

ZINC & LEAD SCENARIO IN INDIA - AN UPDATE



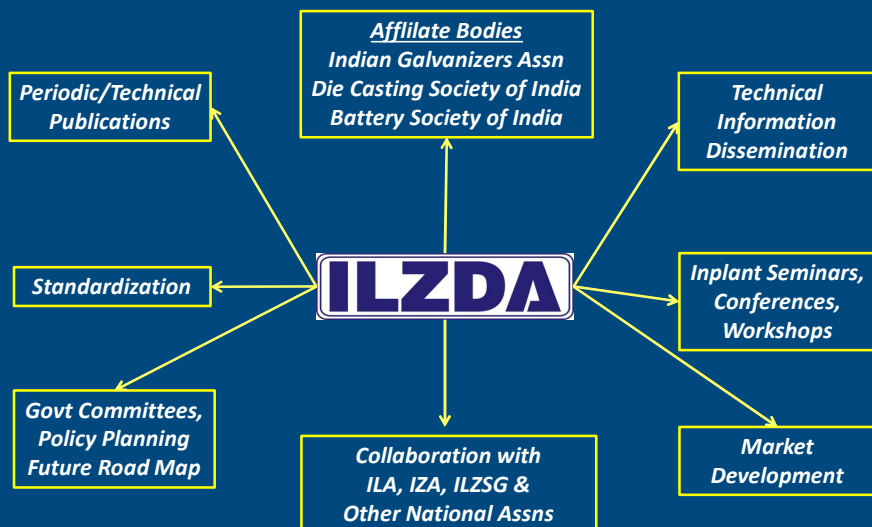
**ILZSG Meeting
Lisbon
9 Oct 2025**



**L Pugazhenthly, Executive Director
India Lead Zinc Development Association &
Past President, The Indian Institute of Metals**

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INDIA LEAD ZINC DEVELOPMENT ASSOCIATION (64 years old)



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GALVANIZING
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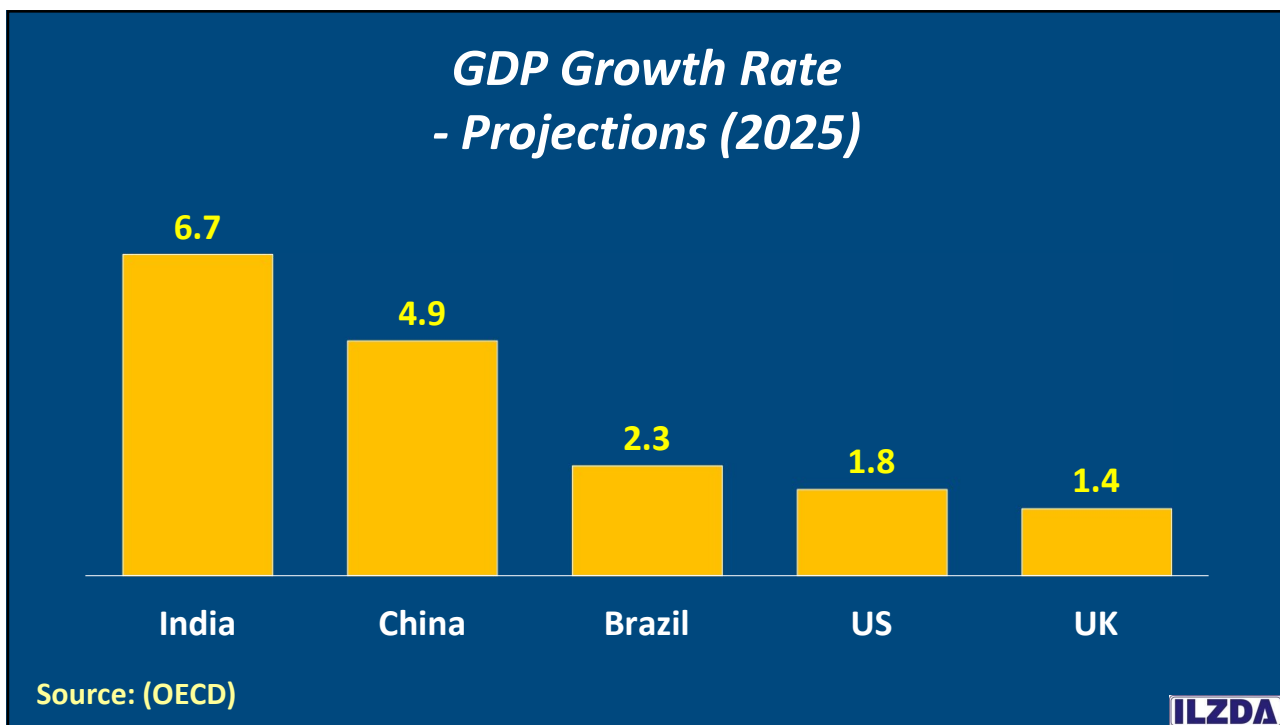


LEAD ZINC UPDATE
ilzda e-newsletter
August - September 2025
Global Lead & Zinc Statistics
No. 16

Qly Tech Journals

**Bi-monthly
e newsletter**

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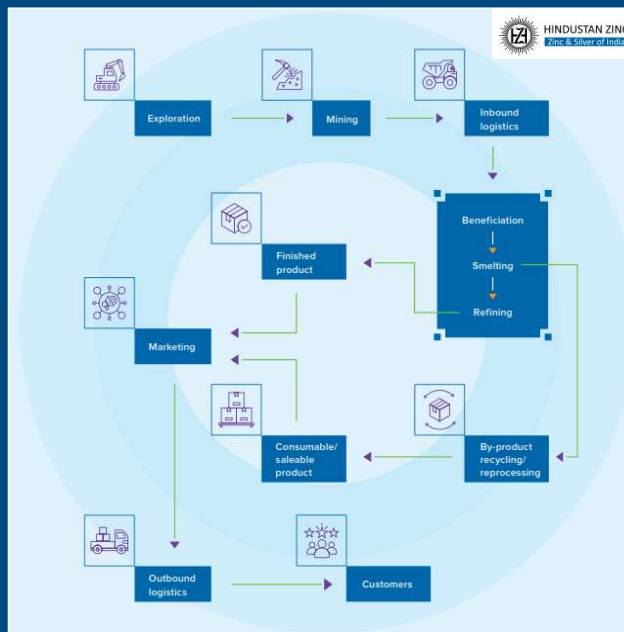
ZINC STORY



Hindustan Zinc Ltd (HZL)

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HZL - An Overview



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Most Modern Smelter

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Hindustan Zinc Ltd

- *Originally “Metal Corpn of India”*
- *Became a govt company in 1966*
- *Disinvested in 2003, govt holding 28%*
- *An unit of Vedanta Resources
located in Udaipur, State of Rajasthan*
- *Both Hydro & Pyro Metallurgy*
- *Refined Metal Capacity: 1.20 Million tpa*
- *Captive Power Plant: 625 MW*
- *Solar Power: 40 MW*
- *Wind Power: 48 MW*

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Hindustan Zinc Ltd

- *One of the largest integrated smelters*
- *Continuous expansion of capacities, in power, mining & smelting*
- *Planning to expand to 2.0 M tonnes/year*
- *A low cost producer*
- *By product recovery, Silver particularly*
- *More emphasis on Renewable energy*
- *Mostly meet's India's domestic demand*
- *Aiming at Critical Minerals now*

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HZL

Zinc Capacity: 913000 tpa
Primary Zinc Production

| <u>Year*</u> | <u>Production</u> |
|--------------|-------------------|
| 2022-2023 | 821000 |
| 2023-2024 | 817000 |
| 2024-2025 | 827000 |

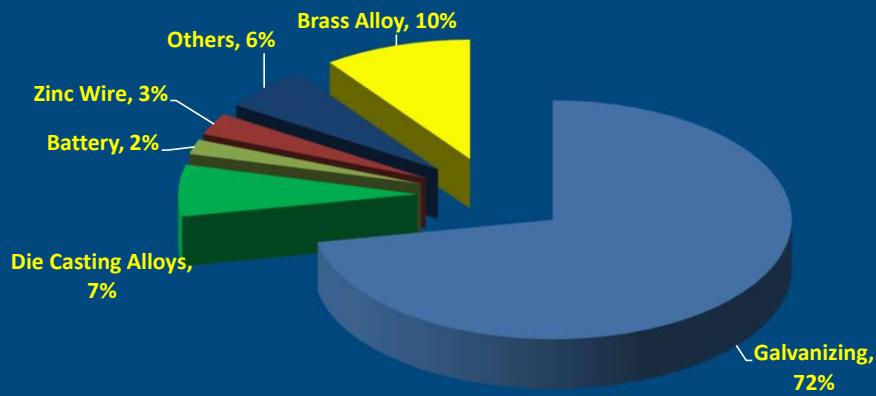


(Source: HZL)

(*FY: 1st April to 31st March)

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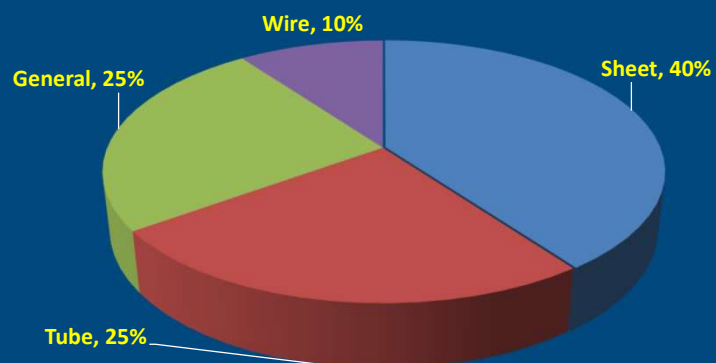
Zinc Usage in India



(Source: HZL)

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Galvanizing Sectoral Usage



Huge Opportunity for General Galvanizing

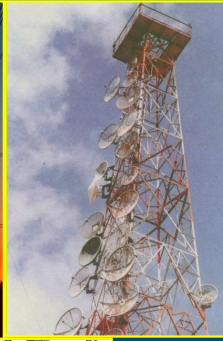
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Traditional Applications - General Galvanizing

*Power
Transmission
Line Towers*



*Telecom
Towers*



*Railway
Electrification
Towers*



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General Galvanizing - Recent Applications



Highway Guard Rails

Solar Energy



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Potential Markets - General Galvanizing



Railings



Traffic Signals



Platform Structures



Automobiles

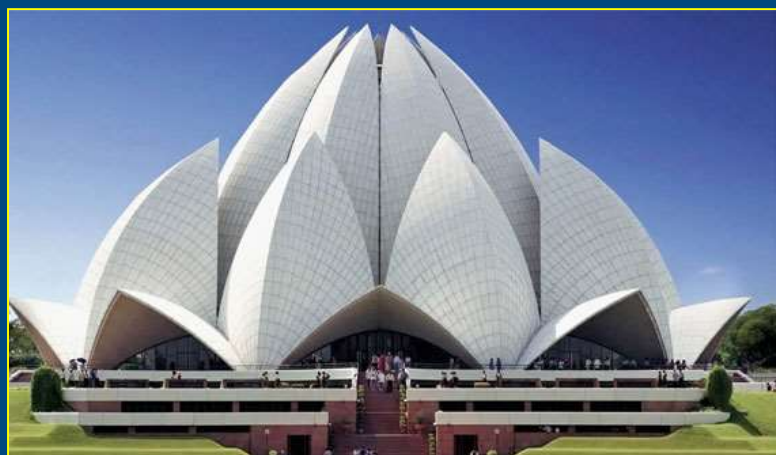


Galvanized Rebars

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Galvanized Rebars in RCC

FIRST APPLICATION
Lotus Temple, Delhi 1985-ILZDA Initiative



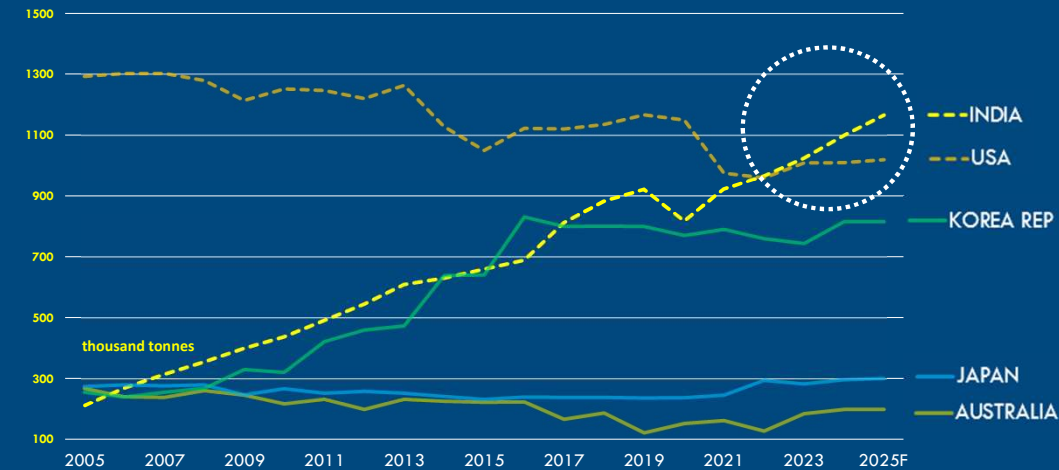
About 400 tons, Galvanized Rebars

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LEAD STORY

India's Lead Metal Output

Remarkable growth in India over the last 2 decades



(Source: International Lead & Zinc Study Group)

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INDIAN LEAD INDUSTRY-AN OVERVIEW

(Million tonnes)

1. Secondary Lead Production : 0.80
2. Primary Lead Production : 0.25
3. Imports : 0.15
4. Total Lead Consumption : 1.20
5. Authorized Recycling Units : 675

Estimated Lead Consumption by 2028 : 1.50

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HZL

Primary Lead

Production (tonnes)

| <u>Year</u> | <u>Production</u> |
|-------------|-------------------|
| 2022-2023 | 211000 |
| 2023-2024 | 216000 |
| 2024-2025 | 225000 |

Silver Capacity : 800 tpa

Silver Production (tonnes)

| <u>Year</u> | <u>Production</u> |
|-------------|-------------------|
| 2022-2023 | 714 |
| 2023-2024 | 746 |
| 2024-2025 | 750 |

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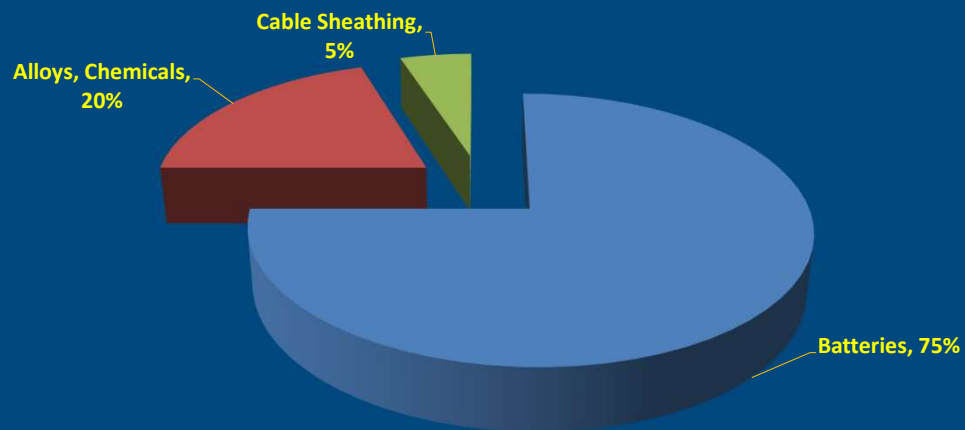
LEAD BATTERIES

- **Safety**
- **Affordable**
- **Reliable Energy Source**
- **Most Recycled Material (99%)**
- **Cheaper Input for Reuse**
- **Continuous Technology Upgradation**
- **Well Established, Steady Growth**
- **CAGR, 2024-2030 : 6%**



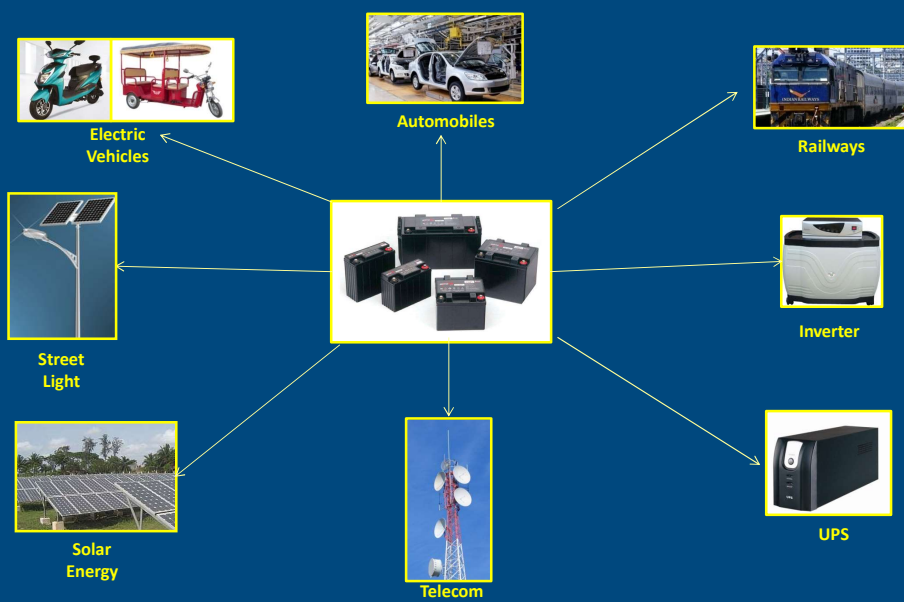
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LEAD USAGE IN INDIA



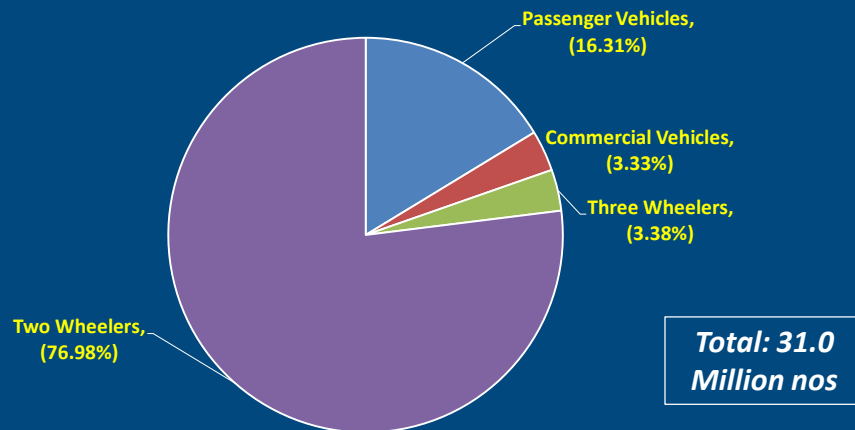
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Lead Battery – In Our Daily Life



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Indian Automobile Production Trends (2024-25)



(Source: SIAM)

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Renewable Energy Mission

Renewable Energy Targets by 2022: 175 GW



100,000 MW
OF SOLAR



60,000 MW
OF WIND



5,000 MW
OF SMALL HYDRO



10,000 MW
OF BIO ENERGY

By 2030: 500 GW

STATUS

Solar Energy : 123 GW

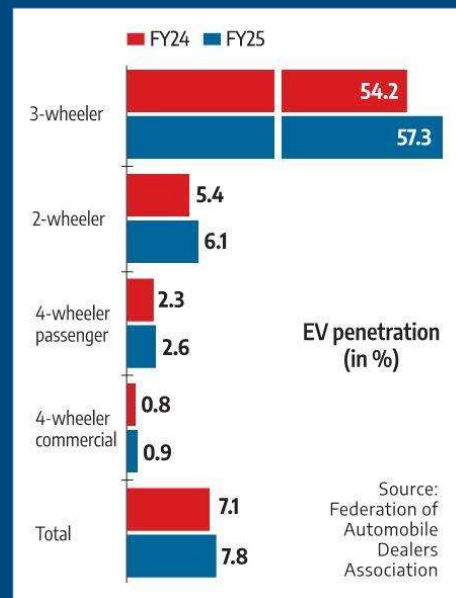
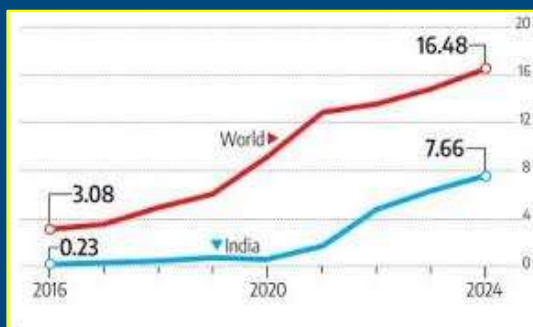
Wind Energy : 69 GW

Total : 192 GW

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ELECTRIC MOBILITY MISSION

EV Adoption (%)



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BATTERY WASTE MANAGEMENT RULES - 2022

- ❖ **Notified in 2022, superceding BMHR 2001**
- ❖ **Waste Battery:**
 - **Used EOL batteries**
 - **Pre-consumer, off spec batteries**
 - **Expired Batteries**
 - **Discarded batteries**
- ❖ **Applies to:**

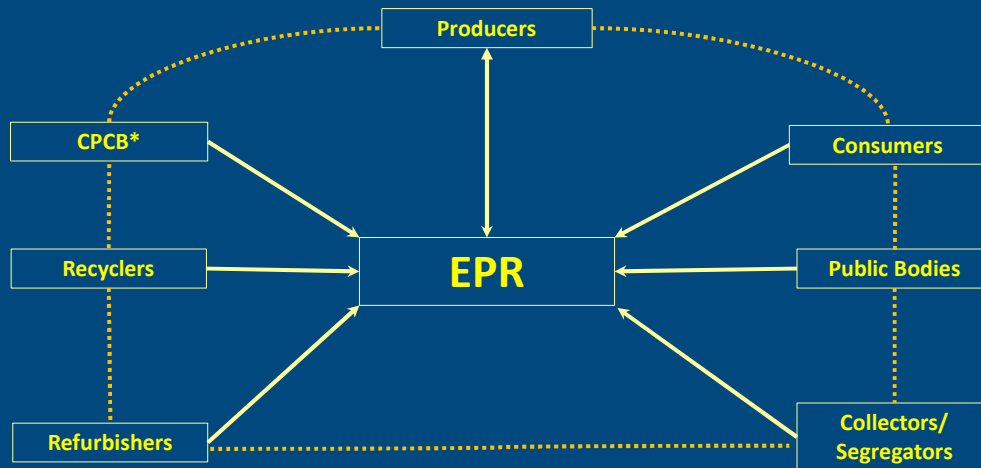
Every producer, dealer, consumer & entities involved in collection, segregation, transport & recycling
- ❖ **Exempts:**

Batteries used in defence & space equipments

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BWMR-2022

EPR & Multi Stakeholder Responsibilities



*CPCB – Central Pollution Control Board

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LEADCONCLAVE

**ILZDA International Conference on
LEAD & LEAD BATTERIES
– UNLOCKING THEIR TRUE POTENTIAL
1 & 2 December 2025, IIC, New Delhi**



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