



ENGINEERING DEVELOPMENT BOARD

Compliance to WP-29 Regulations by Pakistan
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AGENDA

- Overview of the Automotive Sector
- Governing Regimes (1987–2031)
- Streamlining the Regulatory Framework: Customs Tariffs & SROs
- EV Adoption Roadmap
- National Electric Vehicle (EV) Policy 2025–30: Targets & Cost-Sharing
- Compliance Requirements under WP-29 UN Regulations
- Phased Adoption Plan
- Commercial Import of Used Vehicles & Inspection Protocols
- Challenges, Opportunities and the Way Forward

IMPACT - AUTOMOTIVE



World Standing:

- Ranks 34 in 39 global manufacturing countries
- Only 12 countries in Asia, of which Pakistan is one.



Manufacturing Capacity / Capability:

- Approx 100 manufacturing units (25x4 and 75x2/3 wheelers)
- 400+ Auto Parts Vendors
- Installed Capacity of 600,000+ Units/Annum (4-Ws)



Customer Choices:

- 40+ Models, 100+ Variants
- 13 Brands of Passenger Vehicles (Cars, SUVs, 2-3 Wheelers, HCV, LCVs)



Employment:

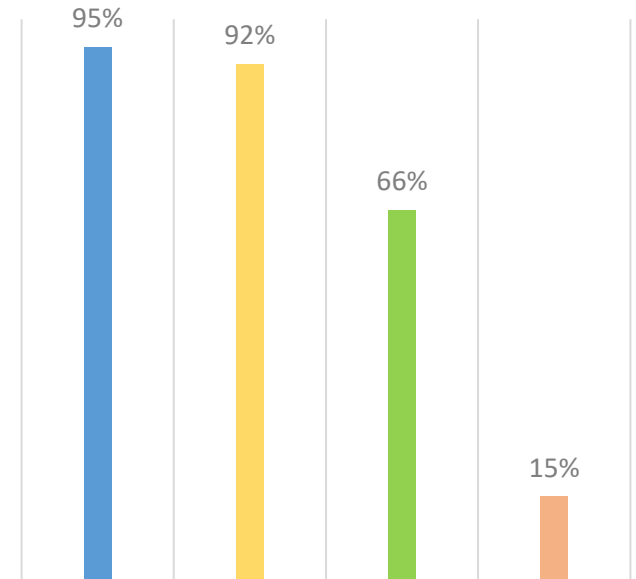
- **200,000** with OEMs
- **500,000** with Vendors



Contribution to Economy:

- 04% contribution to GDP
- 15% of Large Scale Manufacturing Sector
- Local Parts Purchase Volume 250 Billion PKR

LOCALIZATION LEVEL OF PARTS



MOTORCYCLES FACTORS CARS TRUCKS AND BUSES

Source: PAAPAM, ESP, EDB, Industry

Governing Regimes

• Deletion Program or Localization policy	1987-2004
• Tariff Based System (TBS)	2006
• Auto Industry Development Program	2007-2012
• Automotive Development Policy (ADP)	2016-2021
• Auto Industry Development & Export Policy	2021-2026
• Automotive and Part Manufacturing Policy *	2026-2031
• Tractor and Agricultural Implements Policy *	2026- 2031

Pakistan Auto Industry – Regulatory Framework

- Compliance of WP 29 Regulations in Vehicle Manufacturing administered under

SRO 656(I)2006

- Auto Part manufacturers administered under

SRO 655(I)2006

- Localization managed under

SRO 693

Simplification

- **Phase out SROs & Simplify Customs Tariffs. Reduce regulations.**

Electric Vehicles





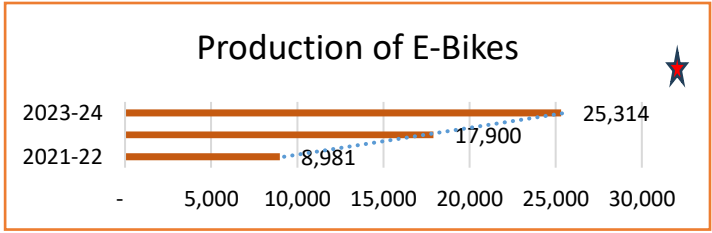
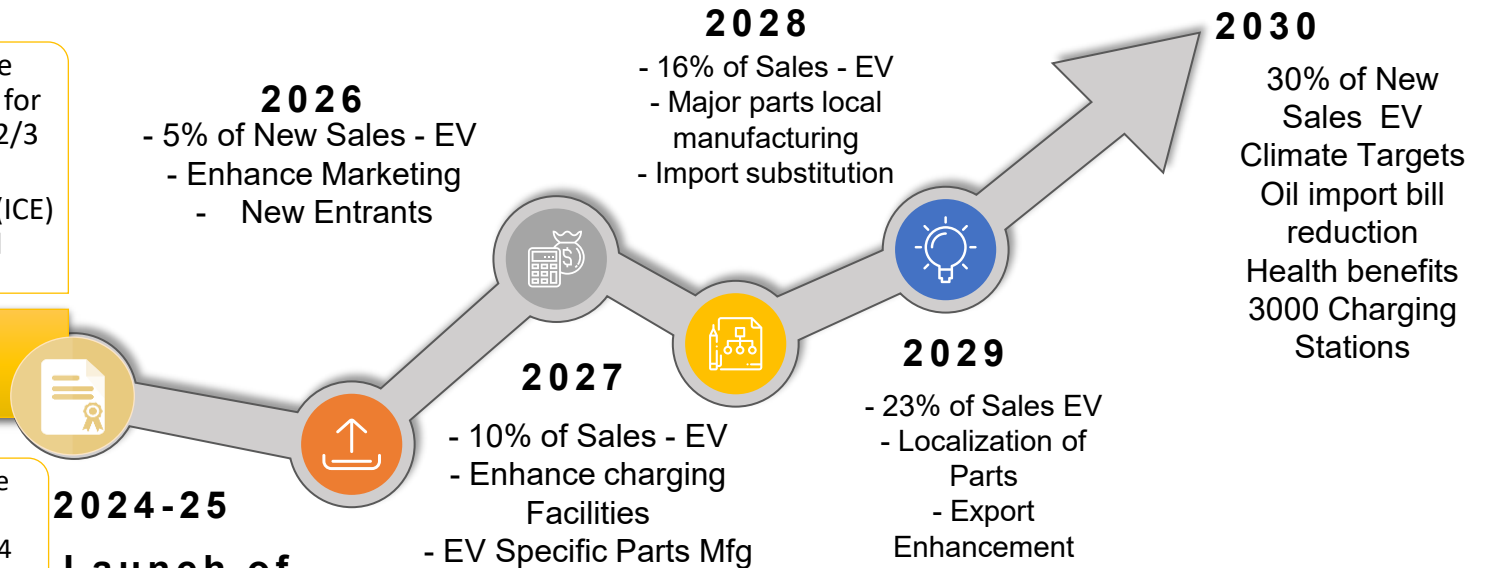
IMPACT & ROAD MAP - EV

- 55 companies have established plants for manufacturing of 2/3 wheelers
- Installed capacity (ICE) per annum 4.0 Mil units

Capacity

- 28 Million Bikes on the road
- 30% of 2/3 wheelers, 4 W, Buses, Trucks, Sales to be electric by 2030
- Avg. Growth Rate in EV adoption is more than 50%

Potential



National target: Number of NEVs to reach 30% of new sales by 2030

	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Two wheelers	116,053	246,728	393,408	557,590	740,898	2,054,676
Three wheelers	3,171	6,644	10,442	14,588	19,106	53,950
Cars etc.	5,947	12,369	19,296	26,758	34,785	99,155
Buses, vans etc.	144	291	443	599	760	2,238
Mini trucks, pick ups etc.	186	382	588	806	1,034	2,996
Total vehicles	125,500	266,415	424,178	600,340	796,582	2,213,015
Charging stations	240	380	550	800	1,030	3,000



32%



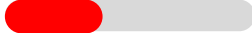
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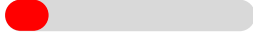
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30%



10%



Adoption of WP-29 Regulations

- ✓ Adopted 17 Core Regulations
- ✓ Targeting 45 Additional Regulations (2027 onwards.)
- ✓ Defining Implementation Mechanism.
- ✓ Executing Phased Adoption of WP-29 additional regulations.
- ✓ Regulating Commercial Used Vehicle Imports. ([Conditions](#))
- ✓ Developing Local Standards as per international regulations/standards.

Selected UNRs: 1958 Agreement

	Description	UN Regulations (UNRs)	Vehicle Category
Active Safety	Brakes	R 13 & R 13H	Passenger Cars and Vans + Commercial Vehicles and Buses
	Steering	R 79	Passenger Cars and Vans + Commercial Vehicles and Buses
	Tyres	R 30	Passenger Cars and Vans
	Lighting	R 48	Passenger Cars and Vans + Commercial Vehicles and Buses
Passive Safety	Safety Belts Anchorages & Safety Belts	R 14 & R16	Passenger Cars and Vans + Commercial Vehicles and Buses
	Seats / Head Restraints	R 17 & R 25	Passenger Cars and Vans
	Collision	R 94, R 95 & R 135	Passenger Cars and Vans
General Safety	Safety Glazing	R 43	Passenger Cars and Vans
	Mirrors & Cameras	R 46	Passenger Cars and Vans + Commercial Vehicles and Buses
	Anti theft	R 18	Passenger Cars and Vans + Commercial Vehicles and Buses

Glance on newly adopted regulations

Visibility, Lighting, and Signaling	R3 Retro-reflecting Devices, R4 Rear Plate Illumination, R19 Front Fog Lamps, R56 Moped Headlamps, R70 Rear Marking Plates, R77 Parking Lamps, R88 2-Wheeler Reflectors, R91 Side-Marker Lamps, R104 Contour Markings, R148 Light-Signaling Devices, R149 Road Illumination Devices.
Structural Integrity and Occupant Protection	R11 Door Latches, R12 Steering Mechanism Impact, R21 Interior Fittings, R22 Protective Helmets, R26 External Projections, R58 Rear Under Run Protection (RUPD), R66 Bus Superstructure Strength, R80 Large Vehicle Seats, R93 Front Under Run Protection (FUPD), R129 Enhanced Child Restraints (i-Size), R137 Frontal Collision Restraints.
Environmental Impact and Dynamic Performance	R9 Noise Emissions, R40 & R47 Gaseous Pollutant Emissions, R51 Sound , R54 Pneumatic Tyres (Commercial), R75 Pneumatic Tyres (Motorcycles), , R142 Installation of Tyres, Emissions, R154 Emissions & Fuel Consumption, R39 Speedometer and Odometer, R78 Braking Systems.
Advanced Propulsion and Specialized Equipment	R100, R136 Electric Power Train Safety, R134, R146 Hydrogen Fuel Cell Vehicles (HFCV), R67, R110, R115 Alternative Fuel Systems (LPG/CNG/LNG), R28 Audible Warning Devices (Horns), R165 Audible Warning Devices (Reversing), R97 Vehicle Alarm Systems (VAS), R36, R52 General Construction (Large Passenger Vehicles), R55 Mechanical Coupling Components.

Challenges

- ✓ Rationalize compliance costs for OEMs and vendors to ensure sustainable adoption of higher safety standards.
- ✓ Strengthen Pre-Shipment Inspection (PSI) and post-shipment compliance regimes under the Engineering Development Board (EDB).
- ✓ Enhance technical capacity for regulators to effectively enforce updated standards.
- ✓ Reliance on overseas testing due to lack of accredited national testing and homologation facilities.

Opportunities

- ✓Promote technology transfer to upgrade local manufacturing capabilities for safety-critical and EV components.
- ✓Formulation of local standards in line with international standards for ICE/NEV vehicles.
- ✓Implement digital tracking systems for imports, inspections, and certifications to ensure transparency and traceability.
- ✓Establishment of national homologation/testing facilities to support industry and reduce costs.

- ✓ Accelerate the adoption of UN WP.29 regulations to align the domestic market with global safety benchmarks.
- ✓ Formulate a public-private roadmap for a standardized, nationwide EV charging infrastructure.
- ✓ Pakistan aims to ensure that locally manufactured parts are mutually recognized in Japan, Thailand, and other key markets (and vice versa), enabling cross-border acceptance and integration into global supply chains.

THANK YOU

Commercial Imports of Used Vehicles.

- ✓ Only companies incorporated under the Companies Act 2017, whose primary business is vehicle import, are eligible for commercial import of used vehicles.
- ✓ Minimum capital requirements will be determined by the Federal Cabinet in line with the proposed scale of operations.
- ✓ All imports must be processed through regular banking channels, with complete documentation, and supported by a credible after-sales network ensuring long-term availability of spare parts to the satisfaction of the Engineering Development Board (EDB).
 - ✓ Pre-shipment inspection (PSI) is mandatory from one of the following:
 - ✓ Japan Auto Appraisal Institute (**JAAI**)
 - ✓ Japan Export Vehicle Inspection Center (**JEVIC**)
 - ✓ Korea Testing Laboratory (**KTL**)
 - ✓ China Automotive Engineering Research Institute (**CAERI**)
 - ✓ or any other EDB-designated organization.
- ✓ PSI certification must confirm: no accident history, genuine odometer, clean interior/exterior, sound engine, compliant emissions and noise levels, intact glass, required airbags, verified manufacturing date, and conformity with relevant standards.
- ✓ EDB may specify additional PSI requirements as circumstances evolve.
- ✓ Each imported used vehicle will undergo a third-party post-shipment inspection at an EDB-approved facility, at the importer's expense.

Visibility, Lighting, and Signaling

Reg #.	Topic/System	Core Requirement (What it Governs)	Category Focus	Key Impact Area
R3	Retro-reflecting Devices	Ensures passive visibility of vehicles (reflectors).	All Power-Driven Vehicles & Trailers	Visibility, Passive Safety
R4	Rear Registration Plate Illumination	Specifies minimum lighting performance for the rear license plate.	All Power-Driven Vehicles & Trailers	Visibility, Legal Compliance
R19	Front Fog Lamps	Specifies light distribution, color, and photometric requirements for front fog lamps.	Power-Driven Vehicles	Active Safety, Visibility
R56	Headlamps for Mopeds	Requirements for road illumination devices on light two-wheelers.	Mopeds, L1 vehicles	Active Safety, Visibility
R70	Rear Marking Plates	Standardizes reflective plates for heavy and long vehicles to enhance visibility.	Heavy and Long Vehicles	Visibility, Accident Prevention
R77	Parking Lamps	Requirements for lamps used to indicate the presence of a stationary vehicle.	Power-Driven Vehicles	Visibility, Parking Safety
R88	Retro-reflecting Devices	Requirements specific to retro-reflectors for two-wheeled vehicles.	Two-Wheeled Vehicles	Visibility, Passive Safety
R91	Side-Marker Lamps	Specifies requirements for lamps used to indicate the overall length of a vehicle.	Motor Vehicles & Trailers	Visibility, Active Safety
R104	Retro-reflective Markings	Specifies high-visibility tapes for the full contour of large vehicles.	Categories M, N, O	Visibility, Night Safety
R148	Light-Signaling Devices (Lamps)	General requirements for all light-signaling components (e.g., turn signals, stop lamps).	Power-Driven Vehicles & Trailers	Active Safety, Communication
R149	Road Illumination Devices (Lamps)	General requirements for road-facing illumination systems (e.g., headlamps).	Power-Driven Vehicles	Active Safety, Night Driving

Structural Integrity and Occupant Protection

Reg #.	Topic/System	Core Requirement (What it Governs)	Category Focus	Key Impact Area
R11	Door Latches & Retention	Mandates strength of doors to prevent opening during a crash.	Vehicles (Primarily Passenger)	Crash Safety, Occupant Containment
R12	Steering Mechanism Impact Protection	Minimizes driver injury by ensuring the steering column deforms safely upon impact.	Passenger Cars	Crash Safety, Driver Protection
R21	Interior Fittings	Reduces injury risk from impact with the vehicle's interior (e.g., dashboard).	Motor Vehicles	Crash Safety, Occupant Protection
R26	External Projections	Controls the shape of exterior parts to minimize injury to pedestrians.	Motor Vehicles	Pedestrian Safety, External Hazard
R58	Rear Under Run Protection (RUPD)	Requires protective barriers at the rear of heavy vehicles.	Commercial Vehicles & Trailers	Crash Safety, Under-Run Prevention
R66	Superstructure Strength	Ensures the resistance of a bus/coach body to collapse in a rollover accident.	Large Passenger Vehicles (M2, M3)	Structural Safety, Rollover Protection
R80	Seats of Large Passenger Vehicles	Specifies strength and anchorage requirements for seats in buses/coaches.	Large Passenger Vehicles	Occupant Safety, Structural Safety
R93	Front Under Run Protection (FUPD)	Requires protective barriers at the front of heavy goods vehicles.	Commercial Vehicles	Crash Safety, Under-Run Prevention
R22	Protective Helmets	Approval requirements for protective helmets and visors.	Motorcycle/Moped Occupants	Occupant Safety (Equipment)
R129	Enhanced Child Restraint Systems	Defines safety, design, and testing standards for child car seats (i-Size).	Child Restraint Systems	Occupant Safety, Child Protection
R137	Frontal Collision (Restraint System)	Approval of passenger cars with focus on the restraint system's performance in a frontal crash.	Passenger Cars	Crash Safety, Occupant Protection

Environmental Impact and Dynamic Performance

Reg #	Topic/System	Core Requirement (What it Governs)	Category Focus	Key Impact Area
R9	Noise Emissions (L2, L4, L5)	Limits the maximum permissible noise level.	Motor Tricycles, Motor Cycles (L Category)	Environmental, Noise Pollution
R40 & R47	Gaseous Pollutant Emissions	Sets standards for exhaust emissions (unburnt hydrocarbons, CO, etc.).	Motorcycles & Mopeds (Positive-Ignition Engine)	Environmental, Air Quality
R51	Sound Emissions (4+ wheels)	Limits the maximum permissible sound emissions.	Motor Vehicles (at least 4 wheels)	Environmental, Noise Pollution
R154	Emissions & Fuel Consumption	Comprehensive standard for measuring criteria emissions, CO_2 , fuel/energy consumption, and electric range.	Light Duty Passenger & Commercial Vehicles	Environmental, Climate Change
R39	Speedometer and Odometer	Ensures accuracy of speed and distance measuring equipment.	Motor Vehicles	Compliance, Road Management
R54	Pneumatic Tyres	Establishes requirements for tyre design, construction, and performance.	Commercial Vehicles & Trailers	Active Safety, Durability
R75	Pneumatic Tyres	Establishes requirements for tyre design, construction, and performance.	Motorcycles & Mopeds	Active Safety, Durability
R142	Installation of Tyres	Ensures correct and safe installation of motor vehicle tyres.	Motor Vehicles	Active Safety, Compliance
R78	Braking	Specifies performance, design, and testing requirements for braking systems.	Categories L1-L5 (Motorcycles, Mopeds)	Active Safety, Accident Prevention

Advanced Propulsion and Specialized Equipment

Reg #.	Topic/System	Core Requirement	Category Focus	Key Impact Area
R100 & R136	Electric Power Train Safety	Specific safety requirements for electric vehicles, focusing on shock protection and thermal events.	Electric Vehicles (M/N and L Category)	Safety, Electrification
R134 & R146	Hydrogen Fuel Cell Vehicles (HFCV)	Safety-related performance requirements for high-pressure hydrogen systems and crash safety.	HFCVs (M/N and L Category)	Safety, Alternative Fuels
R67, R110, R115	Alternative Fuel Systems (LPG/CNG/LNG)	Safety and installation requirements for components and systems using alternative fuels.	Vehicles Using Alternative Fuels	Safety, Alternative Fuels
R36 & R52	General Construction	Governs the general structural and design requirements for passenger transport vehicles.	Large Passenger Vehicles (M2, M3)	Structural Safety, Design
R28	Audible Warning Devices (Horns)	Approval requirements for horns and their acoustic signals.	Motor Vehicles	Active Safety, Warning System
R165	Audible Warning Devices (Reversing)	Governs devices that alert people when a motor vehicle is reversing.	Motor Vehicles	Safety, Pedestrian Alert
R55	Mechanical Coupling Components	Requirements for tow bars, fifth wheels, and other coupling devices.	Vehicle Combinations	Safety, Towing Integrity
R97	Vehicle Alarm Systems (VAS)	Requirements for the functionality and installation of vehicle anti-theft systems.	Motor Vehicles	Security, Anti-Theft