

Amara Raja Energy & Mobility Ltd.

Future Focused

Saurabh Ved

VP Kolkata Meet – Dec 17, 2023



AMARA RAJA

Gotta be a better way

About ARE&M

- Amara Raja Energy & Mobility Limited (ARE&M), the flagship company of the Amara Raja Group, is one of the largest manufacturers of lead-acid Batteries for both industrial and automotive applications in India.
- Incorporated in 1985, the company over the years has expanded, diversified, and modernized operations with a wide range of products for the customers in both, domestic and International markets.
- In the year 1996 the company embarked on automotive batteries through a technical collaboration with Johnson Controls Inc and has continuously gained domestic market share since.
- The company exports to over 50 countries across the globe and is focused on expanding its footprint to more countries.

About ARE&M

- The company's flagship brands are 'Amaron' and 'PowerZone' which have a strong recall in the Indian domestic market and have received various accolades as well.
- Has 7 manufacturing facilities located in Andhra Pradesh
- ARE&M entered into the New Energy business in 2022 through Amara Raja Advanced Cell Technologies, which is a 100% subsidiary, and has laid out an ambitious capex plan of INR 9500 crore for setting up a Giga Corridor in Telangana.
- Geographical mix (FY23): Domestic ~ 88%, Export ~12%

Key Data

CMP	Rs. 765 (as on Dec 16, 2023)
Market Cap	Rs. 13071 Cr.
52 Week High/ Low	799/ 546
Lifetime High	1080 (August 2015)
P/E	16.3
P/B	2.3
Mcap to Sales	1.23
EV/ EBITDA	8.30
Dividend Yield	0.80%
Earnings Yield	8.6%
ROE	15% (Range: 12 - 19%)
ROCE	20% (Range: 15 - 42%)
Debt/ Equity	0.02
Promoter Holding	28.06% (Ramachandra Galla & Family)

Amara Raja Batteries Limited : Lead Acid Battery Business



ARBL

- ❖ 7 Battery Manufacturing Plants in two locations
- ❖ Largest Private Sector Employer in AP
- ❖ Strong work force with average age of 29 years

AUTOMOTIVE

- ❖ Leading Automotive Battery Brand
- ❖ Largest Exporter of 4W Batteries in India
- ❖ First AGM battery manufacturer for 2W

INDUSTRIAL

- ❖ First VRLA Battery Manufacturer in India
- ❖ Market Leader in Telecom.
- ❖ Largest Integrated Facility for MVRLA Batteries.
- ❖ Pioneered Battery Solutions for Indian Railways.

CURRENT CAPACITIES

4W Batteries

- Annualised Capacity: 19 Mn Nos

2W Batteries

- Annualised Capacity: 30 Mn Nos

Industrial Batteries

- Annualised Capacity: 2.3 Bn Ah



OPERATIONS AT A GLANCE



LEAD ACID BATTERIES



AUTOMOTIVE

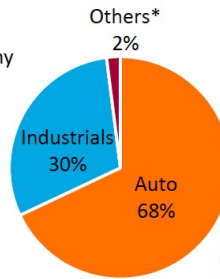
- **Applications** – 2W, 3W, 4W & CV's
- Largest Exporter of 4W Batteries
- First AGM battery manufacturer for 2W
- Setting up 1.5 LPTA of a lead recycling facility through the wholly owned subsidiary ARC SPL, which showcases its commitment to the circular economy
- Entered Lubricants segment

INDUSTRIAL

- **Application** - Telecom, Railways, Power Control, Solar, UPS
- Market Leader in Telecom sector
- **First** to introduce VRLA batteries in India
- **Largest** Integrated Facility for MVRLA Batteries
- Pioneered Battery Solutions for Indian Railways



FY23 REVENUE BREAKUP (%)



*Others predominantly includes New Energy business.

AUTOMOTIVE | INDUSTRIALS

- Li Cell and Pack Manufacturing
- EV Charging Solutions
- Energy Storage Solutions
- Developed India's First 21700 Cylindrical Cell (NMC 811)



NEW ENERGY BUSINESS

AMARON
LASTS LONG. REALLY LONG.

POWERZONE
BATTERIES & MORE

APPLICATIONS



MARQUEE CLIENTELE

AUTOMOTIVE

INDUSTRIAL

PASSENGER VEHICLE OEM CLIENTS



COMMERCIAL VEHICLE/TRACTOR OEM CLIENTS



TWO WHEELER OEM CLIENTS



INDUSTRIAL OEM CLIENTS



ARE&M Market Share

- Telecom ~ 60%
- UPS ~ 35%
- 4W OEM ~ 35%
- 4W Replacement ~ 35%
- 2W OEM ~ 15%
- 2W Replacement ~ 33%

- **Overall Market Share: 30 – 35%**

Lead Acid Battery

- Continues to be a reliable, cost efficient auxiliary power source for ICE vehicles, EVs & Hybrids
- Major requirement in:
 - Data Centres
 - Energy Storage Solutions
 - Telecom
 - Industrials
- Growing Export market
- This technology is also going to move from Flooded Lead Acid Batteries to AGM (absorbed glass mat) or EFB (enhanced flooded batteries) to Lithium Ion 12V batteries over time.

BATTERIES READY FOR YOUR JOURNEY.

[VIEW ALL PRODUCTS](#)

Explore our battery technologies that deliver sustainable, next-generation performance.



FLOODED

After 130+ years of lead acid battery development, we have refined the design for consumer confidence.



[FLOODED BATTERIES >>>](#)



AGM

Advanced performance batteries meeting today's demands—including start-stop technology and comfort features.

[EXPLORE AGM BATTERIES >>>](#)



LITHIUM-ION

Managing the various, high electrical loads and usage demands, while effectively meeting regulatory requirements.

[EXPLORE LITHIUM-ION BATTERIES >>>](#)



SMART

An intelligent battery system for all vehicle types that communicates critical information in real time.

[EXPLORE SMART BATTERIES >>>](#)

New Energy Business – What we know

- In November 2022, established Amara Raja Advanced Cell Technologies (ARACT), which is a wholly owned subsidiary. Transferred its existing Pack and Charger business to ARACT.
- Company plans to invest up to Rs 9,500 crore towards its subsidiary ARACT to create the Amara Raja Giga Corridor (ARGC)
- Setting up a gigafactory in Divitipally, Telangana to produce lithium cells and battery packs, MoU signed with Government of Telangana
- Phase 1 will require 1200 - 1500 crore, which will come from internal accruals

New Energy Business – What we know

- ARACT is creating a portfolio of 0.5Kwh to 21.0Kwh products catering to e-mobility and energy storage applications in India.
- Received AIS 156 certification for 3W battery packs
- Introduced new IP-67 rated packs for 2W and 3W applications along with commercial supplies
- Developed 2KWh battery pack for 2W application and 10.2KWh battery pack for 3W application
- Received approval for 5KWh packs for telecom application from BSNL

New Energy Business – What we know

- Research facility: It has invested in a state-of-the-art R&D pilot plant for prototyping Li-ion cells which will be a corner stone facility to develop futuristic technologies.
- At this facility, the team has successfully designed and developed Nickel-rich 21700 NMC cylindrical cell (NMC 811) – process standardization + scalability + efficiency is the highest in this format
- There is reportedly a surge in demand for lithium-ion batteries for 2-wheeler and telecom applications

New Energy Business – What we know

- Has a 11.3% stake in Bengaluru-based startup Log9 Materials, which is indigenously developing rapid charging batteries for two- and three-wheelers.
- Log9 Materials is an IIT Roorkee incubated venture and is also working on cutting-edge battery technology
- Plans to expand lithium-ion battery cell capacity to 1 GWh in the next 6 months and to 2 GWh in the next 15-18 months
- Has introduced Type 6-Bharat LEV fast charging across its new battery platforms in the two and three-wheeler space, promoting interoperability through the Bharat Charge Alliance initiative
- Log9 makes cells—one rated 3.2V 50Ah and the other 2.3V 50Ah – working on LTO and LFP chemistry cells

Particulars	Quarter ended			Half-year ended	
	30.09.2023	30.06.2023	30.09.2022	30.09.2023	30.09.2022
	Unaudited	Unaudited	Unaudited	Unaudited	Unaudited
A. Segment revenue (Revenue from Operations):					
Lead acid batteries and allied products	2,808.94	2,687.79	2,638.45	5,496.73	5,227.92
Others	150.40	107.72	62.02	258.12	93.08
Revenue from operations	2,959.34	2,795.51	2,700.47	5,754.85	5,321.00
B. Segment results					
Lead acid batteries and allied products	275.67	238.44	262.79	514.11	428.26
Others	11.56	4.20	(2.41)	15.76	(3.32)
Total Segment Results	287.23	242.64	260.38	529.87	424.94
Add / (Less) :					
Other un-allocable income net of un-allocable expenditure	22.57	15.54	14.95	38.11	27.91
Total Profit before tax	309.80	258.18	275.33	567.98	452.85

2 Segment Composition : Lead acid batteries and allied products comprise manufacture and trading of lead acid batteries and allied products, Others primarily includes new energy business.

NEW ENERGY BUSINESS : THE FUTURE GROWTH ENGINE

150 GWH

- India's electrification demand expected to be 150GWh by 2030
- Adoption across user segments like Mobility Telecom and Data Centres
- Significant market share gain opportunity

**ARE&M'S
FORAY IN
NEW
ENERGY
SOLUTIONS**

Li Cell and pack
Manufacturing

EV Charging
Solutions

Energy Storage
Solutions

POLICY PUSH

- Financial subsidies including manufacturing subsidies valued 50,000cr +
- High customer pull for EVs ensuring market expansion in specific segments as a near given

COMPLETED AMARA RAJA POWER SYSTEMS LIMITED(ARPSL) ACQUISITION

- WOS effective from September 29, 2023
- Expected to strengthen charging solutions offerings

ROADMAP FOR CAPITALISING ON THE NEW ENERGY BUSINESS



PLANNED A GIGA CORRIDOR IN DIVITIPALLY, TELANGANA

- Setting up E+ve Energy Labs: a unique innovation & research facility, Hyderabad, Telangana
- Land allotment completed, spread across 262 acres at Divitipally, Telangana
 - Customer Qualification plant
 - **16 GWH** Cell Capacity over the next 10 years
- Phase 1 commercialization expected by FY26

AMARON^{e+}



GROWTH STRATEGY

LEAD ACID BATTERIES

AUTOMOTIVE (DRIVE EFFICIENCY)

- Cost efficiencies with **ASG/MSG technologies.**
- Deepen the market presence
- **Leverage the channel network** for distributing other allied products

INTERNATIONAL (EXPAND PRESENCE)

- Global manufacturing foot print to avoid tariff barriers
- Expand presence **to Europe and American Markets**
- Deepen presence in SE Asia, West Asia and African Markets

INDUSTRIAL (ENERGY SOLUTIONS)

- Maintain dominant market leadership in Telecom and UPS
- **Capitalize on 5G rollout**
- Build Capabilities for Battery Energy solutions by offering Chemistry Agnostic Solutions
- Expanding to Newer Geographies /Markets

NEW ENERGY SOLUTIONS

TECHNOLOGY

- **Establish E+ve Energy Labs**, a unique innovation & research facility, Hyderabad, Telangana to **build in-house competency** in cell technology development
- Build **strategic technology partnerships.**
- Create best-in-class product portfolio for both EV and ESS

CUSTOMERS

- Leveraging ongoing customer relationships and **codevelop custom built products** for Mobility and Stationary storage segments.
- Current Customers: Piaggio, Mahindra, Omega SEKI, Indus Towers, BSNL etc.

SUPPLY CHAIN

- Build **strategic vendors base** for capital Equipment and Critical Raw Materials
- Support initiatives for **strengthening domestic Supply Chain**

TALENT






- Recruitment of **global talent** including subject matter experts
- Build deep tech expertise in Technology, Supply Chain and Operations
- To **promote Diversity & Inclusion**

Market Potential and Market Fit : Indian Market ~ 150 Gwh



Market Fit





Market Potential by FY 30

Pouch		-----
Prismatic		
Cylindrical		
	NMC	LFP

Application	Potential in GwH
LEV	45 to 50
PV	50 to 55
CV	15 to 25
Storage	20 to 30
Total	130 to 160

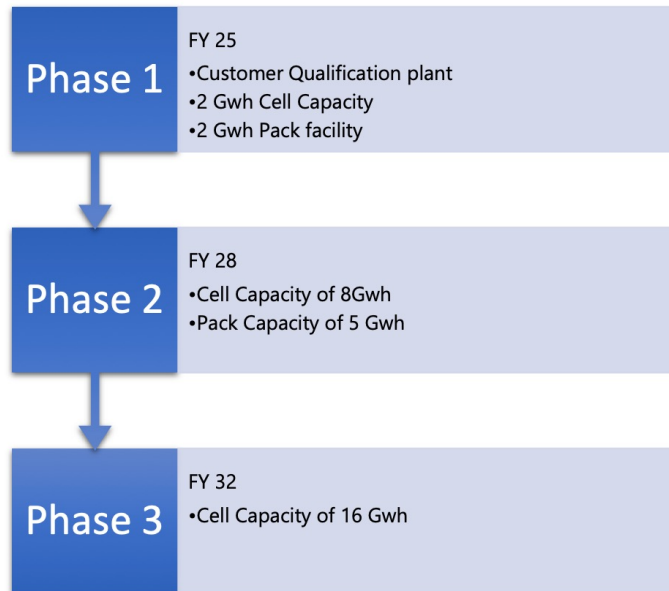


EV Chargers

	Off Board Charger	AC Charger	DC Fast Charger	12Channel Battery Swapping Station
				
Input supply	150 to 280VAC	230VAC/415VAC	415VAC	415VAC
Output	48-59VDC	230VAC/415VAC	200-1000 V DC	42-58VDC
Range	500W to 3000W	3 KW to 22KW	30 KW to 300KW	Max. Power of 20KW
Conversion details	AC to DC Conversion	No Power Conversion	AC to DC Conversion	12 Nos of 1.9kWH Batteries
Application	Off Board Charger supplies DC power to E-2Wheelers & 3 Wheelers	Supplies controlled AC power supply to the On Board Charger for E-4 Wheelers	DC Fast Charging of E-4 Wheelers	To Charge E- 2/3 Wheeler batteries of 1.9kWHr Swappable Batteries



Giga Corridor Roadmap: Divitipally in Telangana



Right to Win in Li-on

- Deep Design Expertise – providing energy density, thermal stability and functionality
- In house BMS Capability – ability to customize as per customer specifications
- Quality manufacturing – near 100% automated processes
- Economies of scale – highly scalable processes at competitive costs
- Efficiency – Chinese players have taken 6-8 years to mature technology at a commercial scale
- Securing supply – raw material side supply chain challenges

Demand & Growth Drivers

Lithium-ion demand (GWh) in India by 2030

	2025	2030
Mobility		
2Ws	10 - 12	40 - 45
3Ws	1.2 - 1.7	5 - 6
4Ws	4 - 5	40 - 45
LCV / HCV	0.9 - 1.2	3 - 4
Buses	1 - 1.5	4 - 5
Tractors	1 - 1.5	6 - 7
Mobility Total	20-30	100-110
Stationary	20 - 25	50 - 60
Total	40 - 50	150 - 160

Key growth drivers



Strong policy & regulatory support

- Auto PLI
- State EV policies
- FAME extension



Market adoption drivers across user segments

- 2W & 3W: Personal, B2B, e-commerce
- 4W: Personal, taxi fleet
- CV: Last mile connectivity
- Renewables: Increased Government focus
- Telecom: 5G roll-out

Innovations in the battery industry affect all cell components.

Common battery chemistries and form factor available

	2010s		2020s		2030s	
1 Cathode	LCO ¹	LMO ² LFP ³ NMC ⁴ /NCA ⁵	LFP ³ NMC ⁴ /NCA ⁵	LFP ³ NMC ⁴ /NCA ⁵ LMFP ⁶ /LMNO ⁷	NMC ⁴ /NCA ⁵ LMFP ⁶ /LMNO ⁷ Sulphur	LMFP ⁶ /LMNO ⁷ Sulphur
2 Separator/ electrolyte	Polymer/liquid	Polymer/liquid	Polymer/liquid	Polymer/liquid	Polymer/liquid Advanced liquid Semi-solid	Advanced liquid Semi-solid Solid
3 Anode	Graphite	Graphite	Graphite	Graphite Graphite and silicon	Graphite and silicon Lithium metal Silicon anode	Lithium metal Silicon anode
4 Casing	Cylindrical	Cylindrical Pouch	Prismatic Cylindrical Pouch	Prismatic Cylindrical Pouch	Cylindrical Pouch Prismatic	Cylindrical Pouch

¹Lithium cobalt.

²Lithium manganese oxide.

³Lithium, iron, phosphate.

⁴Lithium, manganese cobalt.

⁵Lithium, nickel, cobalt, aluminum oxide.

⁶Lithium manganese iron phosphate.

⁷Lithium, manganese nickel oxide.

Source: McKinsey Battery Insights, 2022

ARE&M Other Notes

- Asset turns have come down from 8x to ~3x
- Amara Raja is in talks with Walmart and Amazon to manufacture private-label batteries for the US, LATAM and other regions
- Margins have been compressed due to lead prices
- Investing Rs 400 crore to set up a recycling unit that will recover 150,000 tonnes of lead - this will help the company meet 30% of its requirement every year.
- The priority is to boost the share of international sales from 13.3% in the FY23 to 50% in the next 5-7 years.
- Management committed to tripling their revenue from \$1.2 billion to \$3 billion in 6-7 years
- Next generation of leaders taking over - Harshavardhana Gourineni (Batteries business) and Vikramadithya Gourineni (New Energy)

Management Commentary

Aditya Jhawar:

Sir the next question is if you can set reminders on timeline of our CAPEX spend for the Gigafactory, you mentioned that FY26 we will have 2 gigawatts and overall we have a plan of about 16. So, how is the CAPEX spend plan in over the next few years and how are we thinking about funding?

Y Delli Babu:

As far as new energy business is concerned as I have articulated earlier, there are three major projects. One is setting up our research hub which is happening near the Hyderabad International Airport and then there is the second one which is the customer qualification plant which is to make all the form factors and chemistries at a mega scale so that that can be extrapolated to a giga scale in the gigafactory and 3rd is the first 2 gigawatts over NMC line that we want to put up where we are looking at starting the commercial production sometime in FY26. That is the current target that is there in place. Towards these three projects the initial outlay to be spent over next two to three years' time frame is about 1500 odd crores, which we think in FY24 we have completed the land acquisition and the construction have just started. So, we may have to spend in FY24 of another 100 to 150 odd crores and then next year the equipment purchase and all other things the orders are getting placed now so we will have another 500 to 600 crores CAPEX being spent next year and the similar amount thereafter, that is the plan as far as the new energy is concerned. As far as lead acid battery is concerned I think we will continue to have a regular CAPEX of about 150 odd crores and then there is another 200 to 300 crores of line expansions that we will do in our existing practice and any new Greenfield if at all there is Greenfield capacity requirement comes up at that time I will update you if there is further CAPEX requirement is going to be there on.

Management Commentary

See, from overall capital allocation point of view years how we should think is definitely a question that we grapple with on a daily basis because the investments into the new energy business are quite sizable and it is also not necessary that the entire additional cash accrual of the legacy business will be totally used for this CAPEX either to put up CAPEX for the legacy business or for the new energy business. At certain point of time when there is how do we fund the new business, what is the right debt and equity mix that should be there for the new energy business is a decision that we constantly evaluate. At this point of time, our idea is we should invest the initial risk capital and then make significant progress on some of the milestones that we have set for ourselves, once we do that, then definitely the capital allocation decision is a matter of time. I think each quarter we need to review these decisions and accordingly the decisions have to be taken. I do not think I can say any particular formula for it at this point of time.

Opportunities

- Transportation
 - 2 wheelers
 - 3 wheelers
 - Passenger vehicles
 - Commercial vehicles
 - Railway
 - Marine
 - Off Highway Equipment
 - Defence
- Industrials & Utilities
 - BESS (Battery Energy Storage System)
 - EV Charging
 - Telecom
 - Data Centres
 - Renewable Integration
 - Hybrid power generation
 - Microgrids

Why I like ARE&M

- Good quality business at reasonable valuations, and it looks like the market is significantly discounting their terminal value because of the move from ICE to EVs
- Long term play where we're getting the business cheap, plus the optionality of the new energy business
- Growth in the legacy low voltage battery business - this technology is also going to move from Flooded Lead Acid Batteries to AGM (absorbed glass mat) or EFB (enhanced flooded batteries) to Lithium Ion 12V batteries over time.
- Tailwinds for lead acid battery demand in the medium term

Why I like ARE&M

- Clarios (Johnson Controls) stake was a major overhang, which is over
- Wider export market, post dissociation with Johnson Controls
- Log9 can be another optionality
- Mergers being done at reasonable valuations - 7x EV/EBITDA for Mangal, 6.5x for Amara Power Systems. Will also help increase promoter stake.
- Several growth drivers – Telecom (5G Rollout), Data Centres (Data Localization), Exports etc

LAW III: Options Have Value

I don't mean the options traded on the Chicago Board of Exchange or other exchanges. I mean looking at securities in terms of their option component.

The simplest example is probably an oil company. It will have two components of value. One is the value of existing properties, which generate cash flows. You can calculate the present value of those cash flows, which will decline as the producing wells give out. The other component of value of an oil stock is the call option you have on the chance that the company will find a major new field. That bit of luck would create new value for stockholders.

The theoretical worth of the company is the sum of the value of existing production and the call option. It is very pleasant to find a stock that can be bought for the value of existing properties, so that the exploration option is free. It is even pleasanter if you can find a stock whose existing properties can be bought for *less* than the value of their present and future cash flows, again getting a free lottery ticket on some new product or other upside potential. An option is basically just that—a lottery ticket—and there's no sense in refusing a lottery ticket if you don't have to pay for it.

Sometimes you are asked to pay a great deal for those options; biotech stocks are a prime example. In a highly speculative market, people pay a great deal of money for the privilege of a claim on future success.

Usually, stocks have some kind of discernible option attached, but in other cases it is negligible, uninteresting, or at least very hard to find. And there are cases where the option seems to be more of a put option than a call option; the option component has a negative value. Tobacco stocks are an example. The cash flow from the cigarette business is stable and valuable, but there is a risk that regulatory or legal action will wreck the business. The stock price can be calculated as the value of the cash flow minus a put option.

Or both a call and a put option may be present. A drug company

RALPH WANGER

may be working on a new product that could turn into a huge success or trigger a product lawsuit that results in an enormous drain on earnings.

I have found it very helpful to analyze companies this way—to look at the stock world as a collection of measurable values with options attached.

Key Risks

- Accelerated EV transition to limit growth in the base (lead-acid battery) business
- Yet to on-board a technology partner for larger capex play in the new energy (Li-On) space
- Heightened competition – no barriers to entry
- OEMs working on their own production
- Multiple chemistries, multiple technologies

Key Risks

- Rise in Lead metal prices to limit margins and profitability
- Pending pollution case with Andhra Pradesh Pollution Control Board (APPCB)
- Jaydev Galla's political affiliations
- Capex plan may require leveraging of Balance Sheet



Thank you