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Global Update on Fuel Quality Policies – What is New for 2025?

GFS Webinar

Feb. 19, 2025

8.00 am U.S. Central



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Agenda

Global Overview

Regional Overviews

Asia Pacific

Middle East & Africa

Russia & CIS

Europe

Central & Latin America

North America

Summary and Q&A

Meet Our Speakers

Introducing the Global Fuel Specifications (GFS) team



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Global

Global Overview

Regulatory developments occurring globally for fuel sulfur and octane

- **Overall**

- Gasoline: Sulfur is key focus but changes are also expected for other parameters such as octane, benzene and aromatics
- Diesel: Sulfur is key focus but changes are also expected for other parameters such as cetane and polyaromatics
- Specification changes are also expected for biofuels and blends (due to new biofuel mandates), off-road diesel, marine fuels etc.

- **Sulfur**

- Several countries to reduce sulfur to 50 ppm and below in the next 5 years
- A number of countries plan to leapfrog from very high sulfur limits to very low ones
- On the other hand, larger countries follow the traditional route of reducing first to 150/350 ppm, then 50 ppm and eventually 10 ppm (e.g. China, India, Russia)

- **Octane**

- Emerging issue with sulfur reduction being implemented
- MTBE and ethanol are most common enhancers

- **Vehicle Emissions and Fuel Economy**

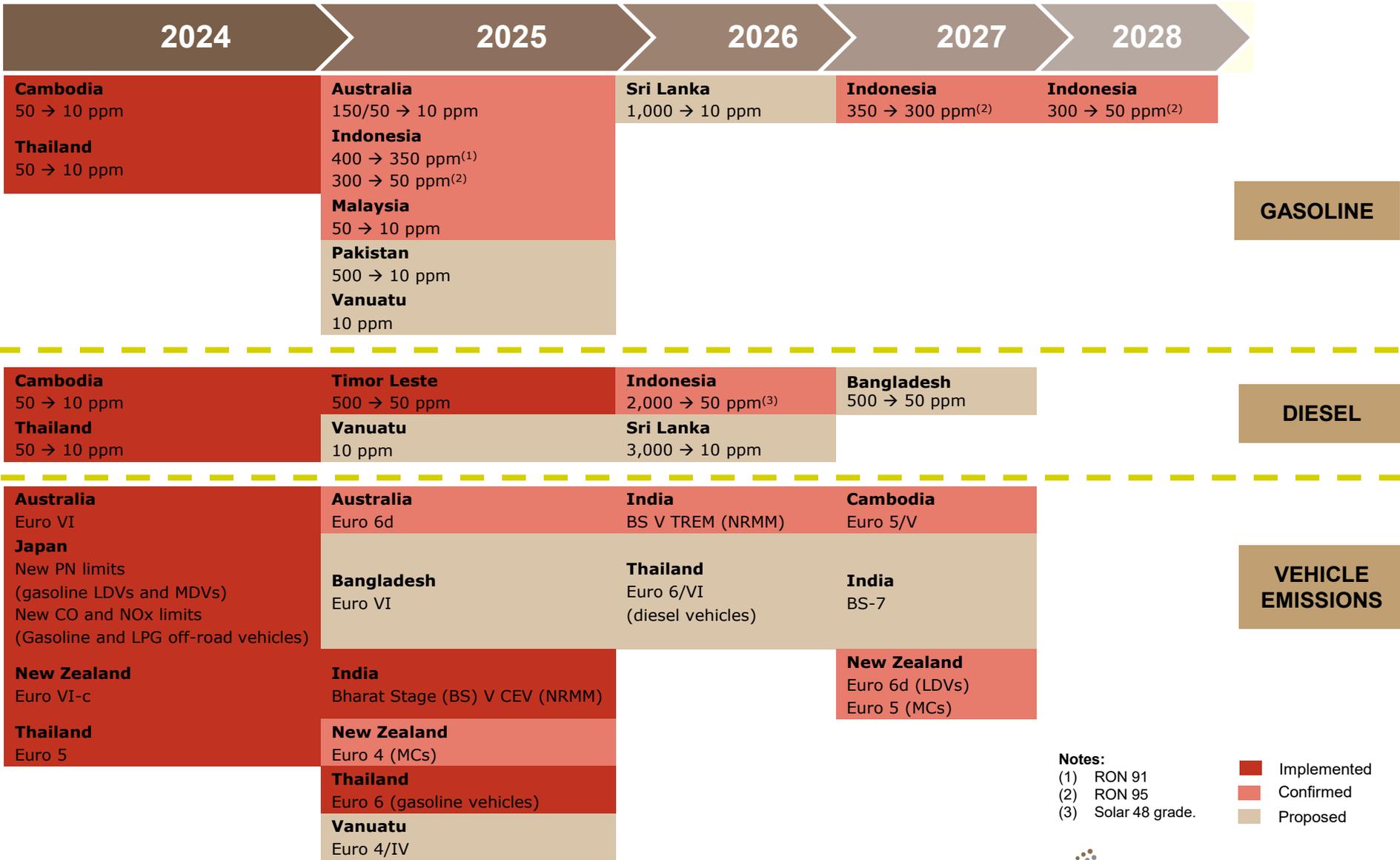
- New emission standards ranging from Euro 4/IV to 6/VI to be implemented in the next five years
- Fuel economy targets to be tightened in the next five years



Asia Pacific

2024 Wrap Up, Outlook for 2025 and Beyond

Australia delayed 10 ppm sulfur for gasoline by a year from December 2024 to December 2025

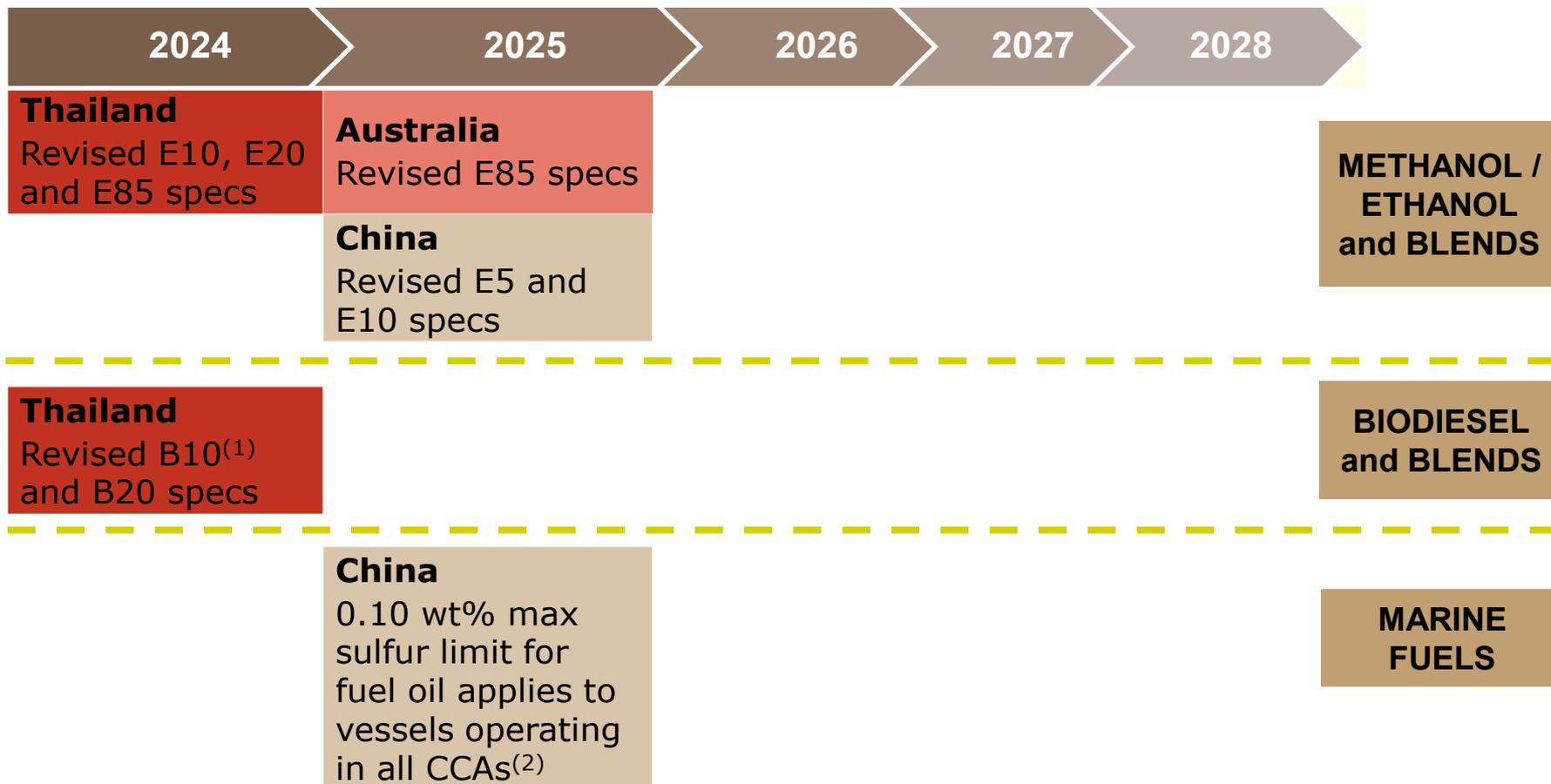


Notes:
 (1) RON 91
 (2) RON 95
 (3) Solar 48 grade.

■ Implemented
■ Confirmed
■ Proposed

2024 Wrap Up, Outlook for 2025 and Beyond

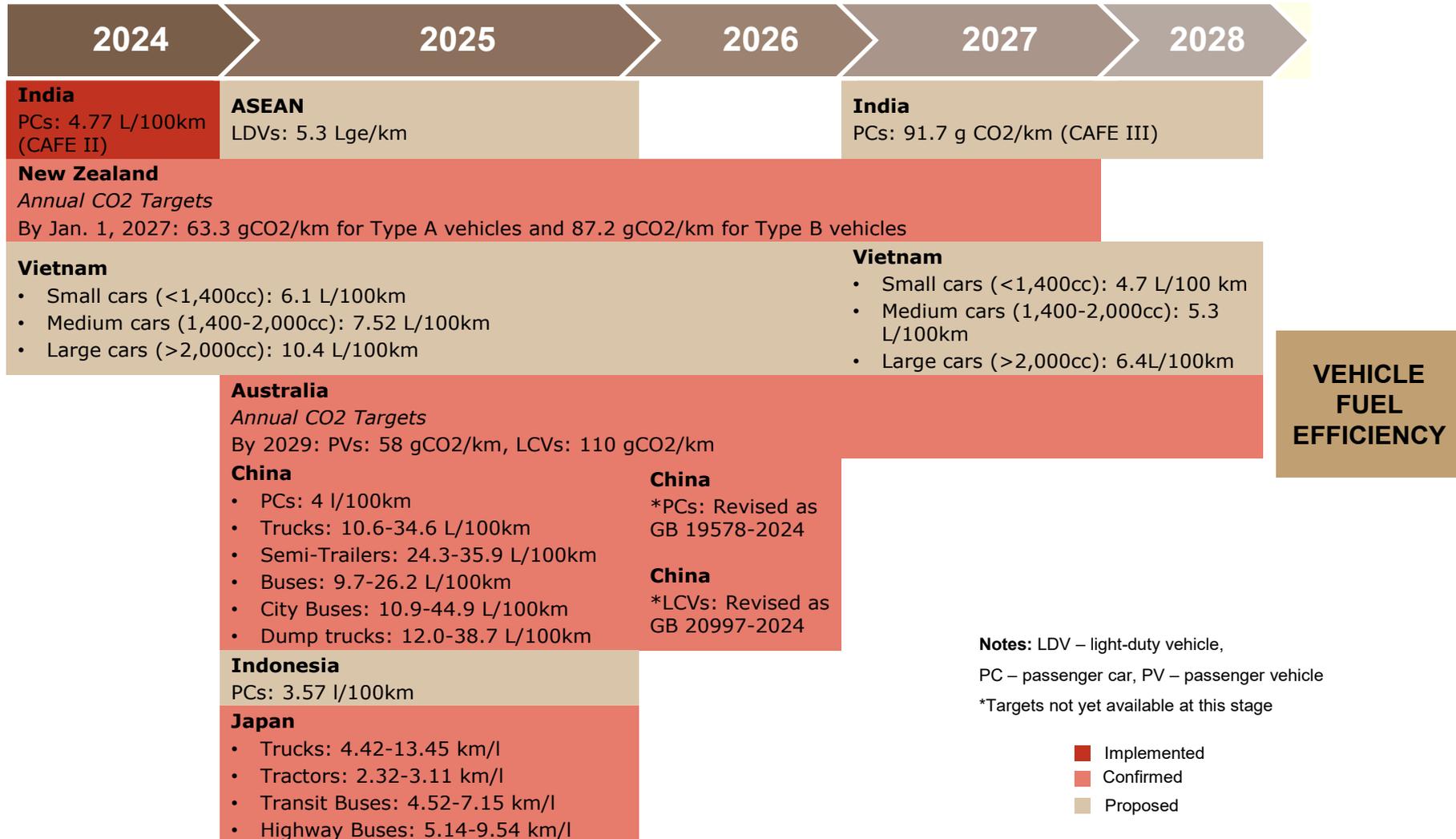
China's proposed E5 specs set to replace conventional gasoline in the future



- Notes:**
- (1) B10 phased out since May 1, 2024.
 - (2) In China, domestic ECAs refer to the combination of coastal control areas (CCAs), which stretch from the southern coastline of Guangxi Zhuang Autonomous Region in southern China to the eastern coastline of Liaoning province in northeast China, and inland river control areas (IRCAs), which consists of parts of the Yangtze River and Xijiang River.
- Implemented
■ Confirmed
■ Proposed

2024 Wrap Up, Outlook for 2025 and Beyond

Fuel efficiency improvements of PCs and LDVs are the main focus of several countries



VEHICLE FUEL EFFICIENCY

Notes: LDV – light-duty vehicle,
PC – passenger car, PV – passenger vehicle
*Targets not yet available at this stage

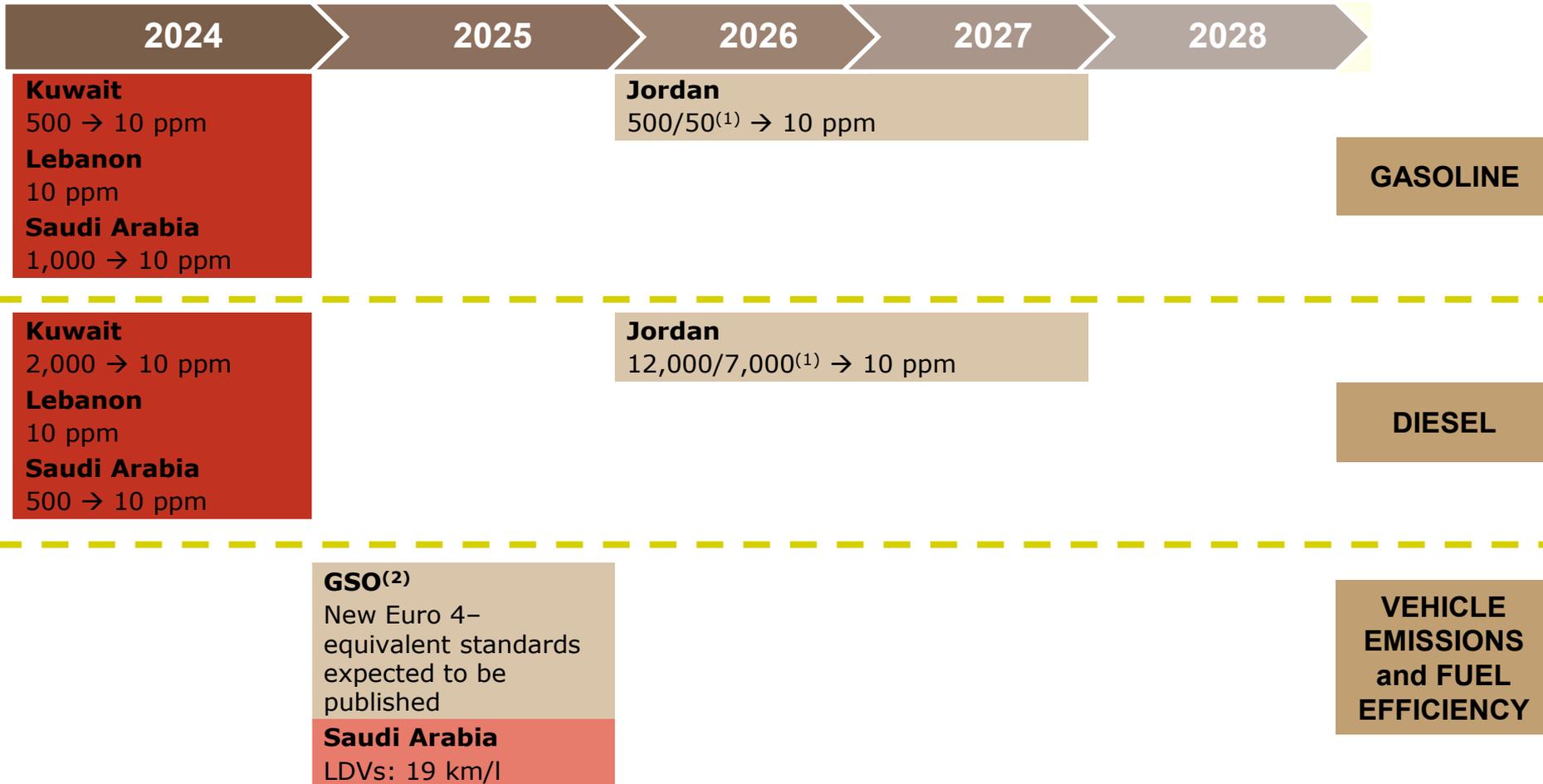
- Implemented
- Confirmed
- Proposed



Middle East

2024 Wrap Up, Outlook for 2025 and Beyond

Remaining GCC countries expected to follow Saudi Arabia's footsteps in requiring 10 ppm, if not already done so



Notes:

(1) Refinery limits.

(2) GSO – GCC Standardization Organization. Member countries include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and U.A.E.

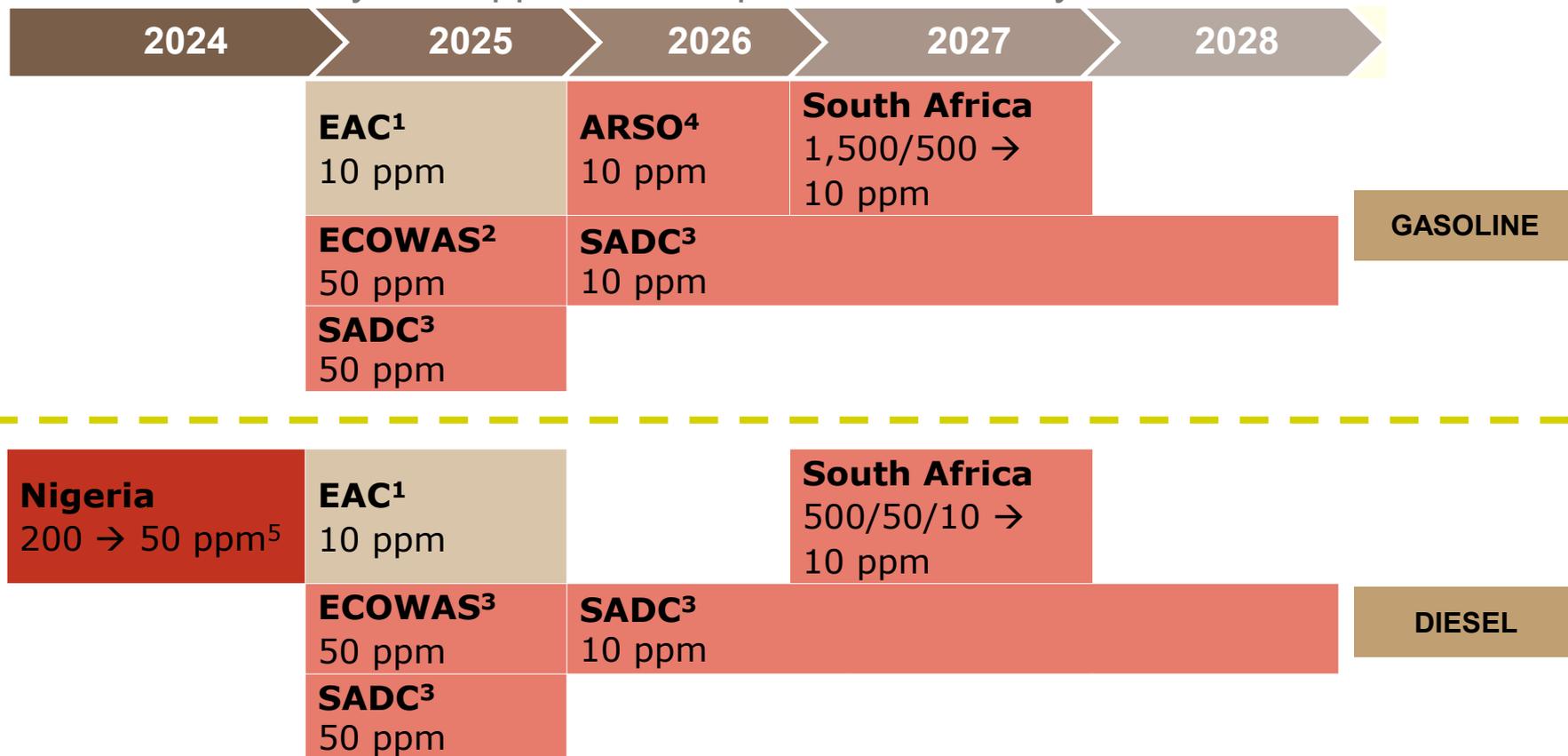
- Implemented
- Confirmed
- Proposed



Africa

2024 Wrap Up, Outlook for 2025 and Beyond

South Africa delayed 10 ppm from Sept. 1, 2023 to July 1, 2027



Notes:

- (1) EAC – East African Community. Member countries include Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda.
- (2) ECOWAS – Economic Community of West African States. Member countries include Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.
- (3) SADC – Southern African Development Community. Member countries include Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe.
- (4) ARSO – African Organization for Standardization. ARSO has membership in 40 African countries (74% of African Countries are ARSO members).
- (5) Imports only.

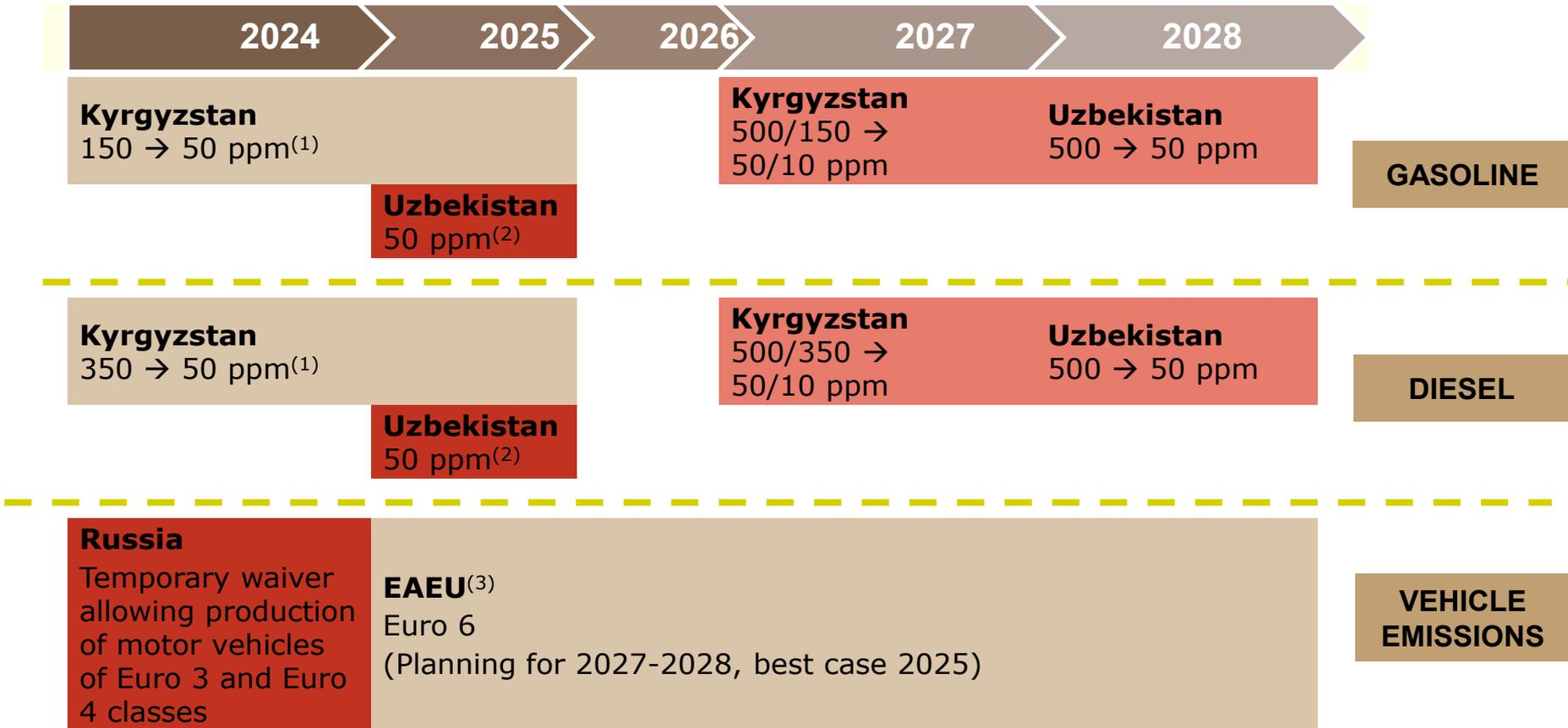
- Implemented
- Confirmed
- Proposed



Russia & CIS

2024 Wrap Up, Outlook for 2025 and Beyond

Kyrgyzstan delaying 50/10 ppm implementation multiple times with latest deadline set for 2027



Notes:

- (1) Refinery indications.
- (2) Imports only.
- (3) EAEU or EEU - Eurasian Economic Union. Member countries include Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

- Implemented
- Legislation confirmed
- Industry/ ministry indication / refinery upgrades



Europe

2024 Wrap Up, Outlook for 2025 and Beyond:

EU Fuels and Vehicles Policy Status and Outlook

EU focusing on CO2 and other emissions reduction from the transportation sector

CEN Standards

2024-2025	Revised standards published: Auto LPG (EN 589:2024), B20-B30 (EN 16709:2024), and Off-road gasoline (EN 17867:2023+A1:2025)
2025	Standards under approval: Gasoline (prEN 228:2024), Diesel (prEN 590:2024) and Biodiesel (prEN 14214:2024)
Date unavailable	New Technical Specification (TS) to be set: E10+ fuel

Emission Standards for On-road vehicles and Non-road Mobile Machinery (NRMM)

April 24, 2024	Adoption of Euro 7 regulation by the Council, which was published on May 8, 2024 as Regulation 2024/1257 in the EU Official Journal. It will take effect from Nov. 29, 2026 for new light-duty vehicles (LDVs) and May 29, 2028 for new heavy-duty vehicles (HDVs). For small-volume manufacturers, the effective dates will be set at July 1, 2030 and July 1, 2031 respectively. For cars and vans, the regulation maintains the current Euro 6 test conditions and exhaust emissions limits. In the case of buses and trucks, the regulation introduces stricter regulations. Both laboratory testing and real driving conditions impose tighter limits on exhaust emissions. Laboratory testing is capped at a NOx limit of 200 mg/kWh, while real driving conditions allow for a NOx limit of 260 mg/kWh. These adjustments are made while preserving the current Euro VI testing conditions.
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Fuel Efficiency and CO2 Standards

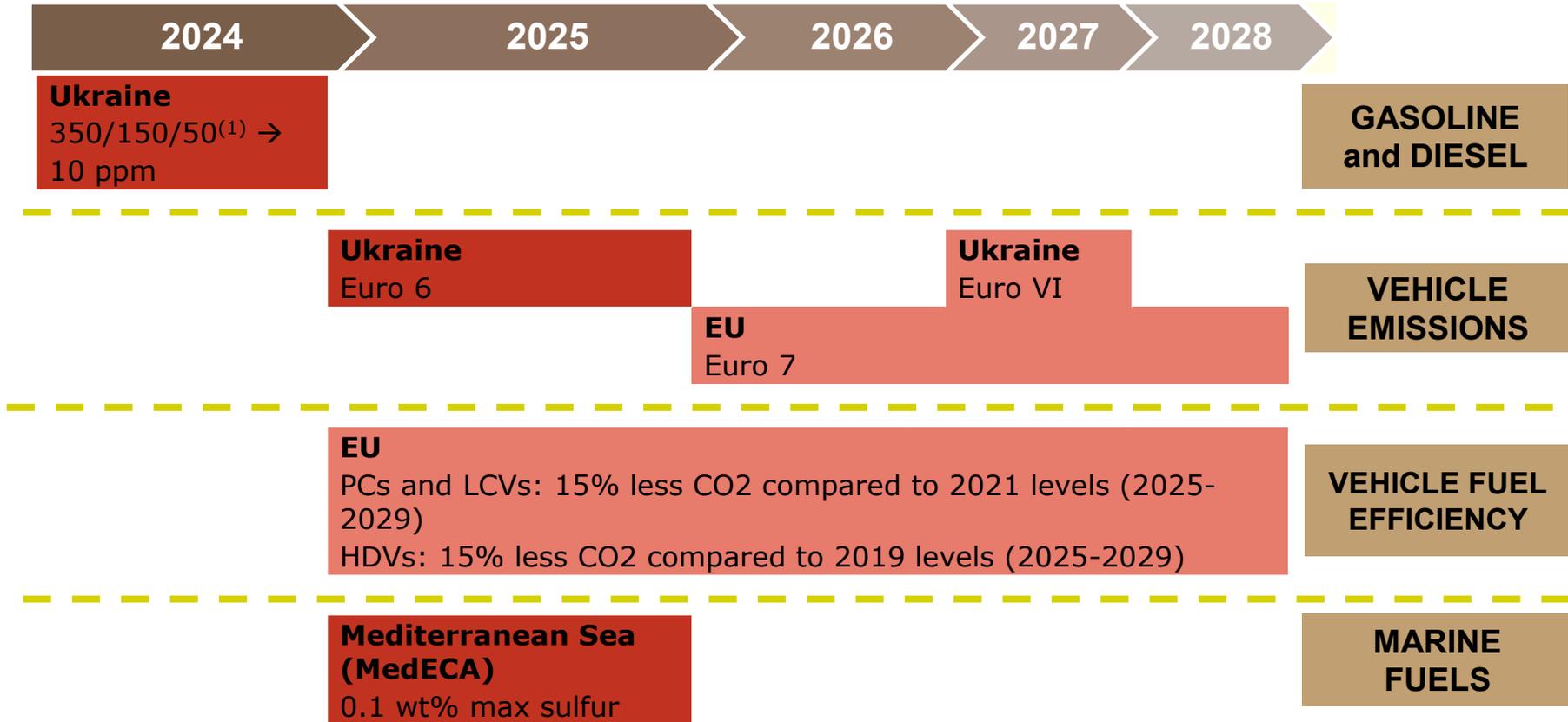
Jan. 1, 2024	EU Regulation No. 2022/1379 is an Amending Regulation to (EU) 2017/2400 as regards to the determination of CO2 emissions and fuel consumption of medium and heavy lorries and heavy buses, which expands scope to M3 and other N2 categories of HDVs and made mandatory for those manufactured from Jan. 1, 2024.
May 13, 2024	Legislation for expanding CO2 emissions reduction targets of HDV and medium-duty vehicles (MDV) through post-2030s was approved by the EP on April 10, 2024 and ratified by the Council on May 13, 2024. The revised standards maintain the CO2 reduction target of 15% for 2025 and raise the 2030 target to 45% while introducing a 65% reduction target for 2035 and a 90% target for 2040. In addition, 90% of new urban buses will have to be zero-emissions as of 2030, and all of them by 2035 (ZEV mandate). Specific emissions reduction targets will also be in place for trailers (7.5%) and semi-trailers (10%) by 2030, compared to 2025 levels.

Marine Fuels

Jan. 1, 2025	The FuelEU Maritime regulation mandates a 2% GHG intensity reduction for marine fuels in 2025, increasing to 80% by 2050, covering CO2, methane, and N2O.
	Emission Control Area for Sulfur Oxides (SOx-ECA) and PM covering the whole Mediterranean Sea (MedECA) requires all vessels to use fuel with a maximum sulfur content of 0.1 wt%

2024 Wrap Up, Outlook for 2025 and Beyond

Ukraine resumed Class 5 fuel requirements since Jan. 27, 2024



Notes: LCV – light commercial vehicles, PC – passenger cars

(1) Temporary waiver on Euro 3 and Euro 4 equivalent fuels applied to the armed forces and other military units until the end of martial law on Jan. 26, 2024.

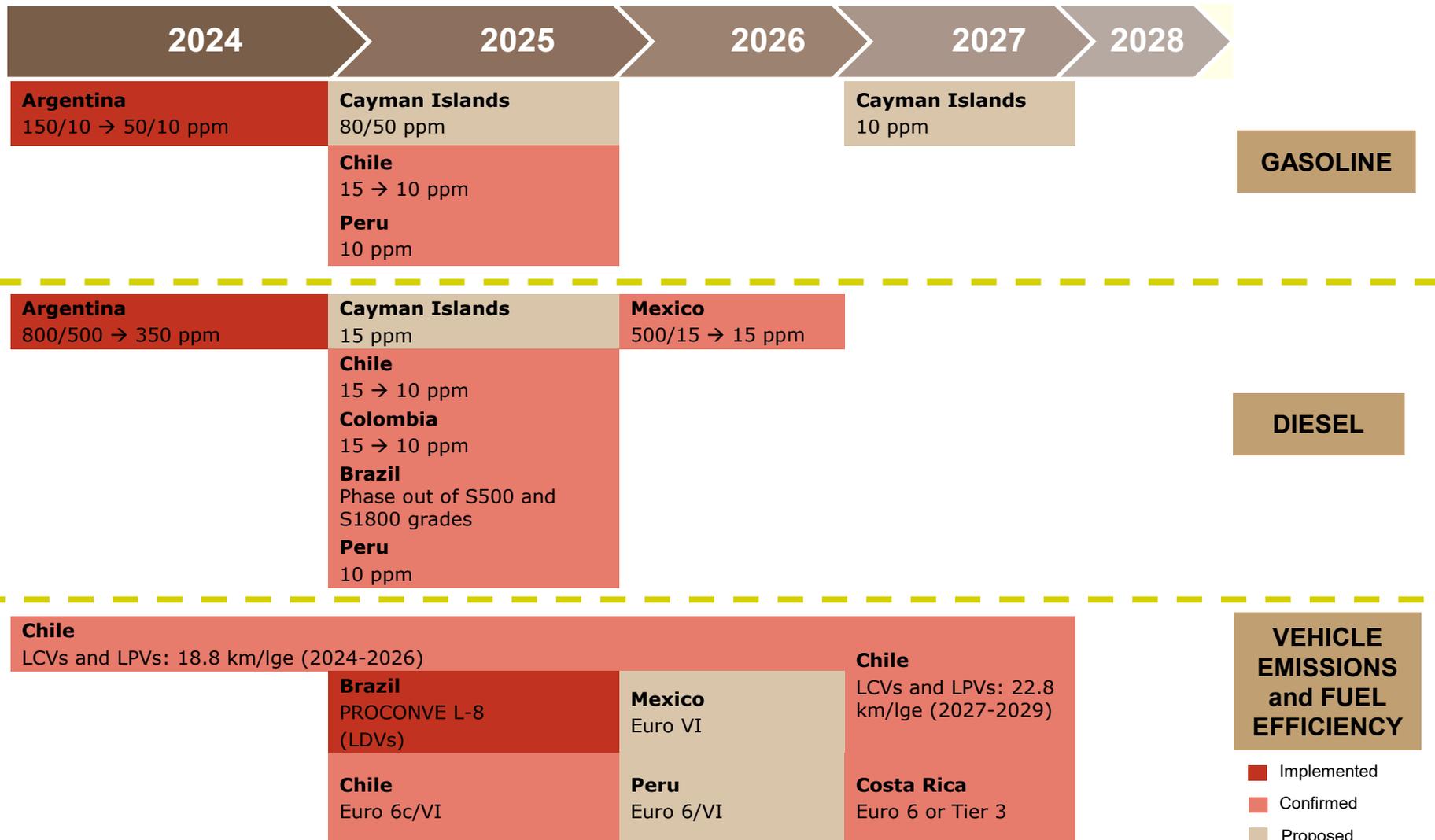
- Implemented
- Confirmed
- Proposed



Central & Latin America

2024 Wrap Up, Outlook for 2025 and Beyond

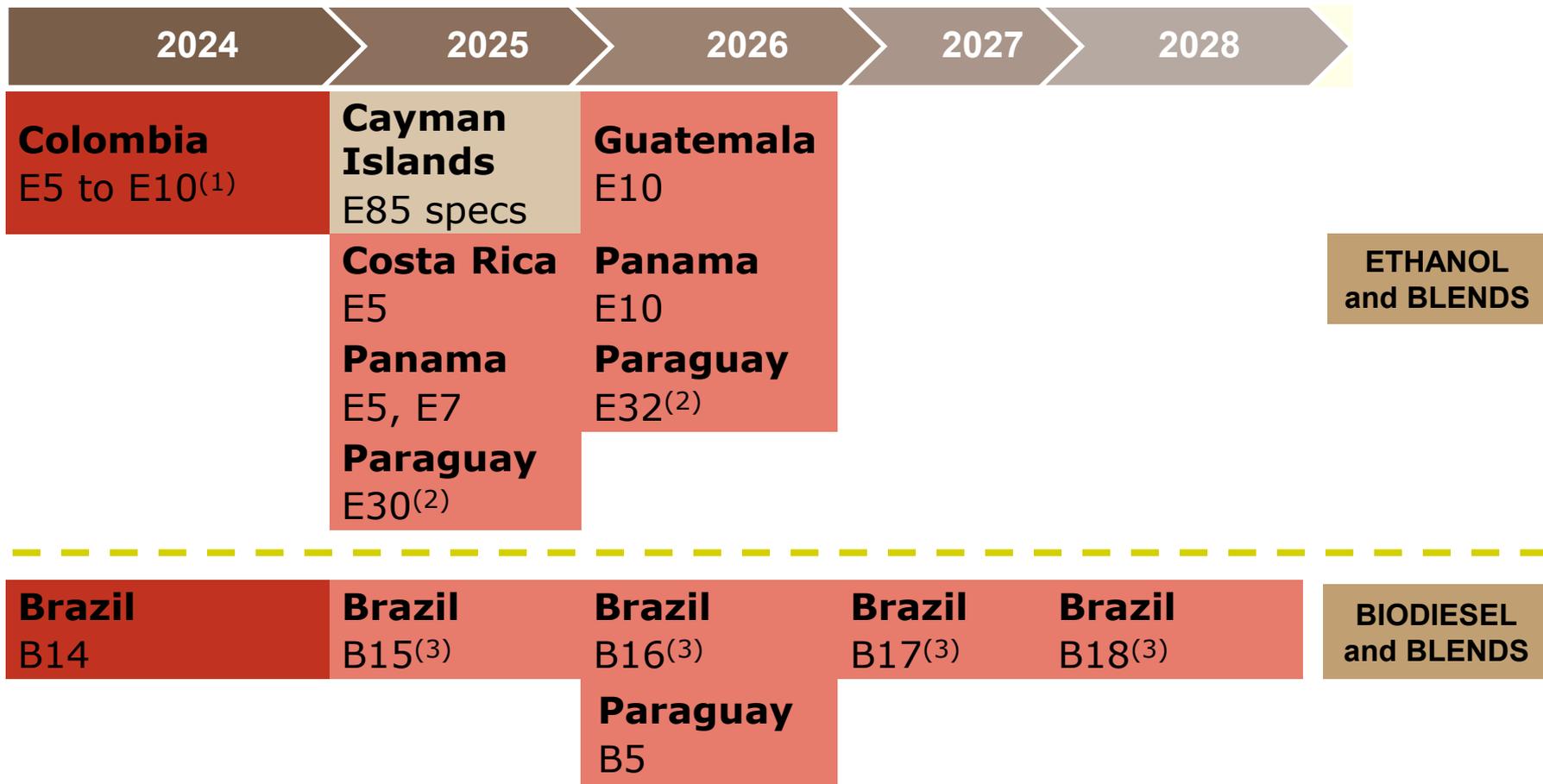
Mexico's nationwide diesel sulfur reduction to 15 ppm delayed multiple times



Notes: LCV – light commercial vehicles, LPV – light passenger vehicles, MC – motorcycles

2024 Wrap Up, Outlook for 2025 and Beyond

Brazil's ethanol mandate increasing to 22-35% by 2030 along with use of HVO



Notes:

- (1) At the national level: 5 vol% from December 2022 to March 2023, 4 vol% for April 2023, 2 vol% for May and June 2023, 4 vol% for July to November 2023, 6 vol% for December 2023, 8 vol% for January 2024 and 10 vol% for February 2024. For Dept. of Archipelago de San Andres, Providencia and Santa Catalina; ethanol blend volumes will go into effect as of March 2023. From September 2023 to February 2024, blend may be adjusted by 1 vol% based on ethanol supply. For all blends, ±0.5 vol% is allowed.
- (2) Applies to all gasoline grades below RON 97.
- (3) Changes to fuel specifications expected for Brazil up until B20 in 2030.

- Implemented
- Confirmed
- Proposed



North America

2024 Wrap Up, Outlook for 2025 and Beyond

Focus on reducing emissions from vehicles and aircraft, boosting efficiency

2024

2025

2026

2027

2028

Federal

- EPA and NHTSA jointly issued **SAFE Vehicles Rule** to implement changes at the federal level to CAFE requirements for PCs and LDTs covering model years (MY) 2021-2026.
- EPA finalized **GHG emission standards** for MY 2023-2026 LDVs and MY 2027-2032 HDVs.
- NHTSA issued final rules on **CAFE standards** for MY 2024-2026 and MY 2027-2032 PCs and LDTs, and MY 2030-2035 heavy-duty pickup trucks and vans (HDPUVs).
- EPA finalized rule to reduce **NOx emissions** from MY 2027 heavy-duty gasoline and diesel engines.
- EPA finalized Multi Pollutant Emissions Standards encompassing regulations on **GHG, NMOG+NOx, and PM emissions** for MY 2027-2032 LDVs and MDVs.

California

- CARB adopted voluntary framework agreement for clean cars to reduce **GHG emissions** from PCs and LDTs through MY 2026 as well as **NOx emissions** reduction rule to be phased in for HDVs covering MY 2024-2027.
- CARB finalized **HD Omnibus Regulations** including amendments to NOx and PM emission standards for MY 2024-2031 HDVs.

California

- CARB proposed amendments to the **Heavy-Duty Engine and Vehicle Omnibus Regulation** to align the emission standards, associated test procedures, and accompanying enforcement provisions for MY 2027 and beyond engines and vehicles with the corresponding provisions in the EPA's NOx Rule.
- CARB proposed amendments to the **Off-Road New Diesel Engine Emission Standards: Tier 5 Criteria Pollutants and CO2 Standards** to further reduce NOx and PM emissions from new, off-road compression-ignition engines. A proposal is planned for 2025 with implementation expected to begin in 2029.

FAA's **Eliminate Aviation Gasoline Lead Emissions** (EAGLE) initiative to transition to lead-free aviation fuels for piston-engine aircraft by the end of 2030

FAA released final rule to reduce **GHG emissions** from new subsonic jets, turboprop and propeller aircraft, and new planes built after Jan. 1, 2028

Notes: PC – passenger cars, LDT – light-duty trucks, LDV – light-duty vehicles, MDV – medium-duty vehicles, HDV – heavy-duty vehicles.

- Implemented
- Confirmed
- Proposed



Summary

Summary of Upcoming Fuel Spec Changes in 2025

Primary focus continues to be sulfur reduction for developing regions

Region	Country / Sub-Region	Sulfur Reduction		Expected Implementation Date	Likelihood of Implementation
		Gasoline	Diesel		
Africa	EAC	10 ppm		2025	Unlikely
	ECOWAS	50 ppm		2025	Unlikely
	SADC	50 ppm		2025	Likely
Asia Pacific	Australia	150/50 → 10 ppm	-	December 2025	Unlikely
	Indonesia	RON 91: 400 → 350 ppm RON 95: 300 → 50 ppm	-	December 2025	Unlikely
	Malaysia	50 → 10 ppm	-	September 2025	Likely
	Pakistan	500 → 10 ppm	-	2025	Unlikely
	Timor Leste	-	500 → 50 ppm	January 2025	Implemented
	Vanuatu	10 ppm		2025	Unlikely
Latin America & Caribbean	Brazil	-	1,800/500/10 → 10 ppm	2025	Likely
	Cayman Islands	80/50 ppm	15 ppm	2025	Likely
	Chile	15 → 10 ppm		March 2025	Likely
	Colombia	-	15 → 10 ppm	December 2025	Likely
	Peru	1,000/50 → 10 ppm	5,000/50 → 10 ppm	October 2025	Likely



Q & A

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The Q&A transcript will be made available 1-2 weeks after this webinar.

Upcoming Scheduled GFS Reports for 2025 – Tentative Schedule

Feedback and suggestions are welcome

Month	Topics
January	Overview and outlook of fuel quality and vehicle emissions in EU Member States
February	Top 100 diesel sulfur ranking
	Overview and outlook of fuel quality and vehicle emissions in the Middle East
March	Overview of fuel marking regulations
April	Overview and outlook of gasoline quality, vehicle emissions and fuel efficiency
	2024 market fuel quality in China
May	Diesel market share by sulfur
June	Top 100 gasoline sulfur ranking
	Overview and outlook of fuel quality and vehicle emissions in Latin America
July	Global FQMS update
August	Expected global fuel spec changes
	Overview and outlook of fuel quality and vehicle emissions in CIS
September	Octane market share
October	Overview and outlook of on-road diesel quality, vehicle emissions and fuel efficiency
	Overview and outlook of fuel quality and vehicle emissions in Asia Pacific
November	Overview and outlook of off-road diesel quality, vehicle emissions and fuel efficiency
December	Overview and outlook of fuel quality and vehicle emissions in Central America & Caribbean

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