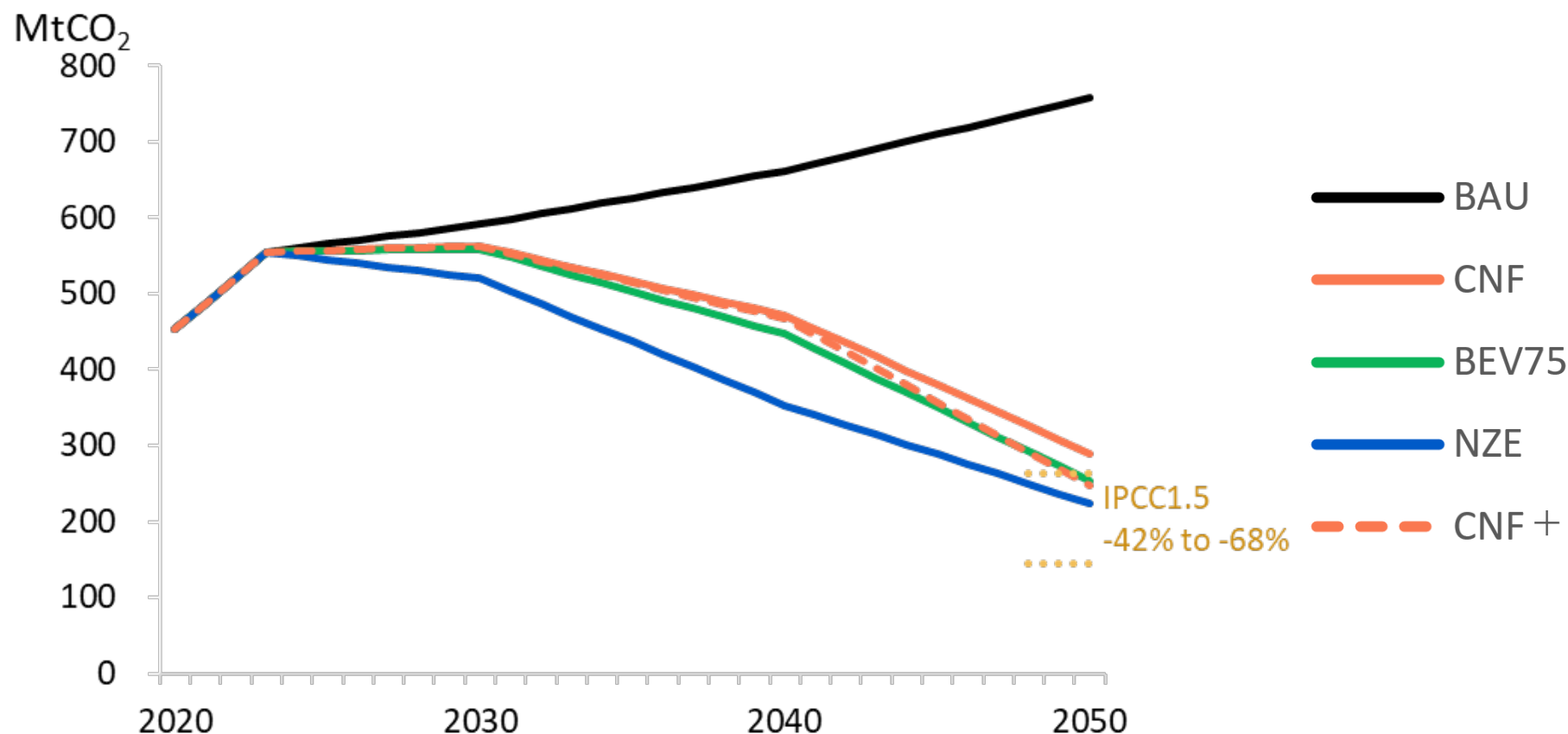
# Energy Mix (ASEAN)



¹CCS: Carbon capture and storage is a technology used to reduce atmospheric CO<sub>2</sub> emissions by capturing CO<sub>2</sub> 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).

# CO<sub>2</sub> Emissions (ASEAN)



Note: "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, CO<sub>2</sub> 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, CO<sub>2</sub> emissions fall by 36% to 51% compared to 2020.**  
(CO<sub>2</sub> emissions just meet or are within the IPCC 2050 1.5°C climate scenarios' -42% to -68% range in 2050.)