



Lithium Battery & E-Waste

(Electronic Waste) Recycling Industry.

Battery Recycling as a Business.

**Electronic Waste Management, Disposal
and Recycling**

[NPCS/5071/23387]

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Introduction

E-Waste

Electronic waste, or e-waste, is a term for electronic products that have become unwanted, non-working or obsolete, and have essentially reached the end of their useful life. Because technology advances at such a high rate, many electronic devices become “trash” after a few short years of use. In fact, whole categories of old electronic items contribute to e-waste such as VCRs being replaced by DVD players, and DVD players being replaced by Blu-ray players. E-waste is created from anything electronic: computers, TVs, monitors, cell phones, PDAs, VCRs, CD players, fax machines, printers, etc.

Electronics (E-waste) Recycling

Electronics waste, commonly known as e-scrap and e-waste, is the trash we generate from surplus, broken and obsolete electronic devices. E-waste or electronics recycling is the process of recovering material from old devices to use in new products.



- **Conservation of natural resources:**

E-waste has a lot of recoverable and valuable resources like plastics, gold, copper, aluminum, and iron. To preserve our natural resources, all e-waste should be recycled and reused instead of dumped into landfills.

- **Preventing soil contamination by toxic chemicals:**

E-waste can be loaded with hazardous materials like lead, chromium, mercury, chemical flame retardants, and beryllium, which can be harmful to our water and soil. Computers and servers can contain cadmium, mercury, and chromium. Flat-panel TVs and LCD screens can contain lead.

- **Buy-back offers for customers:**

Many computer and phone manufacturers provide buy-back offers for consumers who return their e-waste. By recycling this e-waste manufacturers are able to obtain a continuous supply of raw materials without the need for mining or further exploitation of natural resources. Consumers also enjoy the benefit of reduced pricing by committing to recycle cell phones, computers, and other common e-waste products.

- **Creating new jobs:**

Recycling e-waste can create jobs for people involved in professional refurbishing and recycling. It can create new markets for materials and components. Other financial benefits due to e-waste recycling include minimization of transportation costs involved in movement of raw materials from one place to another and associated labor costs.

- **Energy efficiency:**

One of the biggest advantages of recycling e-waste is considerable reduction of energy requirements. The energy cost involved in e-waste recycling is comparatively less than the cost involved in mining and processing of new materials from soil. For example, recycling of aluminum will take ninety-five percent less energy than production of fresh aluminum from raw materials. Recycling of plastics can save up to 70% energy, recycling of glass up to 40% energy, while recycling of steel can save up to 60% energy.

E-waste recycling also helps reduce air pollution, greenhouse gas emissions, and dependence on oil.

Lithium Battery

Lithium batteries are disposable (primary) batteries that have lithium metal or lithium compounds as an anode. Depending on the design and chemical compounds used, lithium cells can produce voltages from 1.5 V to about 3.7 V, over twice the voltage of an ordinary zinc-carbon battery or alkaline cell battery. Lithium batteries are commonly used as power sources for portable electronics and implanted medical devices.



Lithium batteries are used in many devices present in the workplace. They include pretty much all computers, cell phones, cordless tools, watches, cameras, flashlights, some medical devices, and vehicles ranging from golf carts, electric cars, airplanes and many others. Cell Phone Lithium Battery Batteries of all types are useful because they allow us to store energy for use whenever it is needed.

Lithium Ion (Li-Ion) battery is a rechargeable battery with twice the energy capacity of a Nickel-Cadmium battery and greater stability and safety. LiIon batteries use a liquid lithium-based material for one of their electrodes. Lithium-ion batteries are used in applications that require lightweight and high-energy density solutions. These batteries provide the highest energy density per weight and are mostly used in cellular phones, notebook computers, and hybrid automobiles.

Lithium Ion Battery Advantages

There are many advantages to using a li-ion cell of battery.

These li-ion battery advantages include:

- **High Energy Density:** The much greater energy density is one of the chief advantages of a lithium ion battery or cell. With electronic equipment such as mobile phones needing to operate longer between charges while still consuming more power, there is always a need to batteries with a much higher energy density. In addition to this, there are many power applications from power tools to electric vehicles. The much higher power density offered by lithium ion batteries is a distinct advantage.

- **Self-Discharge:** One issue with batteries and cells is that they lose their charge over time. This self-discharge can be a major issue. One advantage of lithium ion cells is that their rate of self-discharge is much lower than that of other rechargeable cells such as Ni-Cad and NiMH forms.
- **No Requirement for Priming:** Some rechargeable cells need to be primed when they receive their first charge. There is no requirement for this with lithium ion cells and batteries.
- **Low Maintenance:** One major lithium ion battery advantage is that they do not require any maintenance to ensure their performance. Ni-Cad cells required a periodic discharge to ensure that they did not exhibit the memory effect. As this does not affect lithium ion cells, this process or other similar maintenance procedures are not required.

- **Variety of Types Available:** There are several types of lithium ion cell available. This advantage of lithium ion batteries can mean that the right technology can be used for the particular application needed. Some forms of lithium ion battery provide a high current density and are ideal for consumer mobile electronic equipment. Others are able to provide much higher current levels and are ideal for power tools and electric vehicles.



Market Outlook

E-Waste Recycling

In India as well as other developing countries, majority of the electronic products are not recycled, which poses a serious environment and health risk. In India, E-Waste management and recycling market faces major challenges due to lack of proper regulatory interface and supporting infrastructure. E-Waste in the country is primarily generated from large household appliances and Information Technology and Telecommunications sectors. In the coming years, as the technology advances, lifespan of products would become shorter, resulting in replacement of existing products with the new ones, which would result in further increasing generation of E-Waste.

Presently, the market size of e-waste in India is of 3.2 million MT and expected to touch to 20 million MT by 2020. In terms of value, it is presently of Rs 25,000 crore industry which is expected to touch Rs 125,000 crores by 2020. Fortunately, the entire industry is presently untapped by the formal sector as required under the E-waste management rules of India.

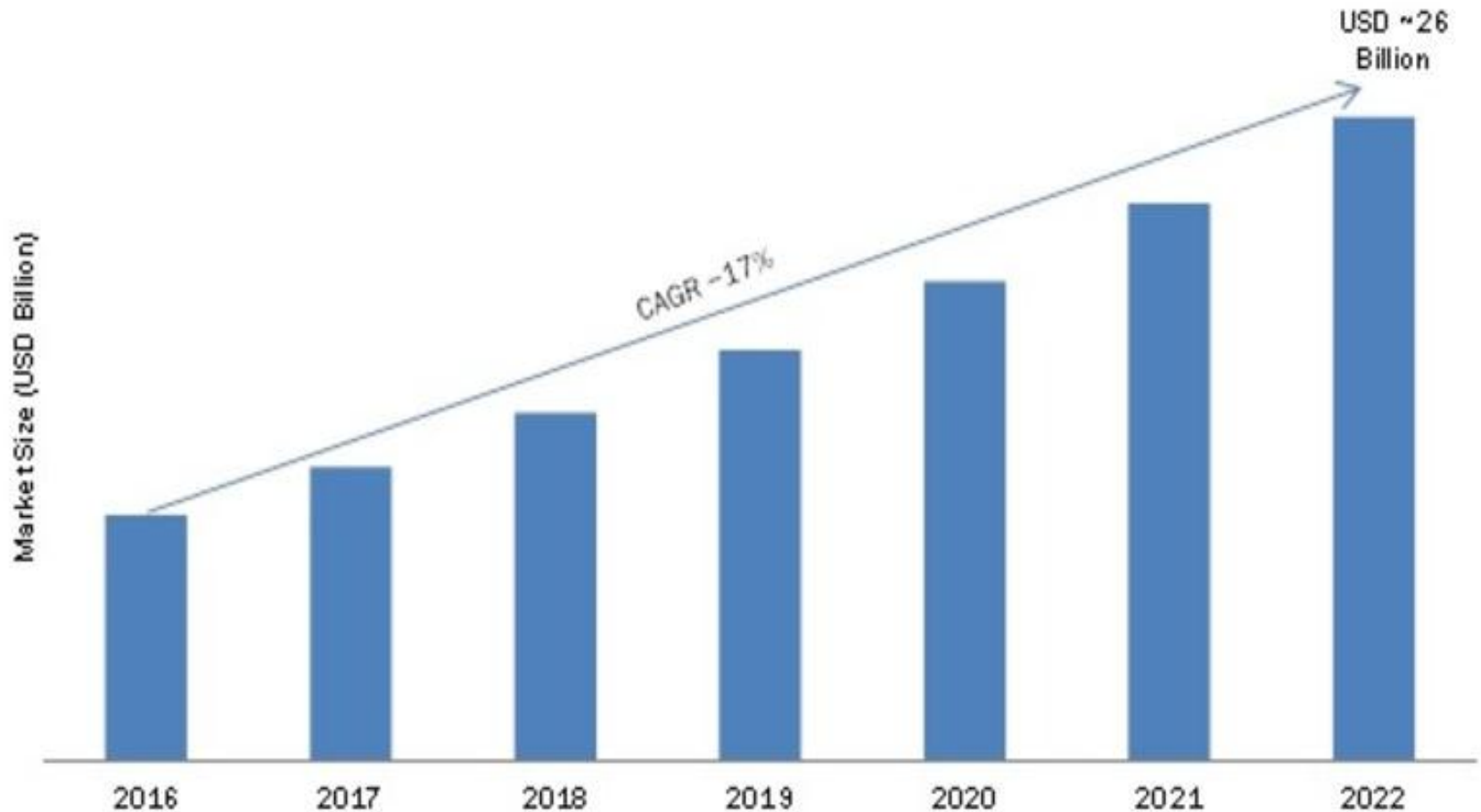
India's E-Waste market has been divided into various segments including IT and Telecom, Large Household Appliances and Consumer Electronics. Some of the key products generating most of the E-Waste in the country include PCs, mobile phones, refrigerators, washing machines, laptops, televisions, etc. Attero, Ecoreco, SIMS Recycling, Earth Sense Recycle, and TSS-AMM are the major E-Waste recycling and management players operating in the country.

These players are focusing on increasing consumer awareness, while also working towards bridging the gap between the organized and unorganized E-Waste management market in India.

Recycling of electronic waste includes two methods as the traditional manual disassembly method and automated process. The automated process is majorly preferred, it consists of 6 steps which are- picking shed, disassembly, first size reduction process, second size reduction process, over band magnet, non-metallic and metallic components separation and water separation.



Electronic Waste Recycling Market

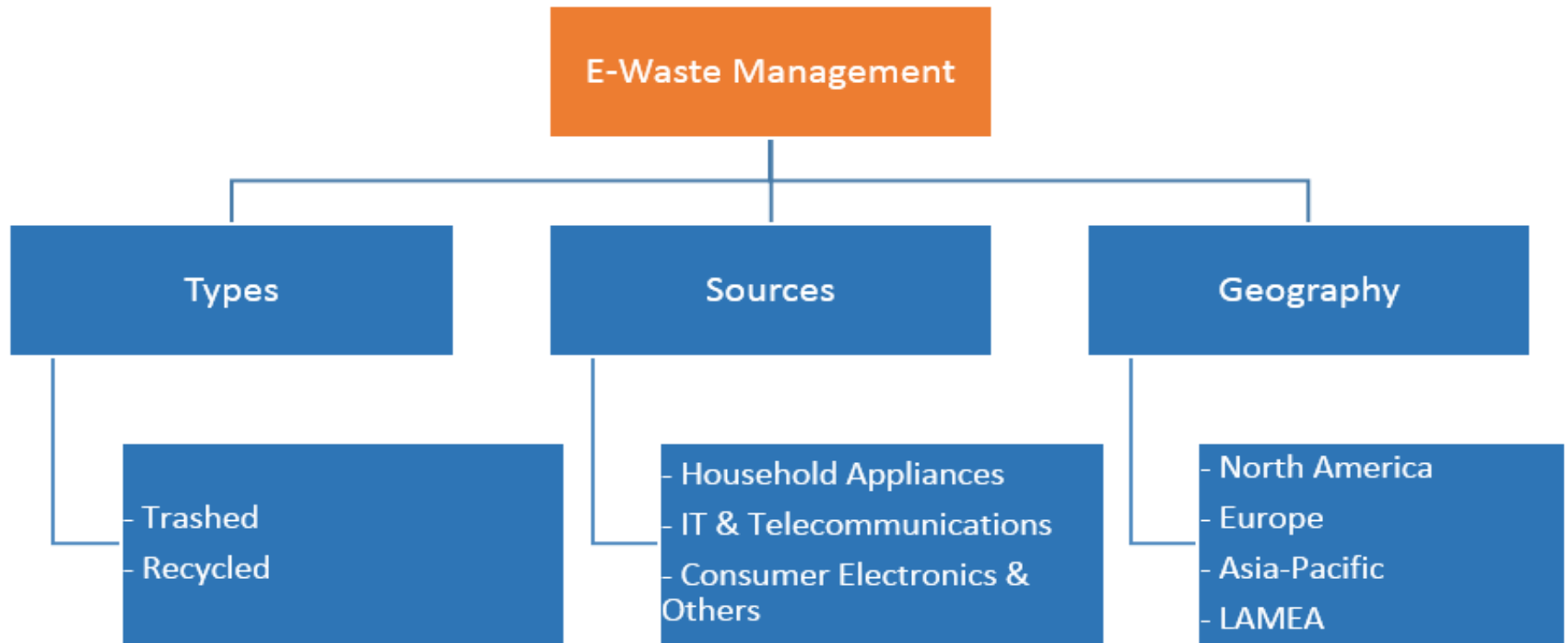


Global E-Waste Management Market is expected to garner \$49.4 billion by 2020, registering a CAGR of 23.5% during the forecast period 2014 - 2020. It is one of the fastest growing waste streams in emerging as well as developed regions. The reduced life spans of electrical, electronic and consumer electronic devices are generating large E-Waste, which is growing rapidly every year. The growth of E-Waste market is supplemented by the growing need for upgrading to the latest technologies. A desire towards the adoption of new technologically advanced devices leads to generation of millions of tons of E-Waste across various regions.



**ELECTRONICS
RECYCLING**

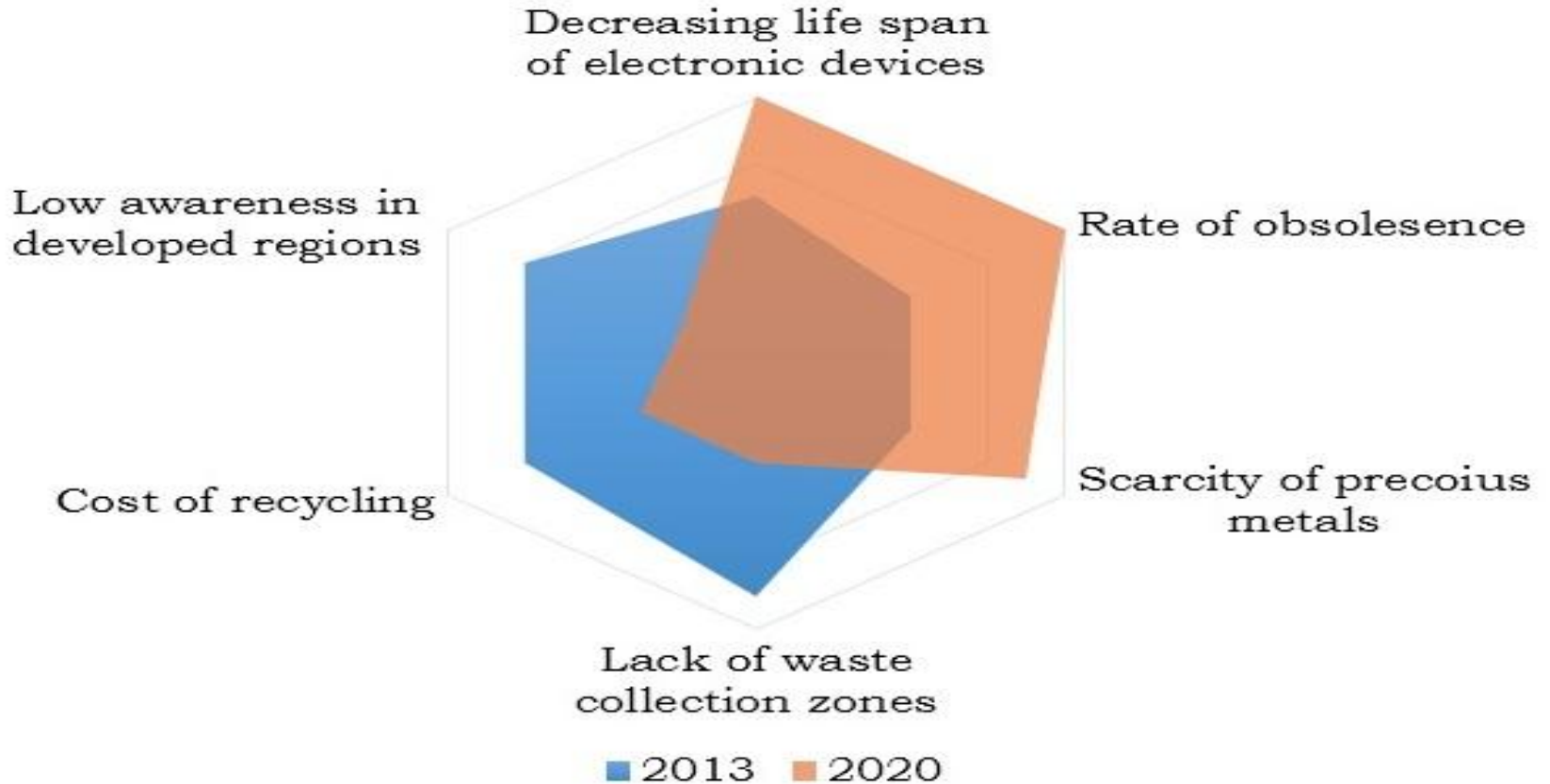
World E-Waste Management Market Segmentation



The high consumption of electronic goods has also resulted in Asia being the largest e-waste generators in the world. Some of the largest Asian countries that generated the most number of e-waste in terms of quantity are China, Hong Kong, Japan, and India. The awareness on the impact of e-waste has grown over the years. This has resulted in the imposition of strong legislative laws as well as the development of e-waste treatment standards and recycling technologies. Standards have been put in place to recycle waste responsibly, which will lead to the growth of the e-waste management market in India and APAC.



Top Factors Impacting World E-Waste Management Market

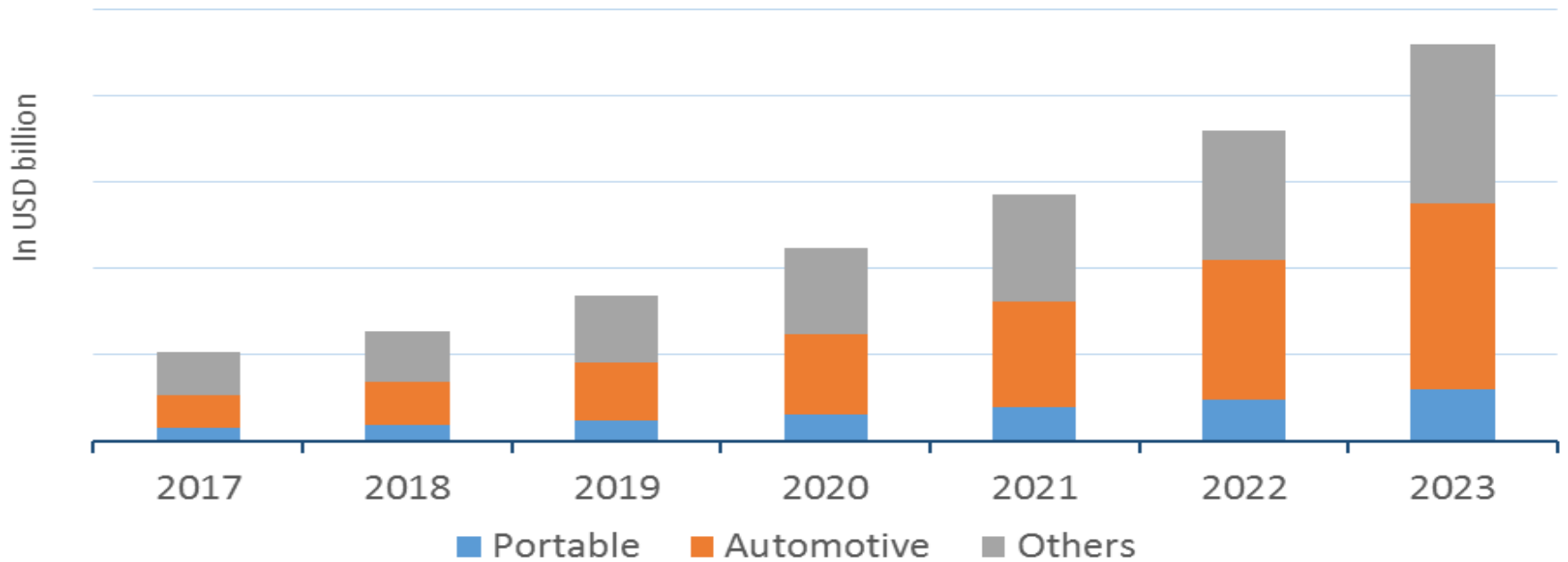


Lithium Battery

The India lithium-ion battery market is expected to grow at a robust CAGR of 29.26% during the forecast period, 2018-2023.

Lithium-Ion batteries are primary batteries in which lithium compound acts as an anode. A lithium cell can produce voltage from 1.5 V to about 3 V based on the types of materials used. These batteries have a potential to achieve very high energy and power densities in high-density battery applications such as electronics, automotive and standby power. Lithium-ion batteries are now widely implemented as the power or energy source for everything from portable electronics to electric vehicles and energy & natural resources. Increasing adoption of smartphones, tablets, wearable's, toys, power tools, personal care devices, payment devices and digital cameras among users have led to an improved demand for lithium-ion batteries in India.

Lithium-ion Battery Market: Size and Demand Forecast in USD Billion, by Application, India, 2017-2023



Increase in disposable income has led to rise in demand for electronic devices such as smartphones and tablets fueling the growth of lithium-Ion batteries in the India. Moreover, rise in government initiative to reduce pollution level are the major factors driving the Indian lithium-ion battery market. Growth in automotive sector has led to surge in demand for electric vehicles which has also supplemented the growth of lithium-Ion batteries. However, high cost and risk of fire in electronic devices may hinder the market growth in the coming years. Growth in automobile industry and growing trend of electronic devices among youth consumers would increase the demand for lithium-Ion batteries in the near future.



The India lithium-ion battery market has been segmented on the basis of material type and industry vertical. By material type, the market is further segmented into cathode, electrolytic solution, anode, and other materials includes (binders, separators, and others). By industry vertical, the market is bifurcated into electronics (UPS, smart phones, laptops/tablets, and others), automotive (car, buses, and trucks, scooters and bikes, train and aircraft), industrial (mining equipment, construction equipment, smart grid), and other industry verticals.

India has set itself an ambitious target of having only electric vehicles (EV) by 2030, which is expected to increase the demand for lithium-ion batteries in India, significantly. The high cost, associated with batteries that are used in the electric vehicles, is considered to be critical for India's ambitious target. To counter this, the Government of India is planning to set up lithium-ion battery manufacturing units in India.

The Global Lithium-Ion Battery Market size is expected reach \$46.21 billion by 2022, with a CAGR of 10.8% during the forecast period (2016-2022). Lithium-ion (Li-ion) batteries are rechargeable batteries with high energy density and are mainly used in portable equipment. The market for these batteries is expected to witness a significant growth owing to their increasing use in smartphones, tablets/PCs, digital cameras, and power tools. Moreover, the demand for Li-ion batteries in the automobile industry is expected to increase with the increasing demand for electric vehicles. These batteries have gained popularity among the automobile manufacturers as they offer an alternative to nickel metal batteries used in electric vehicles, due to their small size and light weight.

Machinery Photographs



Belt Conveyor



Climbing Conveyor



Suspend Magnetic



Specialized Crusher

Project at a Glance

PROJECT AT A GLANCE

(in lacs)

COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existing	Proposed	Total	Particulars	Existing	Proposed	Total
Land & Site Development Exp.	0.00	10.00	10.00	Capital	0.00	135.14	135.14
Buildings	0.00	134.50	134.50	Share Premium	0.00	0.00	0.00
Plant & Machineries	0.00	225.93	225.93	Other Type Share			
Motor Vehicles	0.00	8.00	8.00	Capital	0.00	0.00	0.00
Office Automation Equipments	0.00	60.50	60.50	Reserves & Surplus	0.00	0.00	0.00
Technical Knowhow Fees & Exp.	0.00	20.00	20.00	Cash Subsidy	0.00	0.00	0.00
Franchise & Other Deposits	0.00	0.00	0.00	Internal Cash Accruals	0.00	0.00	0.00
Preliminary & Pre-operative Exp	0.00	2.00	2.00	Long/Medium Term Borrowings	0.00	405.41	405.41
Provision for Contingencies	0.00	21.00	21.00	Debentures / Bonds	0.00	0.00	0.00
Margin Money - Working Capital	0.00	58.61	58.61	Unsecured Loans/Deposits	0.00	0.00	0.00
TOTAL	0.00	540.55	540.55	TOTAL	0.00	540.55	540.55

Project at a Glance

Year	Annualised		Book Value	Debt	Dividend	Retained Earnings		Payout	Probable Market Price	P/E Ratio	Yield Price/Book Value
	EPS	CEPS				Per Share	Per Share				
1-2	4.64	9.06	14.64	24.00	0.00	100.00	4.64	0.00	4.64	1.00	0.00
2-3	7.46	11.31	22.10	18.00	0.00	100.00	7.46	0.00	7.46	1.00	0.00
3-4	10.30	13.66	32.40	12.00	0.00	100.00	10.30	0.00	10.30	1.00	0.00
4-5	13.05	15.99	45.45	6.00	0.00	100.00	13.05	0.00	13.05	1.00	0.00
5-6	15.71	18.28	61.16	0.00	0.00	100.00	15.71	0.00	15.71	1.00	0.00

Project at a Glance

Year	D. S. C. R.			Debt / Equity - Deposits Debt	Equity as-Equity	Total Net Worth	Return on Net Worth	Profitability Ratio					Assets Turnover Ratio	Current Ratio
	Individual	Cumulative	Overall					GPM	PBT	PAT	Net Contribution	P/V Ratio		
	(Number of times)			(Number of times)		%	%	%	%	%	%			
Initial				3.00	3.00						496.0	17.98		
1-2	1.33	1.33		1.64	1.64	3.48	6.80%	3.08%	2.27%		2	%	3.18	1.04
2-3	1.62	1.47		0.81	0.81	2.22	7.85%	4.69%	3.13%		7	%	3.41	1.18
3-4	1.97	1.62	1.97	0.37	0.37	1.46	8.57%	5.86%	3.78%		3	%	3.46	1.35
4-5	2.39	1.79		0.13	0.13	1.01	9.06%	6.69%	4.26%		8	%	3.39	1.53
5-6	2.90	1.97		0.00	0.00	0.72	9.40%	7.30%	4.62%		3	%	3.26	1.97

Project at a Glance

BEP

BEP - Maximum Utilisation Year	5
Cash BEP (% of Installed Capacity)	55.20%
Total BEP (% of Installed Capacity)	59.41%
IRR, PAYBACK and FACR	
Internal Rate of Return .. (In %age)	26.50%
Payback Period of the Project is (In Years)	2 Years 3 Months
Fixed Assets Coverage Ratio (No. of times)	17.913

Major Queries/Questions Answered in the Report?

- 1. What is E-Waste & Lithium Battery Recycling industry ?**
- 2. How has the E-Waste & Lithium Battery Recycling industry performed so far and how will it perform in the coming years ?**
- 3. What is the Project Feasibility of E-Waste & Lithium Battery Recycling Plant ?**
- 4. What are the requirements of Working Capital for setting up E-Waste & Lithium Battery Recycling plant ?**

- 5. What is the structure of the E-Waste & Lithium Battery Recycling Business and who are the key/major players ?**
- 6. What is the total project cost for setting up E-Waste & Lithium Battery Recycling Business?**
- 7. What are the operating costs for setting up E-Waste & Lithium Battery Recycling plant ?**
- 8. What are the machinery and equipment requirements for setting up E-Waste & Lithium Battery Recycling plant ?**

- 9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up E-Waste & Lithium Battery Recycling plant ?**
- 10. What are the requirements of raw material for setting up E-Waste & Lithium Battery Recycling plant ?**
- 11. Who are the Suppliers and Manufacturers of Raw materials for setting up E-Waste & Lithium Battery Recycling Business?**
- 12. What is the Plant Layout for setting up E-Waste & Lithium Battery Recycling Business?**

- 13. What is the total size of land required for setting up E-Waste & Lithium Battery Recycling plant ?**
- 14. What will be the income and expenditures for E-Waste & Lithium Battery Recycling Business?**
- 15. What are the Projected Balance Sheets of E-Waste & Lithium Battery Recycling plant ?**
- 16. What are the requirement of utilities and overheads for setting up E-Waste & Lithium Battery Recycling plant?**
- 17. What is the Built up Area Requirement and cost for setting up E-Waste & Lithium Battery Recycling Business?**

18. What are the Personnel (Manpower) Requirements for setting up E-Waste & Lithium Battery Recycling Business?

19. What are Statistics of Import & Export for Lithium Battery?

20. What is the time required to break-even of E-Waste & Lithium Battery Recycling Business?

21. What is the Break-Even Analysis of E-Waste & Lithium Battery Recycling plant?

22. What are the Project financials of E-Waste & Lithium Battery Recycling Business?

- 23. What are the Profitability Ratios of E-Waste & Lithium Battery Recycling Project?**
- 24. What is the Sensitivity Analysis-Price/Volume of E-Waste & Lithium Battery Recycling plant?**
- 25. What are the Projected Pay-Back Period and IRR of E-Waste & Lithium Battery Recycling plant?**
- 26. What is the Process Flow Sheet Diagram of E-Waste & Lithium Battery Recycling project?**

- 27. What are the Market Opportunities for setting up E-Waste & Lithium Battery Recycling plant?**
- 28. What is the Market Study and Assessment for setting up E-Waste & Lithium Battery Recycling Business?**

Table of Contents of the Project Report

1. PROJECT LOCATION

- 1.1. CITY PROFILE & GEOTECHNICAL SITE CHARACTERIZATION
 - 1.1.1. General
 - 1.1.2. Climate & Rainfall
 - 1.1.3. Language and Culture
 - 1.1.4. Map
 - 1.1.5. Transportation and Communication
 - 1.1.6. Economy and Industry

2. INTRODUCTION

3. WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE)

- 3.1. WEEE CATEGORIES
- 3.2. BATTERY CHEMISTRY AND DESIGN
- 3.3. WEEE COMPOSITION BY WEIGHT

4. RECYCLING OF E-WASTE

5. E-CYCLE COMPONENTS RE-USE

6. CLASSIFICATION OF E-WASTE

7. COMPOSITION OF E-WASTE

8. COMPONENTS OF E-WASTE

9. POSSIBLE HAZARDOUS SUBSTANCES PRESENT IN E-WASTE

- 9.1. COMPONENT POSSIBLE HAZARDOUS CONTENT
- 9.2. POSSIBLE HAZARDOUS SUBSTANCES IN COMPONENTS
- 9.3. GLYCOL, OTHER UNKNOWN SUBSTANCES

10. GENERAL FACTS ON E-WASTE

- 10.1. ECONOMICS
- 10.2. VALUABLE MATERIALS
- 10.3. HAZARDOUS MATERIAL

11. DEVELOPMENT OF A NATIONAL E-WASTE STRATEGY

- 11.1. EFFECTS ON ENVIRONMENT AND HEALTH THE HUMAN
- 11.2. AWARENESS
- 11.3. MATERIALS RECYCLED

12. MARKET SURVEY

- 12.1. INDIA'S E-WASTE GROWING AT 30% ANNUALLY

13. EXPORT& IMPORT: ALL COUNTRIES

- 13.1. EXPORT: ALL COUNTRIES
- 13.2. IMPORT: ALL COUNTRIES

14. WEEE MANAGEMENT IN INDIA

- 14.1. WEEE POLICY
- 14.2. REGULATORY REGIME FOR E-WASTE
- 14.3. INTERNATIONAL LEGISLATION

15. E-WASTE SITUATION IN INDIA

16. RAW MATERIAL DETAILS

17. PROCESS OF E-WASTE RECYCLING

17.1. STEP-BY STEP PROCESS

17.2. E-WASTE RECYCLING UNDER CONTROLLED CONDITIONS

18. FLOW DIAGRAM FOR E-WASTE RECYCLING

19. LITHIUM BATTERY RECYCLING

19.1. BATTERY CHEMISTRY AND DESIGN

19.2. PRIMARY LITHIUM BATTERIES

19.3. TYPICAL COMPOSITION OF A LITHIUM ION BATTERY

20. LITHIUM BATTERY RECYCLING PROCESS

21. FLOW DIAGRAM FOR LITHIUM BATTERIES RECYCLING

22. DO'S & DON'T IN E-WASTE RECYCLING UNIT

22.1. DO'S:

22.2. DON'TS:

23. ENVIRONMENTAL IMPACT OF LITHIUM ION BATTERY DISPOSAL

24. SUPPLIERS OF PLANT & MACHINERY

25. SUPPLIERS OF RAW MATERIAL

26. PHOTOGRAPHS/IMAGES FOR REFERENCE

- 26.1. MACHINERY PHOTOGRAPHS
- 26.2. RAW MATERIAL PHOTOGRAPHS
- 26.3. PRODUCT PHOTOGRAPHS

27. PLANT LAYOUT

28. QUOTATION OF PLANT, MACHINERY AND EQUIPMENTS FROM SUPPLIER

Project Financials

Project at a Glance	Annexure
• Assumptions for Profitability workings	1
• Plant Economics.....	2
• Production Schedule.....	3
• Land & Building.....	4
Factory Land & Building	
Site Development Expenses	

- **Plant & Machinery.....5**
 - Indigenous Machineries**
 - Other Machineries (Miscellaneous, Laboratory etc.)**

- **Other Fixed Assets.....6**
 - Furniture & Fixtures**
 - Pre-operative and Preliminary Expenses**
 - Technical Knowhow**
 - Provision of Contingencies**

- **Working Capital Requirement Per Month.....7**
 - Raw Material**
 - Packing Material**
 - Lab & ETP Chemical Cost**
 - Consumable Store**

- **Overheads Required Per Month and Per Annum.....8**
Utilities & Overheads (Power, Water and Fuel Expenses etc.)
Royalty and Other Charges
Selling and Distribution Expenses

- **Salary and Wages9**

- **Turnover Per Annum10**

- **Share Capital.....11**
Equity Capital
Preference Share Capital



- **Annexure 1 :: Cost of Project and Means of Finance**
- **Annexure 2 :: Profitability and Net Cash Accruals**
 - **Revenue/Income/Realisation**
 - **Expenses/Cost of Products/Services/Items**
 - **Gross Profit**
 - **Financial Charges**
 - **Total Cost of Sales**
 - **Net Profit After Taxes**
 - **Net Cash Accruals**

• **Annexure 3 :: Assessment of Working Capital requirements**

- **Current Assets**
- **Gross Working Capital**
- **Current Liabilities**
- **Net Working Capital**
- **Working Note for Calculation of Work-in-process**

• **Annexure 4 :: Sources and Disposition of Funds**

- **Annexure 5 :: Projected Balance Sheets**

- **ROI (Average of Fixed Assets)**
- **RONW (Average of Share Capital)**
- **ROI (Average of Total Assets)**

- **Annexure 6 :: Profitability Ratios**

- **D.S.C.R**
- **Earnings Per Share (EPS)**
- **Debt Equity Ratio**

• **Annexure 7 :: Break-Even Analysis**

- **Variable Cost & Expenses**
- **Semi-Variable/Semi-Fixed Expenses**
- **Profit Volume Ratio (PVR)**
- **Fixed Expenses / Cost**
- **B.E.P**

• **Annexure 8 to 11 :: Sensitivity Analysis-Price/Volume**

- **Resultant N.P.B.T**
- **Resultant D.S.C.R**
- **Resultant PV Ratio**
- **Resultant DER**
- **Resultant ROI**
- **Resultant BEP**

- **Annexure 12 :: Shareholding Pattern and Stake Status**

- **Equity Capital**

- **Preference Share Capital**

- **Annexure 13 :: Quantitative Details-Output/Sales/Stocks**

- **Determined Capacity P.A of Products/Services**

- **Achievable Efficiency/Yield % of Products/Services/Items**

- **Net Usable Load/Capacity of Products/Services/Items**

- **Expected Sales/ Revenue/ Income of Products/ Services/ Items**

- **Annexure 14** :: **Product wise Domestic Sales Realisation**
- **Annexure 15** :: **Total Raw Material Cost**
- **Annexure 16** :: **Raw Material Cost per unit**
- **Annexure 17** :: **Total Lab & ETP Chemical Cost**
- **Annexure 18** :: **Consumables, Store etc.**
- **Annexure 19** :: **Packing Material Cost**
- **Annexure 20** :: **Packing Material Cost Per Unit**

- **Annexure 21** :: **Employees Expenses**
- **Annexure 22** :: **Fuel Expenses**
- **Annexure 23** :: **Power/Electricity Expenses**
- **Annexure 24** :: **Royalty & Other Charges**
- **Annexure 25** :: **Repairs & Maintenance Expenses**
- **Annexure 26** :: **Other Manufacturing Expenses**
- **Annexure 27** :: **Administration Expenses**
- **Annexure 28** :: **Selling Expenses**

- **Annexure 29 :: Depreciation Charges – as per Books (Total)**
- **Annexure 30 :: Depreciation Charges – as per Books (P & M)**
- **Annexure 31 :: Depreciation Charges - as per IT Act WDV (Total)**
- **Annexure 32 :: Depreciation Charges - as per IT Act WDV (P & M)**
- **Annexure 33 :: Interest and Repayment - Term Loans**
- **Annexure 34 :: Tax on Profits**
- **Annexure 35 :: Projected Pay-Back Period and IRR**

Reasons for Buying our Report:

- **This report helps you to identify a profitable project for investing or diversifying into by throwing light to crucial areas like industry size, market potential of the product and reasons for investing in the product**
- **This report provides vital information on the product like it's characteristics and segmentation**
- **This report helps you market and place the product correctly by identifying the target customer group of the product**

- **This report helps you understand the viability of the project by disclosing details like machinery required, project costs and snapshot of other project financials**
- **The report provides a glimpse of government regulations applicable on the industry**
- **The report provides forecasts of key parameters which helps to anticipate the industry performance and make sound business decisions**

Our Approach:

- **Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years.**
- **The market forecasts are developed on the basis of secondary research and are cross-validated through interactions with the industry players**
- **We use reliable sources of information and databases. And information from such sources is processed by us and included in the report**

Scope of the Report

The report titled “Market Survey cum Detailed Techno Economic Feasibility Report on E-Waste & Lithium Battery Recycling.” provides an insight into E-Waste & Lithium Battery Recycling market in India with focus on uses and applications, Manufacturing Process, Process Flow Sheets, Plant Layout and Project Financials of E-Waste & Lithium Battery Recycling project. The report assesses the market sizing and growth of the Indian E-Waste & Lithium Battery Recycling Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line. And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:

- **Good Present/Future Demand**
- **Export-Import Market Potential**
- **Raw Material & Manpower Availability**
- **Project Costs and Payback Period**

We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in the E-Waste & Lithium Battery Recycling sector in India along with its business prospects. Through this report we have identified E-Waste & Lithium Battery Recycling project as a lucrative investment avenue.

Tags

E Waste Recycling Plant, E-Waste Recycling, E Waste Management, e Waste Recycling Plant in India, e-Waste Recycling Plant Cost, E-Waste Recycling Plant Project Report, Starting an E-Waste Recycling Plant, E-Waste Recycling Business, Electronic Waste, Business Setup for E-Waste Recycling, Electronics (E-Waste) Recycling, E-Waste or E-Scrap Recycling, Electronic Waste Management, E Waste Recycling and Recovery, Environment Friendly Electronic Waste Management, Electronic Waste Recycling, E-Waste Management, Electronic Waste (E-Waste) Recycling & Disposal, Disposal of Electronic Waste (E-Waste), Electronic Waste Disposal, E-Waste (Electronic Waste) Recycling and Management, Battery Recycling, Recycling of Automotive Lithium-Ion (Li-Ion) Batteries, Lithium-Ion Battery Recycling, Battery Recycling Plant, E – Waste Management Project, e-Waste Management Project Report Pdf, Cost of Setting up E-Waste Recycling Plant in India, E-Waste Project Ideas, e-Waste Management Project in India, Lithium Battery Recycling Process, How to Recycle Batteries, Lithium-Ion Battery Recycling Industry,

Recycling the Hazardous Waste of Lithium Ion Batteries, Li-Ion Batteries Recycling, Battery Scrap Recycling, Project Report on Battery Recycling Industry, Detailed Project Report on E-Waste (Electronic Waste) Recycling, Project Report on Li-Ion Batteries Recycling, Pre-Investment Feasibility Study on E-Waste (Electronic Waste) Recycling, Techno-Economic feasibility study on Lithium-Ion Battery Recycling, Feasibility report on e-Waste Management, Free Project Profile on Lithium-Ion Battery Recycling, Project profile on Li-Ion Batteries Recycling, Download free project profile on E-Waste (Electronic Waste) Recycling, E-Waste & Lithium Battery Recycling, Recycling the Hazardous Waste of Lithium Ion Batteries, Lithium Battery Disposal & Recycling, Batteries & Electronic Waste, Electric, Electronic Waste and Batteries Recycling Business, Disposal of Batteries, Battery Recycling Industry

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Our Approach

Requirement collection

Thorough analysis of the project

Economic feasibility study of the Project

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Report Compilation

Contact us

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