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FORTNIGHTLY ISSUE
16-31 May 2026
(Vol.41, No.10 Published on 14.05.2026)

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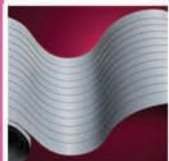


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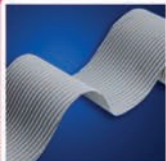


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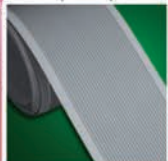


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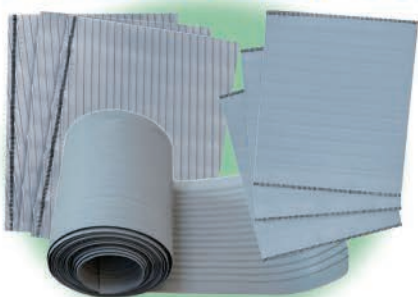


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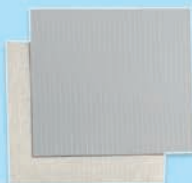
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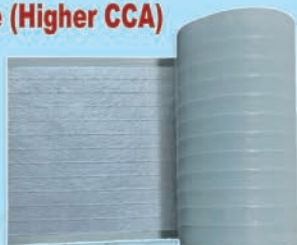
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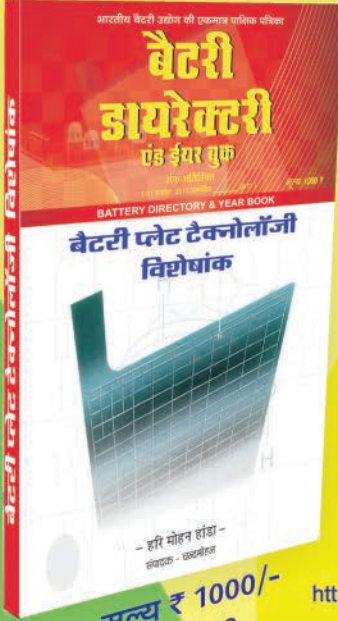
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Knowledge without devotion to God produces hatred.

—Bhagwan Sh. Sathya Sai Baba



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FISSBA Moves Delhi High Court Against EPR Price Control Mechanism

Seeks Relief for MSMEs



Aditya Mahawar

EPR Consultant, Mob. 9999975549

The Federation of Indian Small Scale Battery Associations (FISSBA) has filed a writ petition in April 2026 before the Delhi High Court challenging recent amendments to the Battery Waste management Rules, 2022 and E-Waste Management Rules, 2022, to protect the interests of thousands of micro and small battery businesses across India. Through this petition, FISSBA has raised serious concerns over the introduction of a price control mechanism for Extended Producer Responsibility (EPR) Certificates.

What is the Main Dispute?

In 2022, the Ministry of Environment, Forest and Climate Control (MoEFCC) introduced the Battery Waste Management Rules and E-Waste Management Rules to strengthen recycling through the EPR framework wherein producers are required to ensure that a certain amount of battery and electronic waste is collected and recycled. To meet these recycling targets, the producers

should acquire EPR certificates from the authorized recyclers, and they can do so by purchasing these certificates from recyclers, wherein the price of these certificates is decided by a market-driven mechanism. The members of FISSBA welcomed these rules and fully complied with them.

However, in 2024, MoEFCC amended the Battery Waste Management Rules and E-Waste Management Rules, giving the Central Pollution Control Board (CPCB) the power to fix the minimum and maximum prices for EPR Certificates by linking these prices to Environmental Compensation (EC) which is a penalty imposed for non-compliance of these rules. This is where the dispute began, as a penalty designed to punish non-compliant producers was now being used to set prices for compliant ones.

Why are Small Businesses Worried?

FISSBA has highlighted that the amended EPR framework has created significant challenges for small-scale industries:

- ◆ **Incorrect Assumptions:** The CPCB has fixed the EC for Lead at ₹18/kg which consists ₹3/kg as collection and transportation cost and a "processing cost" of ₹15/kg. FISSBA points out that this processing cost is already included in the market price of recycled lead that producers pay to recyclers. So, producers are

being asked to pay for the same cost twice. Also, independent study data shows that processing cost for Lead varies between ₹5 - ₹7/kg, far less than the ₹15/kg the CPCB has assumed. Similarly, CPCB has assumed Home UPS and inverters contain 11% copper, whereas laboratory tests show the actual content is only 1.5% to 4.5% therefore the EC guidelines are based on facts that are clearly and significantly incorrect.

- ◆ Disproportionate impact on MSMEs: Under Battery waste management rules, not having a separate compliance category for SMEs is hostile discrimination, especially when similar regimes like the Plastic Waste Management Rules have clearly provided for such differentiation. SMEs are under extreme financial pressure, operational difficulties and risk of non-compliance due to inflexible pricing and procedural bottlenecks.
- ◆ Retrospective Application: The new rules are being applied "retrospectively" from the year 2017-18. This means businesses could be fined for things that happened years before these rules even existed.
- ◆ Registration Delays: By law, the CPCB must complete an EPR registration within two weeks. However, many small units find their applications stuck for months, making it impossible for them to comply with the law.
- ◆ Ignoring Off-spec batteries & Re-melted Lead (RML): Manufacturers always produce some faulty or rejected batteries during production which are sent for recycling. But

the current rules do not give EPR credit for these, even though they are genuine waste. This hurts small manufacturers more than big ones, who have lower rejection rates. Also, small recyclers depend heavily on Re-melted Lead (RML), but the current rules do not provide them proper credit for recycling this material.

Impact on the Industry and Consumers

- ◆ FISSBA has highlighted that if these rules remain unchanged, SME battery makers may face "existential threats" as they operate on thin margins.
- ◆ High compliance costs will likely lead to higher prices for everyday items like batteries, UPS and inverters for common Indian consumers.

FISSBA Requested

FISSBA has requested the Hon'ble Delhi High Court to:

- ◆ Quash the provisions enabling price control of EPR certificates
- ◆ Declare the linkage of EPR pricing with Environmental Compensation as unlawful
- ◆ Revise the Environmental Compensation guidelines based on actual, verified data.
- ◆ Recognise off-spec batteries and Re-melted Lead as valid sources for EPR credit.
- ◆ Ensure prospective application of rules (not retrospective)
- ◆ Introduce MSME-specific relaxations and compliance mechanisms



Prime Minister Modi's Appeal

For a period of one year—due to the Global Crisis:



What Not to Do (Don'ts):

- ◆ Avoid purchasing gold jewelry (Gold imports consume 9% of the country's dollar reserves).
- ◆ Reduce the consumption of diesel and petrol.
- ◆ Avoid foreign travel (Due to its impact on dollar reserves).
- ◆ Do not waste fertilizers.
- ◆ Use less cooking oil.

What to Do (Do's):

- ◆ Work from Home.
- ◆ Conduct online meetings.
- ◆ Opt for carpooling, the Metro, or electric vehicles when traveling.

- ➔
- ◆ Improve transparency and efficiency in registration and compliance processes
 - ◆ Faster Registration: Ordering the CPCB to stick to the two-week deadline for registrations.

By taking this matter to the Delhi High Court, FISSBA aims to ensure that environmental protection goes hand-in-hand with the survival of India's vital

small-scale battery sector.

This writ petition was filed in the Delhi High Court on April 15 by Advocates Mr. Dinesh Parashar and Mr. Sarvendra M. Tripathi on behalf of the Federation. Notices have been issued. The hearing is scheduled for July 3, 2026. The Key Highlights of the petition has been published on page numbers 19-28.

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27th Foundation Day Celebration of the Rajasthan Storage Battery Trade Association Concludes

The Rajasthan Storage Battery Trade Association celebrated its 27th Foundation Day on May 8th at the Banipark Charitable Institute, Banipark, Jaipur. On this occasion, the Association also organized a massive voluntary blood donation camp in collaboration with the Thalassemia Children Society.

Present at the ceremony were founding members Sh. Satyaprakash Agarwal and Sh. Satish Chand Heda; Chief Advisor Sh. Poonamchand Kachhwah; Sh. Kanaram Veer Gurjar; Senior Vice President Mr. Rafiq Mansuri; Vice President Sh. Babulal Yadav (Mama); Joint Secretary Sh. Rakesh Kumar Malani; Treasurer Sh. Surendra Kumar Sharma; Chairman of the Organizing Committee Sh. Ramesh Kumar Prajapat; and

Executive Members Sh. Prahlad Rai Sharma, Sh. Bhagirath Singh, Sh. Ravi Kumar Jalan, Sh. Umrao Singh, Sh. Dinesh Kumar Saini, Sh. Manish Gaur, Sh. Durga Lal Kumawat and Sh. Devi Lal Samota.

Sh. Satish Sharma, President of the Association, boosted the morale of the blood donors and encouraged those present at the ceremony to donate blood. Sh. Lokesh Tikkiwal, General Secretary of the Association, welcomed traders hailing from every district and tehsil of Rajasthan to the Foundation Day celebrations and mega blood donation camp. Hundreds of business professionals were in attendance, including Sh. Yadram Patwa from Bharatpur Nagar, Sh. Amit Oberoi from Dholpur, Sh. Manish Saini from Jhunjhunu, and Sh. Moolchand



Sh. Lokesh Tikkiwal, Sh. Saurabh Rawat, Sh. Satish Sharma, Sh. Poonamchand Kachhwah, Sh. Yadram Patwa, and Sh. Amit Oberoi.



Inauguration of the Blood Donation Camp. Sh. Surendra Sharma (Treasurer) donating blood.



Sh. Kanaram Gurjar donating blood.

Sh. Neeraj Sharma donating blood.

Saini from Chirawa. From Didwana Kuchaman, both Sh. Prahlad Swami and his son, Sh. Arjun Rakawat, donated blood.

Chairman Sh. Satish Sharma appointed Sh. Yadram Patwa as the Coordinator for the Bharatpur Division and Sh. Prahlad Swami as the

Coordinator for the Didwana-Kuchaman District. The organization's founding members, Sh. Satish Heda and Sh. Satyaprakash Agarwal, highlighted the achievements of the 27-year tenure. The program was successfully anchored by Sh. Poonam Chand Kachhwah. □

If everything is free, why will people work?



Sushil Kumar Singhal

Singhla Technoplast LLP, Delhi

The government should establish research centers for the development of lead-acid batteries so that people do not have to import them from abroad, and domestically manufactured batteries can compete effectively with imported ones; however, the government currently pays little attention to this matter. Mukesh Ambani is introducing sodium batteries to the country. Once these enter the market, they will make a significant impact. While lead-acid batteries may not disappear entirely, their usage will certainly decline.

In today's times, the combined cost of electricity and labor alone amounts to 16 to 17 rupees per kilogram. With the produce selling at just 20 rupees per kilogram, tell me—what profit is left to be made? Furthermore, a portion of the earnings often gets tied up in credit. Nowadays, if you supply goods to someone on credit, they are simply unwilling to pay up; this has become a massive problem. You end up constantly chasing after them, and if you dare to speak up firmly, you can kiss your money goodbye. Even large-scale firms have become dishonest in their dealings; they have gone so far as to stop answering their phones. It is Sh. Modi's earnest desire that manufacturing take place within the country and that the reputation of 'Make in India' be elevated. To ensure the success of the 'Make in India'

initiative, the government has imposed significantly higher duties on numerous items—effectively making their importation impossible—and has outright banned many others. However, labor constitutes a major challenge for manufacturing operations here. For one, there is a scarcity of labor; and secondly, government departments create unnecessary hurdles. There is absolutely no support forthcoming from the administrative departments. They treat even those who conduct their business entirely above board as if they were criminals. The system here is fundamentally flawed, and the local government offers no support whatsoever.

Don't Want to Pay Taxes!

In many countries, the government supports businesses. They understand that business serves as the backbone of the nation. In our own country, however, this reality is not appreciated. The wealthy understand it, but those at the lower levels do not. Furthermore, a section of our public is also failing to offer support. The public, too, questions why they should pay taxes; they, too, have no desire to pay them.

Used Goods from China

The lithium-based goods currently arriving from China consist primarily of recycled materials. While lithium batteries are advertised to last for 10 years, Chinese manufacturers export them out of the country after just five years. This export strategy offers China several advantages: the batteries are utilized domestically while they are at full charge capacity; subsequently, once their lifespan has depleted to 50% and they are nearing the end-of-life stage, exporting them allows China to avoid the burden of battery scrap disposal while simultaneously generating

revenue. These cells arriving from China come with absolutely no warranty.

We are Far Behind China

I have recently visited China and observed that, compared to China, our country possesses not even one percent of the industrial advancement seen there. We lag far behind them. If you wish to establish an industry in China, you simply need to submit your project proposal to the government; if the project is selected, the ownership structure will be split 51% for the government and 49% for you. In exchange for this equity stake, the government provides you with land as well as various other facilities.

There, industries are organized by specific zones. In a particular area, you might find as many as 50 factories of the exact same type. For instance, if bottle caps are being manufactured at a certain location, that facility will produce nothing but caps; other bottle components will be produced by someone else. These manufacturers supply their finished goods directly to one another's factories, a practice that helps reduce their production costs. The government also encourages these entrepreneurs to export their goods—often at competitive rates—thereby bringing foreign currency into the country. To support this endeavor, the government provides incentives to these entrepreneurs. Moreover, these entrepreneurs receive their incentives promptly and without hassle, typically by the end of the month. In our own country, however, securing an incentive can sometimes take as long as a year—and quite often, the incentive is never received at all.

China and India are roughly equal in terms of population. However, in the industrial sector, China is far ahead of India. The sole reason for this is that the Chinese government supports entrepreneurs

and places a strong emphasis on exports. Through these exports, China is accumulating dollars.

In our country, the battery industry is increasingly falling into the hands of large-scale entrepreneurs. This should not be the case. Our government operates on a model based on the UK and the USA. The populations in those countries are significantly smaller than ours. Consequently, their systems will invariably fail here, as our country has a massive population. Our nation should instead focus its attention on China's policies. We ought to prioritize industrial development and the expansion of exports.

At present, Modi Ji is supporting large-scale entrepreneurs, but he is paying no attention to small-scale entrepreneurs. The reason for this is likely that the government can easily collect taxes from large-scale entrepreneurs. This is precisely why large-scale entrepreneurs in the country are flourishing.

If everything is free, no one will work

Currently, several state governments have made electricity and rations free of cost. Now, tell me this: when everything is available for free, why would anyone bother to work? Consequently, a shortage of workers in factories has become a common occurrence. Political parties are introducing such schemes solely to retain their hold on power. However, this is causing immense harm to the nation. These individuals, driven by the desire to make money, deliberately tear up perfectly good roads only to rebuild them again.

Given the extent to which corruption has permeated our country, it often feels as though the nation is functioning solely by the grace of some divine power. □

Federation Files Writ Petition in Delhi High Court

Notice Issued; Hearing Scheduled for July 3, 2026

Key Highlights of the Filed Petition:

The Federation of Small-Scale Battery Industries Association (FISSBA), representing micro and small enterprises across India engaged in the manufacture, recycling, and re-processing of lead-acid batteries, stepped forward in full support of environmental protection when the Ministry of Environment, Forest and Climate Change (MoEFCC) notified the Battery Waste Management Rules, 2022 and E-Waste Management Rules, 2022 on August 24, 2022. These rules introduced the Extended Producer Responsibility (EPR) framework— a market-based mechanism requiring producers to ensure collection and recycling targets through tradeable EPR Certificates issued by authorised recyclers—aimed at ensuring environmentally sound management of battery and e-waste under the Environment (Protection) Act, 1986.

FISSBA and its members diligently complied with these environmental objectives. However, in 2024, the regulatory landscape dramatically shifted when the Central Government notified the Battery Waste Management (Amendment) Rules, 2024—substituting Rule 10(17) and inserting Rule 10(18)—

alongside parallel amendments to the E-Waste Rules inserting sub-rules 15(9) and 15(10). These changes purportedly empowered the Central Pollution Control Board (CPCB) to fix minimum and maximum prices for EPR Certificates by pegging them to "Environmental Compensation" (EC), a penal levy originally designed solely as a deterrent for EPR non-compliance. CPCB promptly issued binding Guidelines fixing EC at ₹18/kg for Lead (artificially inflating processing costs to ₹15/kg over prevailing market prices) and for Copper at assumed 11% content with ₹1,850/kg costs—figures later proven factually flawed by NABL-accredited lab reports showing actual Copper content at 1.5-4.5% and tolling at ~₹7/kg.

This sudden imposition of a compulsory price-control regime—without empirical data, stakeholder consultations, or regulatory impact assessments—sparked immediate crisis for FISSBA's small-scale members. On October 30, 2025, FISSBA submitted detailed representations to the Respondents highlighting the double recovery of Lead processing costs (already embedded

in market prices), erroneous Copper assumptions, cumbersome Rule 113 registration delays exceeding the mandatory 2-week timeline, denial of EPR credits for legitimate pre-consumer off-spec batteries and Remelted Lead (RML)—the backbone of small-scale recycling—and unrealistic 10% recovery loss norms when SMEs actually face over 20% losses due to technological constraints. Undeterred by silence, FISSBA followed up on December 11, 2025 with further evidence, urging MSME-specific reliefs akin to those in Plastic Waste Rules, recognition of GST ambiguities in EC-linked transactions, and revised norms to avert compliance impossibility.

The Respondents' complete inaction transformed grievance into cause of action, especially as the impugned amendments were applied retrospectively from FY 2018-19—imposing penalties for periods predating the 2024 notifications—and created perverse incentives driving cash-strapped SMEs toward informal, unregistered recyclers at sub-floor prices, directly undermining the EPA's environmental goals. Large

producers absorbed costs across portfolios, but SMEs faced existential threats: opaque portals blocking deemed-registered filings, uniform norms ignoring heterogeneous waste streams (mature leadacid vs. nascent lithium-ion recycling), and artificial price floors inflating end-consumer costs for everyday batteries, UPS, and inverters without advancing recycling outcomes.

FISSBA, is constrained to file the present petition not to challenging the EPR framework or EPA's environmental mandate, but seeking to quash the ultra vires price-controls as arbitrary exercises beyond Sections 3, 6 & 25 of the EPA—repurposing penal EC for private commerce—violative of Article 14's equality (manifest arbitrariness, no reasonable classification for SMEs) and Article 19(1)(g)'s trade freedoms (disproportionate burdens, less restrictive alternatives available). The Petitioner prays for declarations of invalidity, prospective enforcement, MSME-tailored reforms, stays on coercion, and CPCB directions for time-bound registrations and data-driven EC revisions.

Hence, the Present Writ Petition. →

Gravita Acquires Company to Boost Capacity in Copper Sector

Gravita India has acquired a 98.5% stake in National Metal Industries for ₹559 crore (\$60 million). National Metal Industries is a leading Indian manufacturer of copper and copper alloy products. Gravita has undertaken this acquisition to expand its presence in the copper market.

Approximately 40% of National Metal Industries' revenue is derived from exports to key international markets such as the UAE, the US, Thailand, Sri Lanka, Kenya, Indonesia, Oman, and Saudi Arabia.

National Metal Industries operates a manufacturing facility in Gujarat with an installed production capacity of over 31,000 tonnes per annum. □

→ **Environment (Protection) Act, 1986 ('EPA')**

The Environment (Protection) Act, 1986 ('EPA') is an umbrella welfare legislation enacted by Parliament under Article 253 of the Constitution of India, read with Entries 13 and 14 of List I and Entries 17A and 17B of List III of the Seventh Schedule, to give effect to India's international obligations arising from the Stockholm Conference on Human Environment, 1972, and subsequent international instruments. The statutory scheme of the EPA, particularly Sections 3, 6, and 25, confers upon the Central Government limited and circumscribed rule-making powers to prescribe standards for emissions and effluents, regulate the handling of hazardous substances, and lay down procedures for the prevention, control, and abatement of environmental pollution. The EPA does not, either expressly or by necessary implication, confer any competence to regulate or fix commercial prices between private parties in the course of their trade or business.

Battery Waste Management Rules, 2022 ('BWM Rules') and the E-Waste (Management) Rules, 2022 ('E-Waste Rules')

The Battery Waste Management Rules, 2022 ('BWM Rules') and the E-Waste (Management) Rules, 2022 ('E-Waste Rules') were notified by the Central Government via GSR Notification GSR 647 (E) & G.S.R. 801(E) in exercise of powers under Section 6(2)(h) and Section 25 of the EPA, with the laudable objective of

establishing a structured framework for the collection, segregation, recycling, and environmentally sound management of waste batteries and electronic waste. Both sets of Rules introduced the Extended Producer Responsibility (EPR) framework as a market-based compliance mechanism, obligating producers, importers, and brand owners to meet prescribed targets for collection and recycling through a system of tradeable EPR Certificates issued by authorised recyclers/dismantlers.

This has become a highly confusing issue for importers as well. On one hand, the government advocates for recycling to conserve natural resources and ensure that critical minerals remain within the country; yet, exporters have been instructed that if they fail to obtain an EPR certificate, they will be required to export a specific percentage of their goods. This outcome is detrimental to both the nation and the environment.

Furthermore, if small-scale producers are unable to meet their EPR targets, there is a risk that recyclers may charge them exorbitant rates for EPR certificates, creating a potential for black marketing.

CPCB Empowered to Fix Prices for EPR Certificates

By the Battery Waste Management (Amendment) Rules, 2024 notified by the Central Government via GSR Notification G.S.R. 190(E), Rule 10(17) of the BWM Rules was substituted and Rule 10(18) was newly introduced, purporting to empower CPCB to prescribe minimum and maximum prices for EPR Certificates by pegging such prices to Environmental Compensation (EC). Similarly, by the

E-Waste (Management) Amendment Rules, 2024 notified by the Central Government via GSR Notification G.S.R. 164(E), sub-rules (9) and (10) were inserted in Rule 15 of the E-Waste Rules, enabling a comparable price-band mechanism for EPR Certificates in the e-waste sector. Both sets of amendments are challenged in the present petition as being ultra vires the EPA and violative of Articles 14 and 19(1)(g) of the Constitution.

Binding Guidelines for Various Waste Materials (Including Lead and Copper)

Pursuant to these amendments, CPCB has issued binding Guidelines fixing Environmental Compensation for various waste streams — including Lead and Copper — and mandating that EPR Certificate prices shall not fall below or exceed a fixed percentage of the applicable EC. This has effectively introduced a compulsory price-control regime through subordinate legislation, repurposing Environmental Compensation — a penal and deterrent construct expressly designed to punish noncompliance with EPR targets — as a benchmark for ordinary commercial transactions between compliant producers and recyclers, thereby converting an environmental compliance enforcement mechanism into an instrument of economic regulation, without any statutory mandate.

The controversial price-control mechanism is excessively burdensome

The Petitioner and its members have fully supported and consistently complied with the environmental

objectives underlying the BWM Rules, 2022 and E-Waste Rules, 2022. The Petitioner does not challenge the constitutional validity of the EPR framework per se, nor the environmental objectives sought to be achieved thereby. The challenge in the present petition is confined to the impugned price-control mechanism introduced through the 2024 amendments, which is wholly beyond the scope of the EPA and disproportionately burdensome to small-scale producers.

The fixation of mandatory floor and ceiling prices for EPR Certificates is not founded upon any disclosed empirical data, independent cost studies, transparent methodology, or rational nexus with improved environmental outcomes. The impugned regime artificially supports the economic interests of recyclers at the recurring cost of producers and manufacturers, distorts freemarket dynamics, and imposes unjustified financial burdens on compliant entities — including the Petitioner's member enterprises — without advancing any legitimate environmental purpose.

The controversial system is illogical

By way of illustration of the manifest irrationality of the impugned regime:

(a) EC for Lead has been fixed at ₹18/kg, wherein ₹15/kg is the 'processing cost' component over and above the established market price for recycled Lead and Rs. 3/Kg is the handling, collection & transportation cost. This results in double recovery of processing costs already embedded in market prices on which a recycler sold their raw material extracted/ recycled/processed waste material

to the producer, constituting unjust enrichment of recyclers and imposing a disproportionate financial burden upon compliant producers without any demonstrable environmental benefit.

For Example: in earlier rules (pre amended BWM Rules), a producer fulfilled its obligations after selling the battery waste to a recycler and taking back the raw material as well as EPR certificate from the recycler but after the amendment in BWM Rules in 2024 as per 10(17) & 10 (18), now the EPR certificate generated by recycler shall be traded on the portal of Respondent no. 2 between the highest & lowest price (i.e. Rs. 5.40/kg to 18/kg for Lead) as determined by the Respondent no. 2 through the Guidelines for Imposition of Environmental Compensation under Battery Waste Management Rules 2022.

(b) Similarly, EC for Copper relevant to Home UPS and inverter devices has been computed on the fundamentally flawed assumption of 11% Copper content and ₹1,850/kg processing cost. However, NABL-accredited laboratory reports — placed before the Respondents vide FISSBA's representations — conclusively establish that actual Copper content in such devices is only 1.5%–4.5%, and that PSU tolling charges are approximately ₹7/kg. The impugned

Guidelines therefore rest upon a factual foundation that is demonstrably and materially incorrect.

Disputed structure is improper & ambiguous

The impugned framework is further tainted by procedural unfairness and opacity, inasmuch as no meaningful stakeholder consultation, regulatory impact assessment, or disclosure of the underlying data or methodology preceded its introduction. The Petitioner submitted that the duplication of processing costs, the flawed Copper content assumptions, and the imperative need to recognise off-spec batteries and Re-melted Lead (RML) as legitimate streams for EPR credit generation. The said facts have not been considered at all by the Respondents, thereby evidencing non-application of mind and constituting a denial of natural justice.

Applicable with retrospective effect

The amendments are being applied retrospectively with effect from the financial year 2017-18, notwithstanding that they were notified and came into force only in 2024. The imposition of retrospective compliance obligations — including financial liabilities and penalties for periods preceding the

Establishing mandatory minimum and maximum prices for EPR certificates is not based on any public empirical data, independent cost studies, transparent methodology, or any logical correlation with improved environmental outcomes.

The Point



notification of the impugned rules — is contrary to settled constitutional principles, the doctrine against ex post facto imposition of burdens, and the fundamental requirements of fairness and legality in subordinate legislation.

Cumbersome and unclear registration process

The impugned regime disproportionately impacts micro and small enterprises, which lack the financial buffers, legal resources, and administrative infrastructure of large manufacturers and importers. SMEs in the battery recycling and manufacturing sector face a state of practical compliance impossibility on account of, inter alia:

(a) cumbersome and procedurally opaque registration processes under the BWM Rules, 2022;

(b) coupled with non-functional online portals for deemed registered users, resulting in the denial of access to statutory compliance filings;

(c) denial of EPR credit for pre-consumer off-spec batteries and Remelted Lead, despite their being genuine and quantitatively significant recycling streams recognised in established industry practice;

(d) unrealistic recovery loss norms prescribed at 10%, when small recyclers — on account of less capital-intensive processes and inherent technological limitations — typically experience actual recovery losses exceeding 20%;

(e) unresolved ambiguity in GST classification and Input Tax Credit (ITC) availability for EC-linked EPR transactions; and

(f) competitive disadvantage vis-à-vis large producers and perverse incentives driving SMEs toward informal, unregistered scrapper/traders, thereby undermining the very environmental objectives of the EPA.

It does not pass the test of proper classification either

The impugned provisions further fail the test of reasonable classification under Article 14, insofar as they apply a uniform EC methodology and pricing regime across fundamentally heterogeneous waste streams. Lead-acid battery recycling is a mature, commercially self-sustaining, and economically viable ecosystem that has existed in India for decades. Lithium-ion battery recycling, by contrast, is nascent, technologically complex, and commercially unviable without external support. The application of a uniform compliance methodology to inherently distinct and unequal categories of producers and recyclers is constitutionally impermissible, amounting to hostile discrimination and failing the twin tests of intelligible differentia and rational nexus.

Inconsistent, Arbitrary, and Constitutionally Unstable

The cumulative effect of the impugned amendments and Guidelines is to impose a disproportionate, arbitrary, and constitutionally unsustainable burden upon small-scale battery producers and recyclers, to distort the market for EPR Certificates, to incentivise informal and non-compliant recycling, and to burden end-consumers with avoidable and unjustified cost

inflation — all without advancing any demonstrable environmental objective. The impugned framework is therefore liable to be struck down in its entirety, and the present Writ Petition is filed seeking the reliefs set out herein.

FISSBA-SPECIFIC GRIEVANCES

The mandatory registration process is extremely cumbersome

The registration process mandated under the BWM Rules, 2022 is excessively cumbersome and procedurally opaque, particularly for micro and small enterprises, and the statutory online portal does not permit deemed-registered users to file returns or demonstrate compliance. This systemic denial of access to statutory compliance filings creates a situation of compliance impossibility — SMEs are rendered incapable of demonstrating minimum use of recycled material or of filing the returns mandated under the Rules, thereby exposing them to coercive penalties despite their bona fide intent and genuine effort to comply. Such a regulatory framework violates the principles of natural justice, procedural reasonableness, and fairness in administration under

Article 14 of the Constitution, and discriminatorily burdens small-scale producers who lack the administrative infrastructure of large corporations.

Denial of EPR Credits is Arbitrary and Irrational

That the Small manufacturers routinely generate pre-consumer off-spec or quality-rejected batteries during production ramp-up and quality-control testing, all of which constitute genuine waste batteries and are invariably sent to authorised recyclers for processing. The denial of EPR credit for such streams is arbitrary and irrational — it penalises SMEs for legitimate production realities that are an inherent feature of small-scale manufacturing, and creates an artificial compliance deficit without advancing any environmental objective whatsoever. This exclusion violates Article 14 by failing the test of reasonable classification and amounts to hostile discrimination against small-scale producers, who structurally experience higher rejection rates than large manufacturers.

RML is the backbone of India's secondary lead recycling ecosystem

The current framework excludes refined Lead processed from Re-

This controversial framework is also plagued by procedural impropriety and opacity, as no meaningful consultation with stakeholders, regulatory impact assessment, or disclosure of underlying data or methodology was undertaken prior to its implementation.

melted Lead (RML) from EPR credit recognition, despite the fact that RML constitutes the backbone of India's secondary Lead recycling ecosystem. Small secondary smelters, who form the predominant segment of FISSBA's membership, operate through a well-established two-step process: first producing RML and then refining it into commercially re-usable Lead. The denial of EPR credit for this widely prevalent and entirely legitimate recycling pathway amounts to non-recognition of actual and substantial environmental compliance, undermines the statutory purpose of the Rules, and violates Article 14 by arbitrarily excluding the predominant recycling method employed by smallscale enterprises.

Recovery loss: not 10%, but 20%.

The impugned framework prescribes a uniform recovery loss norm of 10%, whereas the empirical reality — supported by industry data and independent technical studies — is that small recyclers typically experience recovery losses exceeding 20% on account of less capital-intensive processes and technological limitations inherent in small-scale operations. The imposition of a 10% norm is factually incorrect, technologically unrealistic, and constitutionally arbitrary, as it penalises SMEs for structural constraints entirely beyond their control. This amounts to hostile discrimination under Article 14, treating small recyclers on a par with large, capital-intensive operators and thereby failing the constitutional tests of intelligible differentia and rational nexus.

EPR Certificate Prices

That by linking EPR Certificate prices to Environmental Compensation — which is explicitly a regulatory levy and a penal construct — the impugned framework creates profound ambiguity in the GST classification and ITC availability applicable to EPR transactions. If such transactions at floor prices are characterised as taxable supplies without ITC eligibility, the effective compliance cost for SMEs would be materially higher than the notional floor price, thereby imposing a hidden fiscal burden entirely outside the statutory scheme. This want of regulatory clarity violates the principles of certainty in taxation and fiscal fairness, disproportionately escalates compliance costs for small-scale producers, and contravenes both Article 14 and Article 19(1)(g) of the Constitution.

MSMEs and large-scale producers were placed in the same category

The impugned floor price mechanism places SMEs at a severe competitive disadvantage vis-à-vis large producers and importers, who can absorb compliance costs across diversified product lines and leverage superior bargaining power in negotiations with recyclers. SMEs, lacking such buffers, are compelled to pay inflated floor prices and thereby suffer further erosion of already thin margins, threatening the commercial viability of their enterprises. More perniciously, the regime creates a powerful incentive for SMEs to resort to informal, unregistered recyclers who offer off-portal transactions at subfloor prices, thereby actively

encouraging informal recycling and directly defeating the environmental objectives of the EPA. This perverse incentive structure is irrational, counter-productive, and violative of Article 14 as it bears no rational nexus to the environmental object sought to be achieved.

No Relief for MSMEs

The impugned regime wholly disregards the legislative and policy framework protecting micro, small, and medium enterprises, which are recognised under the Micro, Small and Medium Enterprises Development Act, 2006 and related schemes as requiring differential regulatory treatment and relief. By imposing uniform floor pricing and compliance obligations without any accommodation for the structural constraints of MSMEs, the Respondents have contravened the principle of reasonable accommodation, violated Article 14 by treating unequals as equals, and undermined the statutory and policy objectives of MSME protection in India. The complete absence of a separate compliance category for SMEs — particularly when analogous regimes under the Plastic Waste Management Rules have expressly provided for such differentiation — amounts to constitutionally impermissible hostile discrimination.

Artificial increase in prices

The artificial inflation of EPR Certificate prices translates inevitably and directly into higher compliance costs for producers, which are passed on to end-consumers in the form of higher prices for goods of everyday use — batteries, UPS systems,

and inverter devices. This creates unwarranted inflationary pressure on essential consumer products without any offsetting environmental benefit, fails the test of public interest and proportionality, and renders the impugned framework constitutionally unsustainable.

Disregard for the Deadline

That Rule 11(3) of the BWM Rules, 2022 expressly and unambiguously mandates that CPCB must complete the registration process within two weeks, failing which registration shall be deemed as granted. Notwithstanding this clear statutory prescription, CPCB routinely and systematically ignores this timeline: applications remain 'Under Process' for extended periods of several months; queries are raised piecemeal and belatedly; and communication channels with the Registry remain unresponsive to applicants. This systemic and persistent noncompliance with a mandatory statutory provision places SME applicants in a state of continuing compliance impossibility, exposing them to coercive penalties for defaults attributable entirely to the Respondent's own administrative delinquency, thereby violating Article 14 and the doctrine of legitimate expectation.

Disregard for the Principle of Proper Classification

That unlike the Plastic Waste Management Rules and the E-Waste Rules, which expressly provide exemptions or targeted relaxations for micro and small enterprises based on

turnover, production volume, or other objective criteria, the BWM Rules, 2022 impose uniform, undifferentiated compliance obligations across all producers irrespective of scale. This failure to incorporate reasonable accommodations for SMEs — when such accommodations are recognised as constitutionally mandated in analogous regulatory frameworks — disregards the principle of reasonable classification under Article 14, imposes disproportionate burdens on Micro & Small producers, and risks driving them out of the formal recycling sector into the informal economy, thereby producing an outcome diametrically opposed to the statutory purpose.

Environmental Compensation Guidelines Are Arbitrary

The Environmental Compensation Guidelines arbitrarily fix the processing cost of Lead at ₹15/kg without disclosing any empirical basis, independent cost survey, methodology, or stakeholder consultation. Credible industry data and independent technical assessments — including studies placed before the Respondents — establish that actual processing costs range between ₹5–₹7/kg depending upon the technology employed and the scale of operations. The fixation of a uniform ₹15/kg is not only unsupported by evidence but directly contradicts available data, amounting to manifest arbitrariness in violation of Article 14, unjust enrichment of recyclers, and double recovery of costs already embedded in prevailing market prices for secondary Lead.

Minimum Usage Obligation

That Rule 4(14) obligates all producers (including importers who also in the definition of Producer as per the BWM Rules 2022) to ensure minimum use of domestically recycled material in new batteries. As far as Importers of batteries are concerned, they have two options to meet their obligation of minimum use of domestically recycled materials in new battery i.e. firstly they get meet their obligation through other businesses or by exporting such quantity of domestically recycled material. In such manner, importers are compelled to meet their obligation by getting utilization of recycled raw material through other businesses (who have neither the obligation nor the commercial incentive to meet such obligation) or to export domestically recycled Lead — a commercially impractical and strategically indefensible outcome given India's known scarcity of Lead resources. This framework creates artificial and exploitable secondary markets, incentivises profiteering by intermediaries, and actively undermines domestic resource security. The obligation is one that is impossible of fulfilment in practice, violates Article 19(1)(g) of the Constitution, and defeats the stated statutory purpose of conserving scarce mineral resources within the domestic economy.

This writ petition was filed in the Delhi High Court on April 15 by Advocates Mr. Dinesh Parashar and Mr. Sarvendra M. Tripathi on behalf of the Federation. Notices have been issued. The hearing is scheduled for July 3, 2026. □

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India gets a new lithium-ion battery & rare earth recycling facility in UP

Rocklink India has established an integrated recycling facility for lithium-ion batteries and rare earth magnets at the UPSIDC Industrial Area in Sikandrabad, Uttar Pradesh, marking its first such operation in the country. The plant is designed to process lithium-ion batteries, rare-earth magnets, and metal-bearing industrial waste, supporting efforts to strengthen domestic recovery of critical materials and to develop circular supply chains. The facility has an initial lithium-ion battery recycling capacity of 10,000 tonnes per year, along with rare earth magnet processing operations of 60 tonnes per month.



The company is also set to commission a rare-earth chloride processing unit with a capacity of 1,500 tonnes annually in the first quarter of 2026, aimed at expanding its capabilities in rare-earth material recovery. According to Leonard Alexander Ansoorge, Director of Rocklink India Pvt. Ltd., the facility is intended to support the development of recycling infrastructure for critical materials used in electric mobility, renewable energy and advanced manufacturing.

The plant is registered under Extended Producer Responsibility (EPR) norms and is equipped to handle 95 types of battery scrap, including pre- and post-consumer materials. It uses the company's in-house developed recycling process, referred to as R2, which converts battery waste into reusable components while managing hazardous emissions. The company says that the process is designed to handle different battery formats and chemistries, with systems in place to capture volatile organic compounds through controlled processing and waste gas treatment. The facility achieves recovery rates of over 98 per cent for metals such as aluminium, copper and iron, while producing black mass for further refinement.

In addition to recycling, Rocklink India plans to introduce battery refurbishment operations at the site. This will allow usable cells to be tested, balanced and repurposed, extending battery life cycles and improving resource efficiency. The facility also includes dedicated infrastructure for rare earth magnet recycling, covering materials such as NdFeB, SmCo and AlNiCo, commonly used in motors and industrial applications. Semi-automated systems will dismantle magnet-containing assemblies to improve material traceability and processing efficiency. □



Role of Negative Sulfation on Warranty Claims

– Cancrie Pvt. Ltd., Jaipur, Mob.: 8302522817–

Lead-acid batteries continue to dominate in automotive and backup applications due to their cost-effectiveness and established supply chains. However, one of the most persistent challenges affecting battery life and warranty returns is negative plate sulfation.

This article explains simply and practically how NAM (Negative Active Material) porosity, strength, and sulfation behavior directly influence battery performance, field failures, and ultimately, your bottom line.

1. What is Negative Sulfation and Why It Matters?

During discharge, lead (Pb) in the negative plate converts to lead sulfate ($PbSO_4$). During charging, this $PbSO_4$ should ideally convert back to Pb.

However, in real-world conditions: Partial state of charge (PSOC) cycling, High discharge rates and Inadequate charging lead to hard, irreversible $PbSO_4$ crystals, which reduce active

surface area and decrease charge acceptance. This negative sulfation is a major root cause of Poor C-rate performance and Increased warranty returns.

2. Role of NAM Porosity

What is Porosity?

Porosity refers to the pore structure within the negative active material, which allows electrolyte penetration and ion transport.

Why it matters?

Higher and well-distributed porosity leads to better electrolyte access, Higher reaction surface area, Faster charge acceptance

Practical Impact:

Parameter	Low Porosity	Optimized Porosity
Charge Acceptance	Poor	High
Sulfation Rate	Fast	Slower
Battery Life	Reduced	Extended

3. Role of NAM Strength

What is Strength?

NAM strength refers to the mechanical integrity of the negative plate, especially under:

- Repeated cycling
- Vibrations (automotive use)
- Deep discharge conditions

Why it matters?

Weak NAM leads to:

- Shedding of active material
- Loss of conductive pathways
- Accelerated degradation

Practical Impact:

Parameter	Weak NAM	Strong NAM
Shedding	High	Low
Internal Resistance	Increases quickly	Stable
Life Cycles	Reduced	Improved

In Indian road conditions (bumpy terrain), poor NAM strength can reduce battery life by 15–20%.

4. Sulfation Delay: The Hidden Lever

Not all sulfation can be avoided, but it can be delayed.

If sulfation onset is delayed:

- The battery operates efficiently for longer
- Capacity fade starts later

● Warranty period is comfortably covered

Practical Impact:

- A battery that delays sulfation by even 15–20% of its lifecycle can:
 - Reduce early failures significantly
 - Improve customer satisfaction
 - Lower return rates

5. What This Means in Financial Terms

Let's break it down for a typical manufacturer:

Assumptions:

- Annual sales: 50,000 batteries
- Warranty return rate: 5%
- Cost per return (logistics + replacement): ₹2,000

Current Loss:

- 2,500 returns/year
- Total loss = ₹50 lakhs/year

If sulfation-related failures are reduced by 25%:

- Returns drop to 1,875
- Savings = ₹12.5 lakhs/year

Additional Gains:

- Better brand reputation
- Lower dealer friction
- Improved repeat sales

Even a 5–7% improvement in Ah efficiency and 8–10% better C-rate performance can significantly reduce claims in high-demand applications like e-rickshaws.

Porosity refers to the pore structure within the negative active material, which allows electrolyte penetration and ion transport.

6. Bringing It All Together

Factor	Impact on Sulfation	Impact on Warranty
Porosity	Improves ion access	Reduces early failures
Strength	Prevents material loss	Extends cycle life
Sulfation Delay	Maintains performance longer	Lowers return rates

7. Emerging Approach: Engineered Porous Carbons

To address these challenges, the industry is gradually exploring engineered porous carbon additives in NAM.

What they do:

- Create a conductive porous network
- Improve charge acceptance
- Reduce localized sulfation
- Enhance structural integrity

Observed benefits (field + lab trends):

- 5–7% higher Ah efficiency
- 8–10% improvement in C-rate discharge performance
- Noticeable delay in sulfation onset
- Better resistance to shedding

Final Takeaway

Negative sulfation is not just a chemistry issue—it is a business problem.

Improving:

- Porosity
- Mechanical strength
- Sulfation resistance

...can directly translate into:

- Lower warranty claims
- Higher customer trust
- Better profitability

Small material-level improvements can create large financial impact at scale.

For manufacturers aiming to stay competitive in a cost-sensitive yet performance-driven market, engineering the negative plate is no longer optional - it is essential.

Leading this shift toward advanced material engineering is the innovation represented by Cancrie Nanocarbon. Developed as a new category of engineered carbon, this material is designed to integrate seamlessly into the negative active material, significantly enhancing the critical properties discussed. By optimizing the conductive network and improving the mechanical integrity of the plate, Cancrie Nanocarbon offers a superior solution for delaying irreversible sulfation and drastically lowering material shedding, thereby directly contributing to the desired financial impact of reduced warranty claims and extended battery life. □



Electric Car Catches Fire in Greater Noida

Driver Saves Life by Jumping Out

On the morning of May 11, near Gaur City in Greater Noida West, an electric car suddenly burst into a massive blaze. Sensing the imminent danger, the driver acted with great presence of mind, jumping out of the vehicle to save his life. In a matter of moments, the car was engulfed in flames, turning into a fireball.

The sight of towering flames rising from the road caused panic among bystanders, and a crowd quickly gathered at the scene. The fire department was immediately alerted to the incident. Upon receiving the report, a fire brigade team rushed to the spot and, after a strenuous effort, successfully brought the fire under control.

Fortunately, there was no loss of life in the incident. Preliminary investigations suggest that a battery issue or a technical malfunction is likely the cause of the fire. □

We should get satisfaction from
our work. This is most important.

– Bhagwan Shri Sathya Sai Baba

UK Firefighters called to one lithium-ion battery fire every 5 hours

Fire brigades across the UK are tackling lithium-ion battery fires at a rate of one every five hours, figures show, as fire chiefs warn that public awareness and government regulation have not kept pace with the ubiquity of this new hazard.

Lithium-ion batteries power most rechargeable devices including mobile phones, electric toothbrushes, toys and vapes, as well as ebikes, e-scooters and electric vehicles.

Data gathered by the global business insurer QBE via freedom of information requests reveals that fire brigades were called to 1,760 fires linked to lithium-ion batteries in 2025, equating to 4.8 fires a day, an increase of 147% over the past three years.

Electric vehicle fires rose by 133% over the same period, while the number of electric vehicles on UK roads tripled during that time.

QBE researchers found that ebike fires made up nearly a third of all lithium-ion battery fires nationally and noted that retrofitted and converted ebikes appeared to be disproportionately involved compared with certified models.

There were 520 callouts to fires involving ebikes in 2025, compared



with 149 in 2022. London fire brigade (LFB) tackled 44% of these, with 230 ebike fires occurring in the capital last year and five related fatalities in the past three years.

LFB's deputy commissioner for prevention, Spencer Sutcliff, said We believe regulation can help improve product safety and reduce the chance of consumers being exposed on online marketplaces to faulty or counterfeit products such as ebike batteries, chargers and conversion kits.

A blaze that devastated a historic building in Glasgow and resulted in the two-week closure of Central station, Scotland's largest rail interchange, is believed to have started in a shop selling vapes, which are powered by lithium-ion batteries. If used incorrectly or damaged, these batteries can cause a hazard called thermal runaway, a dangerous chain reaction where the temperature inside the battery rises uncontrollably, producing a toxic gas that vents at high pressure, creating a flame like a blowtorch, and exploding. □



What is Recycling?

Definition, Types, and Its Importance for India

– Gravita India Ltd., Jaipur –

Recycling is the process of collecting, sorting, and converting used or waste materials - such as paper, plastic, glass, and metal - into new, usable products. Instead of discarding these materials in landfills, recycling gives them a second life, conserving natural resources and reducing environmental damage.

For India - a nation generating over 62 million tonnes of solid waste annually - recycling is not just an environmental choice. It is a national necessity.

In this guide, you will learn what recycling means, how it works, its different types, and why India's recycling future depends on both policy action and individual responsibility.

Recycling Definition: What Does It Mean?

The word "recycling" comes from the idea of a cycle - materials moving through production, use, collection, and reprocessing before re-entering the supply chain as raw materials.

A simple recycling definition: recycling is the process of transforming waste materials into new products to prevent the waste of potentially useful materials, reduce the consumption of fresh raw materials, and lower energy usage and pollution.

Recycling is a core pillar of the circular economy - a model where resources are kept in use for as long as possible, extracting maximum value

before being responsibly recovered and regenerated.

How Does Recycling Work? The 3-Step Process

Step 1 - Segregation at source

Recycling begins at home, in offices, and at industrial sites. Waste must be separated into categories - dry recyclables (paper, plastic, metal, glass) and wet or non-recyclable waste. Without proper segregation, recyclable materials get contaminated and lose value.

Step 2 - Collection and sorting

Segregated waste is collected by municipal bodies, private recycling firms, or informal waste pickers and taken to sorting facilities. Here, materials are further categorised by type, grade, and quality using both manual sorting and automated systems.

Step 3 - Processing and remanufacturing

Sorted materials are cleaned, shredded, melted, or chemically broken down into secondary raw materials. These are then sold to manufacturers who use them to produce new goods - closing the loop on the resource cycle.

Types of Recycling: Primary, Secondary & Tertiary

Not all recycling is the same. There are three main types of recycling, each suited to different materials and end uses.

1. Primary recycling (closed-loop recycling)

The recycled material is turned back into the same product it came from. Example: used aluminium cans

melted down to produce new aluminium cans. This is the most efficient form as it preserves material quality. In India, aluminium recycling saves up to 95% of the energy needed to produce primary aluminium from bauxite ore.

2. Secondary recycling (open-loop or downcycling)

Materials are recycled into a different - often lower-grade - product. Example: PET plastic bottles processed into polyester fibre for clothing or carpet. This is the most common form of plastic recycling in India, where virgin-quality plastic recovery remains limited.

3. Tertiary recycling (chemical recycling)

Materials are broken down at a molecular or chemical level to recover base chemicals or fuels. Example: waste tyres converted into fuel oil or carbon black through pyrolysis. Gravita India operates advanced waste tyre recycling facilities that use this method to recover valuable materials from rubber waste that would otherwise be burned in the open.

Other recycling categories by material

Paper and cardboard recycling

– Reduces deforestation; one tonne of recycled paper saves approximately 17 trees.

Plastic recycling – Critical in India, which produces 3.5 million tonnes of plastic waste yearly.

Metal recycling – Lead, copper, aluminium, and steel are among the most valuable recyclables.

Glass recycling – Glass can be recycled infinitely without loss of quality.

E-waste recycling – Recovers

precious metals from discarded electronics.

Battery recycling – Prevents toxic lead and acid from entering soil and groundwater.

Rubber/tyre recycling – Converts waste tyres into fuel, crumb rubber, and carbon black.

Why Is Recycling Important?

Environmental, Economic & Social Benefits

Environmental benefits

Reduces greenhouse gas emissions – Limits emissions from landfills and incineration.

Prevents pollution – Helps avoid air and water contamination caused by improper waste disposal.

Conserves natural resources – Lowers the need for raw material extraction, protecting forests, rivers, and ecosystems.

Minimises landfill waste – Reduces the volume of waste sent to already-overflowing landfills.

Economic benefits

1. Creates secondary raw materials that lower India's reliance on imported resources.

2. Generates revenue and employment across collection, sorting, processing, and manufacturing.

3. Provides recycled inputs to sectors like automotive, renewable energy, and construction.

4. Reduces waste management expenses for local governments.

Social benefits

1. Supports over 4 million informal

waste pickers who form the backbone of India's recycling economy.

2. Formalising the recycling sector improves wages, health conditions, and social security for this workforce.

3. Creates awareness and responsibility around consumption habits at the household level.

Why Recycling Is Crucial for India Specifically

India's waste crisis by the numbers

1. India generates 62 million tonnes of municipal solid waste every year.

2. Only 20–25% of this waste is treated or recycled effectively.

3. India produces 3.5 million tonnes of plastic waste annually - less than 10% is recycled.

4. The country is the third largest e-waste producer in the world.

5. India's landfills are reaching capacity, with cities like Delhi managing thousands of tonnes of unprocessed waste daily.

Resource dependency

India imports significant quantities of metals, crude oil, and raw materials. Recycling reduces this dependency by recovering and reusing what is already in circulation - from lead in used batteries to copper in discarded electronics.

Climate commitments

India has pledged to achieve net-zero emissions by 2070 and has committed to reducing the emissions intensity of its GDP. Recycling plays a direct role by cutting industrial energy consumption and landfill methane emissions - two significant sources of

greenhouse gas in India.

India's Recycling Policy Framework

India has developed a comprehensive legal framework to govern waste management and recycling. Key regulations include:

1. Solid Waste Management Rules, 2016 – Mandates source segregation and collection standards for urban local bodies.

2. Plastic Waste Management Rules, 2016 (amended 2021, 2022) – Regulates single-use plastics and mandates extended producer responsibility for plastic packaging.

3. E-Waste Management Rules, 2022 – Sets targets for producers to collect and recycle e-waste through authorised dismantlers.

4. Battery Waste Management Rules, 2022 – Establishes EPR obligations for battery manufacturers and importers.

5. Waste Tyre Management Rules – Governs the collection and recycling of end-of-life tyres.

6. End of Life Vehicle Policy – Addresses recycling of scrapped automobiles.

Extended Producer Responsibility (EPR)

EPR is a policy approach that holds producers, importers, and brand owners legally responsible for the end-of-life management of their products. Under India's EPR framework, companies must meet annual collection and recycling targets, register on the CPCB portal, and submit compliance reports. This shifts the financial burden of

recycling away from municipalities and towards those who profit from products.

How Gravita India Is Advancing Recycling in India

Gravita India is one of the country's leading recycling companies, with operations across Asia, Africa, and Europe. Gravita's work spans several key recycling streams:

Lead battery recycling – Eco-friendly recovery of lead from used lead-acid batteries, serving the automotive, telecom, and renewable energy sectors.

Plastic scrap processing – Transforming plastic waste into reusable granules for packaging, construction, and manufacturing.

Aluminium recycling – Recovering aluminium from scrap at a fraction of the energy cost of primary production.

Rubber and waste tyre recycling – Converting end-of-life tyres into fuel oil, carbon black, and crumb rubber through pyrolysis.

Lithium battery recycling – Recovering and processing lithium-ion batteries from electric vehicles, electronics, and energy storage systems to reclaim valuable materials like lithium, cobalt, and nickel.

Copper recycling – Extracting and refining copper from scrap cables, wires, and industrial waste to produce high-quality copper for electrical and construction applications.

Recycling consultancy – Providing turnkey solutions and strategic guidance to industries implementing sustainable waste practices.

What Can Individuals Do to Recycle Better in India?

At home

1. Separate dry and wet waste every day - this single habit enables effective recycling downstream.
2. Rinse plastic bottles, tins, and containers before putting them in the dry waste bin.
3. Avoid small plastics like sachets and single-serve pouches - they are difficult to collect and recycle.
4. Switch to reusable alternatives: cloth bags, steel bottles, and refillable containers.
5. Hand over e-waste and batteries to authorised collectors rather than disposing them with regular waste.

Know what's recyclable

Widely recyclable: PET bottles, HDPE containers, aluminium cans, steel tins, cardboard, clean paper, glass bottles.

Needs special processing: Tetra Pak cartons, multi-layer packaging films, composite plastics.

Not recyclable: food-soiled paper, used diapers, ceramic crockery, wax-coated paper.

Challenges Facing Recycling in India

Low awareness - many households do not segregate waste or understand the value of recyclables.

Lack of infrastructure - recycling facilities are concentrated in urban centres; rural areas lack access.

Informal sector risks - waste pickers

face health hazards from unprotected exposure to toxic materials.

Contamination - unsegregated waste reduces the quality and quantity of recyclable materials recovered.

Fragmented supply chains - collection, sorting, and processing are often disconnected, increasing costs.

The Future of Recycling in India: Key Opportunities

1. Technology-driven waste tracking and traceability systems to improve collection efficiency.
2. Deposit return schemes for plastic bottles and glass, inspired by Germany's Pfand system.
3. Greater public-private partnerships to fund recycling infrastructure in Tier 2 and Tier 3 cities.
4. Expansion of buyback models for milk packets, packaging films, and e-waste at the neighbourhood level.
5. Integration of the informal waste sector into formal supply chains with better pay and health protections.

Frequently Asked Questions About Recycling

Q. What is recycling in simple words?

A. Recycling is the process of turning used or waste materials - like plastic, paper, glass, and metal - into new products instead of throwing them away. It helps save energy, reduce pollution, and conserve natural resources.

Q. What are the 3 types of recycling?

A. The three main types of recycling are primary recycling (closed-loop, where material becomes the same product again), secondary recycling (open-loop or downcycling, where material becomes a different product), and tertiary recycling (chemical recycling, where material is broken down into chemical components or fuel).

Q. Why is recycling important in India?

A. India generates over 62 million tonnes of waste annually, with only 20–25% treated effectively. Recycling is critical to managing this waste burden, reducing dependence on imported raw materials, lowering greenhouse gas emissions, and creating livelihoods for millions in the recycling economy.

Q. What is the recycling rate in India?

A. India's overall recycling rate for municipal solid waste is estimated at 20–25%. Plastic recycling is far lower - less than 10% of India's 3.5 million tonnes of annual plastic waste is recycled. The informal sector, including over 4 million waste pickers, plays a significant role in whatever recycling does occur.

Q. What materials can be recycled at home in India?

A. Common recyclable materials include PET plastic bottles, HDPE containers, aluminium cans, steel tins, glass bottles, cardboard, and clean paper. These should be rinsed, dried, and placed in the dry waste bin for collection.

Q. What is Extended Producer Responsibility (EPR) in India?

A. EPR is a government policy that makes producers, importers, and brand owners responsible for collecting and recycling the waste generated by their products at end of life. India has implemented EPR across plastics, e-waste, batteries, and tyres, with compliance monitored by the Central Pollution Control Board (CPCB).

Q. What is the difference between recycling and upcycling?

A. Recycling breaks down a material and reprocesses it into a new product, sometimes of lower quality. Upcycling transforms a waste item into something of higher value or quality without breaking it down - for example, turning old tyres into garden furniture. Both reduce waste but use different approaches.

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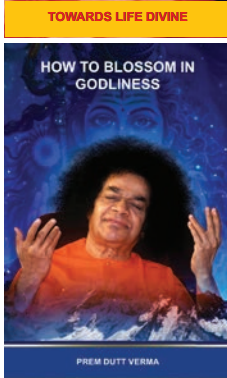
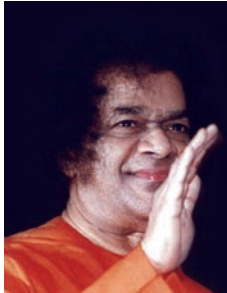
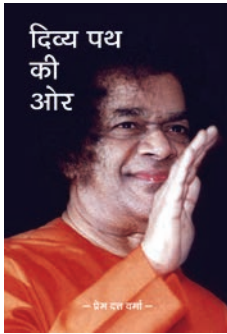
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Character Is The Goal Of Education

– Bhagwan Sri Sathya Sai Baba –

Right from the time of birth, all activities of man are centred around the process of learning and acquiring wisdom. It is absolutely necessary to teach the spirit of idealism to our students so that they fill their hearts with love and give happiness to one and all. Today, there are a number of educational institutions all over the world, but, nobody seems to have understood what education really means. Students fill their heads with mere bookish knowledge, write examinations, secure pass marks and claim that they are educated.

In spite of his education and intelligence, a foolish man will not know his true Self and a mean-

minded person will not give up his evil qualities. (Telugu poem)

Modern education leads only to argumentation, not to total wisdom. What is the use of acquiring education which cannot lead you to immortality? Acquire the knowledge that will make you immortal. (Telugu poem)

Vidya means Jnana (wisdom). Jnana does not mean worldly intelligence. True education is that which develops inner vision and makes you experience everlasting bliss. In what way are the students benefited by the present educational system? They are merely acquiring degrees and earning the appreciation of the

authorities, but they do not understand the real significance of education. Modern students are unable to realise the true spirit behind their participating in sports and cultural events. In all events of sports and games, you have



and also a loser. People are interested only in the outcome of the events and not in enjoying the spirit of sports. The aim of sports and games is not to produce a decisive result but to inculcate the spirit of sportsmanship in the participants.

Life is a game, play it. Life is a dream, realise it. Life is love, enjoy it. It is only he who understands the import of these statements and realises them in his daily life is a true student.

Modern system of education, instead of developing the power of discrimination in students, is making them narrow-minded. It neither bestows true wisdom nor does it help them to become broad-minded. The present-day education has become meaningless. The textbooks that are prescribed for students do not contain the essence of true education. I wonder why the government promotes such meaningless textbooks! May be, even the government is unaware of the realities. It appears as though someone at some low level is taking these decisions without consulting the higher authorities. It is bringing a bad name to the government, but nobody seems to be concerned about it. Such an unhealthy trend is on the rise. Nobody is making efforts to understand the

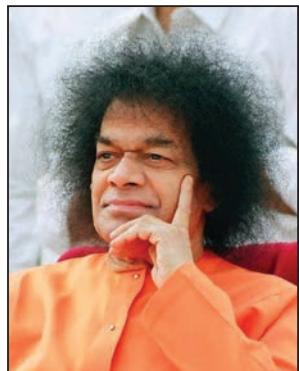
sacredness associated with the ancient system of education. Students are interested only in bookish knowledge, not in the essence of education. Only their textual knowledge is tested, but not practical knowledge. Students think that degrees are meant to earn a livelihood. Education is for life, not for a living. But neither the students nor the parents realise this truth. Parents are happy if their children score high marks in their examinations. They are not bothered about the heap of bad remarks their children get. If only they care to look into the remarks, they will truly understand the type of education that their children are receiving. Due to the advancement in modern education, the study of Vedas and Sastras has declined. In this situation, how can the present education confer true wisdom on you?

Parents & Teacher Should Be More Responsible

You should acquire such education which will be beneficial to the society and the world at large. What is the present state of society? In what way can we make it ideal? How should one work for the advancement of the society? Nobody seems to think on these lines. Even the present system of education does not lay emphasis on service to society. If someone talks about reforms in the system of education, the students just brush it aside. They think that textual knowledge is the be-all and end-all of education. The elders should take up the responsibility to give proper education to students. Students should uphold the honour of the society. We should follow the teachings of our ancient sages and seers who

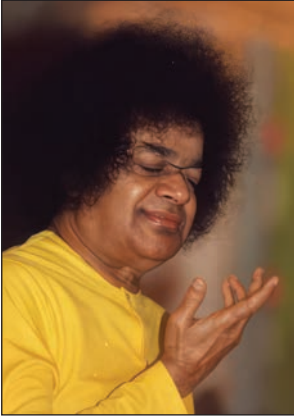
have given us the true meaning of education. It is a sign of foolishness to become egoistic by merely acquiring a few degrees. You should understand the needs of society and utilise your education for its progress. People say they are serving the society, but without really understanding what the requirements of the society are. Such service is not samaja seva (social service), but samadhi seva, meaning a lifeless, mechanical activity. Society will progress only when the system of education is set right. As the craze for Western education has increased, the study of vedic texts is being neglected. Parents should teach their children what is good and what is bad right from their childhood. They should not be satisfied merely by securing admission in a college and acquiring a degree by their children. They should ensure that their children utilise their education to serve the nation. The government may not be able to do much in this regard; it is the responsibility of the parents to guide their children on proper lines. They should encourage the children to work for the progress of the nation. But nowadays, parents do not have such broad-mindedness. Even teachers are not interested in the welfare of the nation. They feel that their responsibility ends with imparting bookish knowledge to students. They do not even enquire whether the information contained in the textbooks is beneficial to society or not. They do not take up the matter with the government. Even if they do take it up, the government is not responsive. They are changing educational institutions into factories which produce degree holders. Students alone are not to be blamed for this state of affairs. Parents, teachers and the government are

equally responsible for this dismal state of affairs. It is not enough if students secure high ranks in the class and earn a good name. They should work for the progress of the society and the nation and thus bring a good name to parents. Parents should monitor the progress of their children from time to time, inculcate virtues in them and mould them into responsible citizens. They should not rest satisfied if their children get good marks. They should also observe what type of books they read at home. Some students read meaningless novels. But the parents do not bother to correct them. On the other hand, they say, "What is wrong in reading novels? It is enough if they are happy." In this manner, they spoil their own children. They do not care to observe how their children behave in their absence. There is no point in merely educating the children without correcting their behaviour. Parents should emulate the ideals of our forefathers who brought up their children in the most ideal way.



Students Be Provided A Blend Of Secular & Spiritual Education

The modern system of education needs reforms. Parents today take pride that their children are studying in English medium schools and are able to recite English poems. They fail to understand



what type of impact and influence this modern education has on their children. The tiny tots in kindergarten are taught nursery rhymes like “Ba ... Ba ... Black Sheep”. Because of such education, the children are ultimately becoming black sheep themselves. I am really pained and disgusted watching the present-day system of education which is totally spoiling the lives of students. That is why I have established educational institutions spending crores of rupees to mould the character of students. I am providing even textbooks free of cost to the students. In the present-day world, the situation is so bad that even for admission to a primary school one has to register well in advance paying thousands of rupees as donation. Parents are happy if their wards get admission in what they consider good schools, but they do not bother about the benefit that would accrue on account of such an educational system. The children do not appreciate the privations the parents have to undergo for educating

them. Parents take loans and even forgo proper food and sleep to educate their children. Ultimately, the children do not benefit out of this system of education. They are unable to understand what is good and what is bad for them. Today when the quality of education has become so ‘cheap’ how can such education make one a ‘chief’? Neither the parents nor the teachers nor the students are able to understand how the society and the nation are benefited by the present system of education. Therefore, all of them should join hands and work unitedly to bring about a complete transformation in the society. At present students’ agitation is on the increase. However, it is not their fault. They are in themselves very good-natured. Fault lies with the teachers, elders and the government. It is a decided factor that the present system of education is not designed to mould the character of the students. There are many good students, but parents, teachers and textbooks do not guide them properly. It is high time that the parents opened their eyes and seen the real state of affairs. They should see to it that their children come up in their life by acquiring proper education. They should encourage their children to pursue such type of education which will lead them to immortality. Of course, secular education is also necessary. But, secular education should be harmonised with spiritual education to mould the character of the students and make them better citizens of the country.

*Sankranti Message, January 15, 2004,
Prasanthi Nilayam*



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