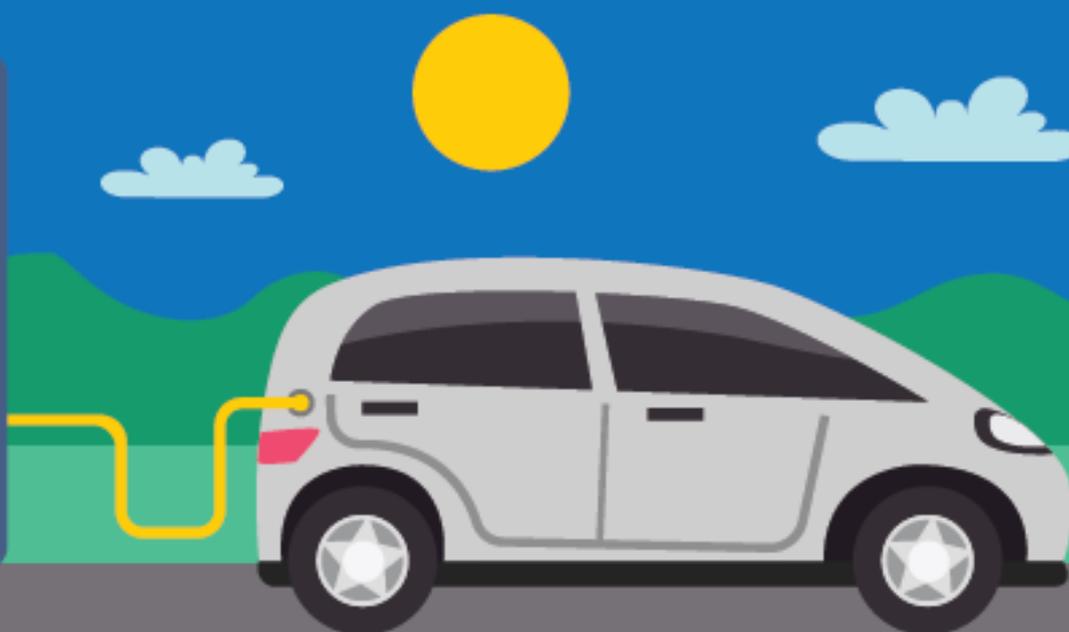


Strategizing for E-mobility Opportunities in India

A Guide for Indian Corporates

May 2019



By: EVNext, a division of EAI

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Preface

Electric vehicles are not new – neither worldwide nor in India.

What's new is the renewed thrust on their adoption.

Until about 2016, electric vehicles had remained a small fringe of the overall automobile industry, more a fancy item for the “statement makers” than a serious competitor to ICE engines.

It appears that this is about to change.

A combination of factors - lower costs of and better technologies, increasing trend in cost of crude oil, a serious emphasis worldwide to curb vehicular CO₂ emissions - are contributing to the growth of the electric vehicle sector.

In India, a similar trend is seen. While overall market volumes for electric vehicles are still very low for all types and segments, it is being hoped that the country will witness dramatic growth in the sales of electric vehicles starting 2018. The reasons for the optimism are similar to the ones noted above.

All said, electric vehicles seem to have arrived in India, or at least such a moment appears round the corner as we review the industry in early 2010. And this has made many businesses and entrepreneurs keen on the opportunities emerging from the electric vehicle sector.

Besides newspaper reports, very little is known in depth about the specific opportunities along the electric vehicles value chain, especially in the Indian context. This White Paper – ***Strategizing for E-mobility Opportunities in India from EAI*** - hopes to fill this gap by providing a white paper that identifies and evaluates a range of opportunities along the entire EV value chain.

We hope this concise document serves as a useful and practical guide for entrepreneurs and businesses keen on venturing into this domain.

Thank you and all the best!

Narasimhan Santhanam
Cofounder & Director, EAI
Chennai, May 2019

Background

It's quite apparent for all Indian businesses that e-mobility will transform many aspects of the Indian automotive and transport sectors by 2030 and beyond. What however most of them find difficult is to lay down a clear strategy of how to benefit from this significant transformation.

This white paper from EVNext, the E-mobility research & consulting division of EAI, reviews the electric vehicle value chain in a detailed manner and lays out an opportunity identification template for Indian corporates.

Objective

The objective of this white paper is to provide a strategic toolkit for decision making for the top management of Indian companies, especially those in auto, electrical, power and energy sectors. We are hopeful that this toolkit will enable them to take their next concrete steps in investing into e-mobility.

1. Current Status of EV Industry in India

1.1 Current Market Sizes of Electric Vehicles in India

First off, it will be instructive to look at some EV statistics for India and comparable global data.

Vehicle Type	India	World
EVs (sales, 2017)		
Electric bicycles	10,000	35 million (almost 95% in China)
Electric scooters	40,000 - 50,000	15 million (most of them in China)
Electric motorcycles (high power motorcycle)	<1000	0.1 million
Electric 3 wheelers (all variants)	2,50,000 - 3,00,000	2 – 3 million (EAI estimate)
Electric Cars	2000 - 3000	1.2 million (includes 0.4 million hybrids)
Electric buses	< 300 (EAI estimate)	250,000 (mostly in China)
EV Charging Infra (total installed, mid 2018)		
Normal AC Public Charging Points	400	300,000
DC Fast Charging Points	150	200,000

*: EAI estimates; Rest are estimates from diverse sources

Table 1: Electric Vehicle and Charging Station Sales in India and World

Except for electric three wheelers, where India might have a reasonable share of the global market, it can be seen from the table above that India's contribution to the global EV market is currently insignificant.

We are at the very beginning of e-mobility in India.

1.2 Challenges to EV Growth in India

The electric vehicles sector is in the nascent stage all over the world, but in many developed countries, the growth of this sector is much faster than what it is in India. Here are the key challenges to EV growth in India.

Category	Challenge	Analysis of the Challenge
Cost	<p>High Cost of EVs - EVs cost almost 50% more than equivalent conventional vehicles (mainly owing to cost of batteries)</p> <ul style="list-style-type: none"> Li-ion batteries cost around \$250/kWh currently, needs to go down to about \$100/kWh for cost parity 	<ul style="list-style-type: none"> Timeframe – Significant cost reduction (50-60%) for EV cost parity will take until about 2026 Alternatives – Lead acid batteries can be used for smaller vehicles Control – India has little control over the Li-ion battery cost as the country does not produce the battery cells currently and is unlikely to be a price setter in the foreseeable future
Performance	<p>Limited Range of EVs</p> <ul style="list-style-type: none"> Most EV ranges today are 50-75% lower per charge, compared to the range achieved for a full tank on a conventional vehicle. 	<ul style="list-style-type: none"> Timeframe – Range of Li-ion batteries needs to increase by 75-100% for EVs to be used for inter-city travel. This could take until about 2024 for non-premium EVs. Alternatives - An extensive charging (or battery swapping) infrastructure could partially take care of the range challenge, but public vehicle charging infra in India is practically non-existent, and getting a reasonable extent of urban charging infrastructure in key cities alone could take 5 years (until 2024) Control – While the Indian government or industry has only limited control over the technology improvements to increase range, they have reasonable control on deploying public charging or battery swapping infrastructure
	<p>High Charging Time for EVs</p> <ul style="list-style-type: none"> Normal charging could take 4-8 hours for full charge Fast charging could be completed in about 1 hour in many DC fast charging points, with 80% charge being completed in 30-40 minutes. 	<ul style="list-style-type: none"> Timeframe - For a charging time of 15 minutes or less, even DC fast charging needs a decrease of about 50% in charging time. It could take until 2025 for affordable mass market DC fast chargers in India. Alternatives <ul style="list-style-type: none"> Battery swapping Control - The government or Indian industry has little control over technology to bring down charging time, as the core technologies for these are developed outside the country

Table 2: Key Constraints & Challenges to EV Growth

In short, it could take until about 2025 for most of the key challenges to EV growth to be resolved, and the Indian industry or government has only limited control over the solutions to these challenges.

1.3 How well do EVs Cater to Indian Market Needs?

1.3.1 Generic Needs for the Indian Automobile User

Let's briefly consider the needs of the Indian automobile end user.

Need or Pain Point	Relevant Market Segments
Price of vehicle	The most dominant need for most non-premium market segments
Running cost	The second most dominant need for most consumer mass market segments
Performance	An important need for premium, specialty and long distance vehicle segments
Custom features	Important only for select vehicle types
Cool factor (includes "go green")	Important only for premium segments

Table 3: Needs/Pain Point for Relevant Market Segment

1.3.2 Aspects for which EVs Satisfy Market Needs

- EVs fully satisfy two of the four key needs or pain points quite well – Running cost and the Cool Factor.
- EVs partially satisfy the "performance" needs. We say partially because while EVs do well on pickup, speed and being noiseless, their long charging time and limited range per charge bring them down on performance.

1.3.3 Aspects for which EVs do not Satisfy Market Needs

It is on price that EVs face their biggest challenge - as is well known, EVs today do not satisfy the need for a vehicle at an affordable price. EVs cost between 40% - 80% higher than their conventional equivalents. The main reason for the high cost is the battery. Which is why, while vehicles using lower cost Lead Acid batteries cost perhaps 25-30% higher, vehicles using the more expensive Li-ion batteries could cost 50% or higher. In fact, electric buses (almost all of which run on Li-ion batteries), cost over 100% than their fossil fuel equivalents.

1.4 Predictions for the Growth of Indian EV Sector

Automobiles comprise a diverse set of vehicles - from a sub Rs 30,000 TVS XL for the lower middle class segment all the way to Volvo buses used by large corporates that could cost up to a crore. Such diversity in products and end users implies that predictions for EVs will also have high diversity.

For instance, it is commonly accepted that electric two wheelers and three wheelers have a stronger short term business case for growth compared to electric cars or heavy commercial vehicles. Interestingly, electric buses are also likely to have a better business case than electric cars in the short term, even though an electric bus could cost up to Rs 2 crores, almost three times that of an equivalent fossil fuel driven bus.

Considering all the factors and dimensions, the following are EVNext team's overall inferences on the electric vehicles for India for the 2020-2030 period:

Overall:

- Expect the growth of the electric vehicle sector to be low-moderate in the 2020-2025 period.
- Expect significant acceleration post 2025, with real contribution EVs coming closer to 2030.

2020 – 2025 - During 2020-2025, 3-wheelers will continue showing good growth, and 2-wheelers will show CAGRs in the 20-30% range. The LCV sector could see moderate growth too during this period. Depending on how the Service/OPEX Model pans out, buses could also have moderate growth. Expect low growths for electric cars & electric HCVs during this period.

2025 – 2030 - The 2025-2030 period could see a growth acceleration across all sectors, with the acceleration being significant for two wheelers, buses and LCVs. We expect growth in electric cars during this period to still be low or modest, with contributions still around 1% or less of the total annual car sales.

The Indian EV ecosystem and the opportunities that it brings along will evolve in sync with the above trends. The following sections provide more details on these opportunities.

2. E-mobility Opportunities 2020-2030

A number of our clients, when they approach EVNext, have this question: We know EVs are the future, but we are not sure which part of the value chain we should invest in?

And we tell them that a logical way to figure this out is to undertake a comprehensive review of the EV value chain components, and rate each of these components on key operational and strategic parameters. Such an analysis will provide them with a shortlist of opportunities that are more relevant to them.

The starting point hence is a comprehensive review of the EV ecosystem.

2.1 Value Chain for the Electric Vehicle Ecosystem

Electric Vehicle Battery Value Chain (for Li-ion Batteries)

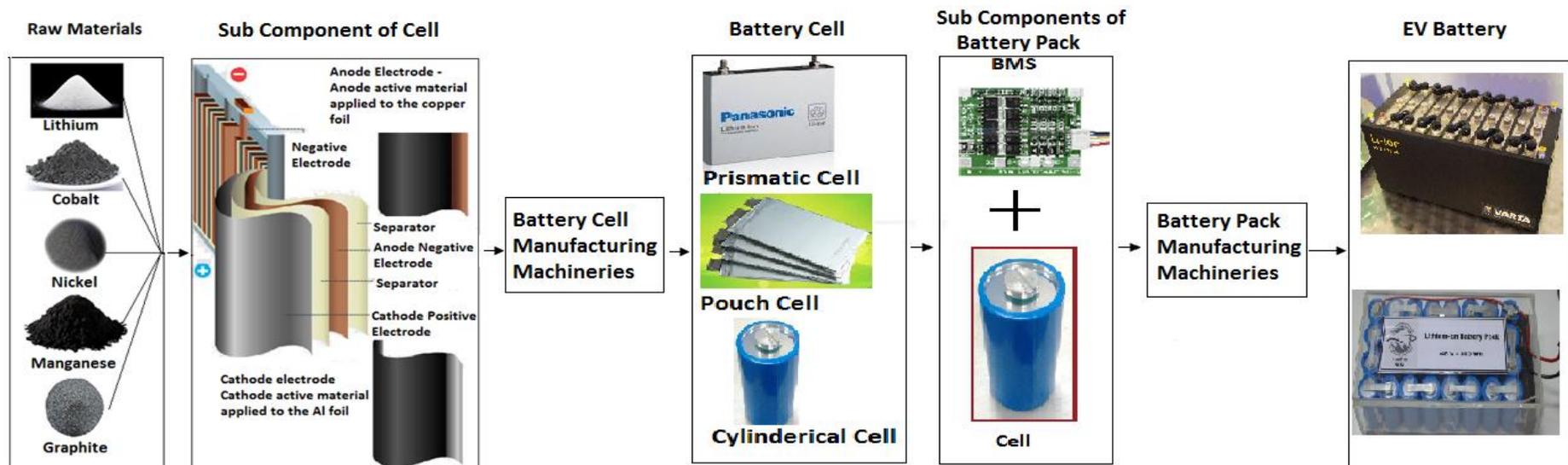


Figure 1: Electric Vehicle Battery Value Chain

Electric Vehicle & Battery Charging/Swapping Value Chain

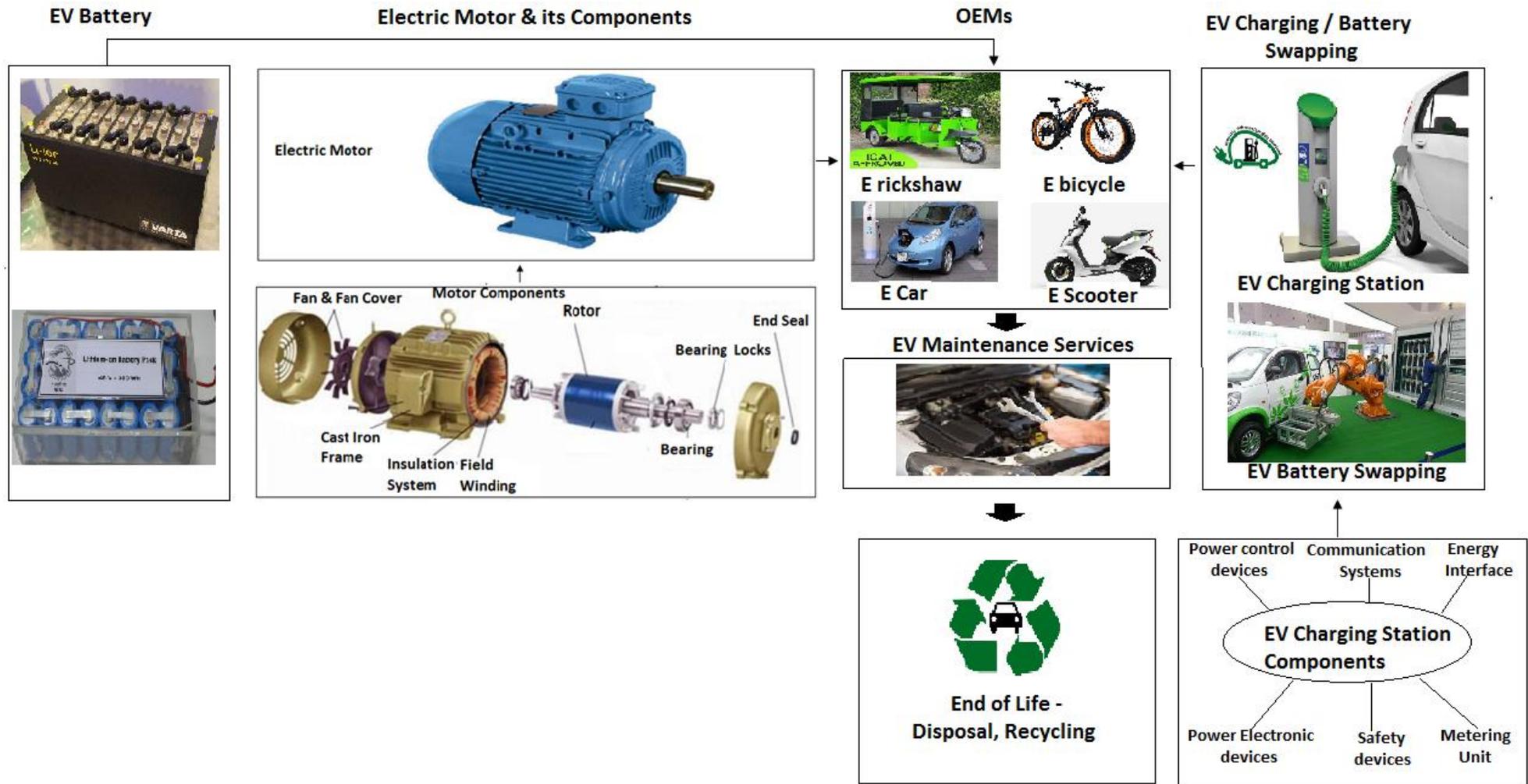


Figure 2: Electric Vehicle Value Chain

2.2 Evaluating the Opportunities

To identify opportunities that are ideal for you, our recommended approach would be to evaluate the components of the EV value chain. While there are parameters specific to your company that you might wish to evaluate these components on, we have provided a start by evaluating all the value chain components on key parameters that will be relevant for all companies.

- **Growth potential:** To start with, we provide an estimate of potential of each of the components in the short, medium and long term.
- **Characteristics of the opportunity:** We next provide details of the characteristics of each component on aspects such as Investments Required, Competition etc.
- **Requirements for success:** We finally provide insights on what's needed for companies to benefit from each of these opportunities.

2.3 Potential for EV Opportunities

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- **Requirements for success:** We finally provide insights on what's needed for companies to benefit from each of these opportunities.

Let's start with a review of the EV value chain and infer on the opportunities for each part of the value chain, and the expected growth potential for each of these for 2020-2030 and beyond.

The inferences for the potential are based on EVNext's analyses of the trends and the interactions we have had with diverse stakeholders in the industry. These efforts were undertaken as part of our consulting and research activities for the Indian e-mobility sector.

2.3.1 Expected growth of EV value chain components in three periods

L: Low (<10% CAGR); M: Moderate (10-25% CAGR); H: High (>25% CAGR)

Details	2019-2025	2025-2030	>2030
Raw Materials			
Lithium, Cobalt, Nickel, Manganese, Graphite	L	L-M	M-H
Sub-components			
Anode for Li-ion batteries	L	M	H
Cathode for Li-ion batteries	L	M	H
Separators & Electrolyte for Li-ion batteries	L	M	H
Motor Components	L	M	H

Details	2019-2025	2025-2030	>2030
Components			
Motors	L-M	M-H	H
Battery cells	L-M	M-H	H
Battery packs	L-M	M-H	H
EV charging station components	M	M-H	H
EV swapping station components	M	H	H
End Products			
Electric bicycles	L	L-M	H
Electric scooters	M	H	H
Electric motorbikes	L	L	M
Electric 3 wheelers	H	M	M
Electric cars	L	L-M	M-H
Electric buses	M	M-H	H
Electric LCVs	M	H	H
Machinery			
Li-ion battery cell making machinery	L	M-H	H
Li-ion battery pack making machinery	M	H	M
EV motor making machinery	M	H	M
Testing machinery & equipment	L	M-H	H
Services			
EV charging station installation	M	H	H
Battery swapping station installation	M	H	H
EV charging station operations	M	H	H
Battery swapping station operations	M	H	H
EV sales & service	M	H	H
Standardisation, testing & validation	M	H	H
Engineering design services	M	H	M
EV financing	L-M	M	H
EV insurance	L	M	H
IT & Software			
BMS	M	H	H
Intelligence and analytics for vehicle users	L	M	H
Software for EV charging stations	M	H	H
Software for EV swapping stations	M	H	H

Table 4: Expected Growth of EV Value Chain Components in Three Different Periods

Broadly stated, most upstream parts of the value chain (Raw materials, sub-components...) will need to be content with fairly average growth during the 2019-2025 period, while products, solutions and services mid-stream and downstream can start expecting reasonable business growth starting 2020 as India starts seeing moderate growth in certain end user segments such as two wheelers and three wheelers.

Many businesses are interested in value chain components that are capable of growth in the short term. Components such as battery management systems, or engineering design services, or “light” end products such as scooters or LCVs could indeed show reasonable growth starting 2020, in our analysis. But from among such components with short term growth potential, only a few may offer



very large future business opportunities, something that large corporates desire. Many of those components with potential for a massive future upside could show growth only post 2025.

Does this mean that those keen on entering the upstream part of the value chain need to wait for a few years before making a move? Perhaps not, because investing in upstream parts of the value chain requires more planning, a higher degree of efforts for financial closure, a longer time period identifying the right vendors or partners, and finally, a relatively long time to get the plant up and running. A Li-ion battery cell manufacturing facility could take up to one and half years from planning to commissioning, while an electric scooter assembly facility could be completed within a couple of months!

2.4 Characteristics of the Opportunities

Every business opportunity with significant potential will not fit every business. To evaluate the fit of an opportunity for a particular business, it will be valuable to understand how the opportunity ranks on certain parameters.

This section helps you do this evaluation by listing the characteristics of the value chain components on the following:

- **Investments required** – Minimum investments needed for this component. This will determine the size of the business opportunities from this component are applicable for.
- **B2B or B2C** – Is the customer for this value chain component B2B or B2C?
- **Challenges** – Key challenges faced by opportunities belonging to this component
- **Competition** – Extent of overall competition from within India and global
- **Resources Required for Success** - What assets, skills or other resources are needed to benefit from the opportunity?

Value Chain Component	Investments reqd.	B2B or B2C	Challenges	Current Indian Competition	Resources Required for Success
Raw Materials					
Lithium	Medium	B2B	Geopolitics, Competition	Moderate	Mine ownership, trading network ownership, ore refinery setup
Cobalt	Medium	B2B	Geopolitics	Low	Mine ownership, trading network ownership, ore refinery setup
Nickel	Medium	B2B	Geopolitics, Competition	Moderate	Mine ownership, trading network ownership, ore refinery setup
Manganese	Medium	B2B	Geopolitics, Competition	Moderate	Mine ownership, trading network ownership, ore refinery setup
Graphite	Medium	B2B	Geopolitics, Competition	Moderate	Mine ownership, trading network ownership, ore refinery setup
Sub-components					

Value Chain Component	Investments reqd.	B2B or B2C	Challenges	Current Indian Competition	Resources Required for Success
Anode for Li-ion batteries	Medium	B2B	Technology	Moderate	Chemical engineering, Chemical manufacturing unit, Chemical R&D unit
Cathode for Li-ion batteries	Medium-Large	B2B	Technology	Low	Chemical engineering, Chemical manufacturing unit, Chemical R&D unit
Separators & Electrolyte for Li-ion batteries	Medium	B2B	Technology	Moderate	Chemical engineering, Chemical manufacturing unit, Chemical R&D unit
Motor components	Small-medium	B2B	Costs, Competition	Low-Moderate	Electrical engg, Electrical components manufacturing
Components					
Motors	Small-medium	B2B	Costs, Competition	High	Electrical engg., Electrical manufacturing unit, Mechanical manufacturing unit
Battery cells	Medium	B2B	Costs, Technology, Competition	Moderate	Electrochemistry, Electro chemical mfg unit
Battery packs	Small-medium	B2B	Costs, Competition	Moderate	Software & IT, Pack assembly unit, embedded software & hardware, IoT
EV charging station components	Small	B2B	Policies, Costs, Technology	Low-Moderate	Power Electronics, Embedded Software, EPC, Distributed land ownership, oil & gas retail
EV swapping station components	Small-medium	B2B	Policies, Costs, Technology	Low	Automation, Software EPC, Power Electronics, embedded Software, EPC, Distributed land ownership, oil & gas retail
End Products					
Electric bicycles	Small	B2C	Costs, Competition, Demand	Low-Moderate	Electrical & mechanical engg., Production management, Assembly Infra, Retail distribution infra, Existing brand
Electric scooters	Small-medium	B2C	Costs, Competition, Performance	Moderate	Electrical & mechanical engg, Production management, Assembly Infra, Retail distribution infra, Existing brand
Electric motorbikes	Small-medium	B2C	Costs, Demand, Performance	Low	Electrical & mechanical engg, Production management, Assembly Infra, Retail distribution infra, Existing brand
Electric 3 wheelers	Small-medium	B2B & B2C	Costs, Competition,	Moderate	Electrical & mechanical engg, Production management,

Value Chain Component	Investments reqd.	B2B or B2C	Challenges	Current Indian Competition	Resources Required for Success
			Demand, Performance		Assembly Infra, B2B distribution Infra, Existing brand
Electric cars	Medium-Large	B2B & B2C	Policies, Costs, Demand, Performance	Low-Moderate	Electrical & mechanical engg, Production management, Assembly Infra, Retail distribution infra, Existing brand
Electric buses	Medium-Large	B2B	Policies, Costs, Demand, Performance	Low	Electrical & mechanical engg, Production management, Assembly Infra, Existing brand, Servicing infra, B2B distribution
Electric LCVs	Small-Medium	B2B & B2C	Technology, Demand, Performance	Low	Electrical & mechanical engg, Production management, Assembly Infra, Existing brand, Servicing infra, B2B distribution
Machinery					
Li-ion battery cell making machinery	Medium	B2B	Technology, Demand	Moderate	Machine engg & design, Value added reseller/distributors, Domain expertise for machinery and equipment making, R&D for equipment making
Li-ion battery pack making machinery	Medium	B2B	Technology	Moderate	Machine engg & design, Value added reseller/distributors, Domain expertise for machinery and equipment making, R&D for equipment making
EV motor making machinery	Medium	B2B	Competition, Demand	Low	Machine engg, Value added reseller/distributors, Domain expertise for machinery and equipment making, R&D for equipment making
Testing machinery & equipment	Medium	B2B	Demand	Low	Electrical & electronics engg., Value added reseller/distributors, Domain expertise for testing equipment making, R&D for equipment making
Services					
EV charging station installation	Small	B2B	Policies, Technology, Demand, Performance	Moderate	Electrical engg., EPC & electrical engg expertise
Battery swapping station installation	Small	B2B	Policies, Technology, Demand, Performance	Low	Mechanical engg., Robotics, EPC expertise

Value Chain Component	Investments reqd.	B2B or B2C	Challenges	Current Indian Competition	Resources Required for Success
EV charging station operations	Small	B2C	Policies, Costs, Demand, Performance	Moderate	Electrical engg., Operations & facilities management, O&M expertise
Battery swapping station operations	Small	B2C	Policies, Technology, Demand	Low	Operations & facilities management, Service station O&M expertise
EV sales & service	Small	B2C	Demand, Performance	Moderate	Marketing & sales, Retail sales expertise, Availability of premium retail showroom
Standards, Testing & Validation	Medium	B2B	Policies, Awareness	Low	Expertise, qualifications and authorizations for providing testing and validation services
Engineering design for EV ecosystem	Small-medium	B2B	Awareness, Lack of expert skills	Low	Engineering design, Automobile design, Electrical engineering
EV financing	Medium	B2B & B2C	Policies, Demand, Clarity on Performance & Risks	Moderate-High	Raising capital/finance, Background in the finance/lending industry, Qualifications, approvals and authorizations to provide financial support
EV insurance	Medium	B2B & B2C	Policies, Clarity on Performance & Risks	Low	Background in the insurance industry, Qualifications, approvals and authorizations to provide insurance support
IT & Software					
BMS	Small	B2B	Technology	Low-Moderate	Power electronics, embedded software & hardware
Intelligence and analytics for vehicle users	Small	B2B	Technology	Low	Software development, Analytics
Software for charging stations	Small	B2B	Technology	Low	Software development, Analytics
Software for battery swapping stations	Small	B2B	Technology	Low	Software development, Analytics

Table 5: Characteristics of EV Value Chain Components

2.5 Classifying Opportunities for Business Sector & Size

The data and insights in the earlier sections would have enabled a prospective business or entrepreneur to arrive at a shortlist of opportunities based on the size of investment needed, the types of markets (B2B or B2C), and the firm's key strengths and capabilities.

Doubtless, the above sections will lead different types of businesses and entrepreneurs to arrive at different shortlists that comprise most attractive business opportunities for them.

As a summary, we have provided an Sector-Size matrix below that lists the types of opportunities for each Sector & Size, depending on where you belong on the two dimensional spectrum of Sector & Size.

Note that opportunities that are listed under Micro & Small are also feasible for Medium & Large firms (though they might not be the most optimal for them!), but the inverse is not valid – that is, opportunities listed under Medium & Large usually might not be feasible for small firms unless they are able to form synergistic partnerships with larger firms.

Similarly, those opportunities listed for specific industry sectors are ideal for companies in those sectors, but that does not prevent a company from outside the sector to target the opportunity if they are able to form relevant strategic partnerships.

Sector/size	Micro & Small	Medium & Large
Auto & Auto Component Industry	<ul style="list-style-type: none"> • Motor components • E-bicycles • E-scooters • E-motorbikes • e-rickshaws 	<ul style="list-style-type: none"> • Electric cars • Electric buses • Electric LCVs • Motors & motor controllers
Power, Electrical & Electronics Industry	<ul style="list-style-type: none"> • Battery packs • EV charging station components • EV battery swapping station components • EV charging station installation • EV battery swapping station installation • BMS • Analytics software for vehicle users, charging & swapping stations 	<ul style="list-style-type: none"> • Motors & motor controllers • Battery cells (or integrated battery cells & packs) • Motor making machinery • Testing machineries & equipment for vehicles and components (including batteries)
Other Industry Sectors	<ul style="list-style-type: none"> • EV charging station operations • EV battery swapping operations • EV sales & service • Engineering design for EV ecosystem 	<ul style="list-style-type: none"> • Sourcing or owning sources for raw materials (mining/metals industry) • Anode & cathode manufacturing (chemical industry) • Cell making machinery • Pack making machinery • Testing & standardisation services • Financing • Insurance

Table 6 : Opportunities Categorized for Business Sectors & Sizes

Prominent industry sectors that comprise the “Other Industry Sectors” category would be:

Metals & mining	Chemicals	IT & Software	Finance
Construction	Machine & machine tools	Oil & gas	Logistics & transport
Engineering design firms	Testing & validation firms	Trading firms	

Table 7: Prominent industry sectors that comprise the “Neither of the two” category

2.6 Vertical Integration Opportunities

The above sections treated each opportunity as distinct from another. This need not be the case. Many companies, especially medium and large ones, could eye vertically integrated investment strategies for the e-mobility sector. A preliminary evaluation for such vertical integration possibilities can be done using the analyses of EV value chain components and the strategy action framework, but with an extra layer of analysis added to evaluate the effect of integration.

There are many feasible combinations for such vertical integration. The following table lists some, for illustrative purposes.

Feasible Vertical Integrations across Components	Degree of vertical integration	Relevance for Indian companies in short and medium terms
Raw materials + Sub-components + Battery Cells + Battery packs	High	Low-Moderate
Sub-components + Battery cells + Battery packs	High	High
Sub-components + Battery cells	Moderate	High
Battery cells + Battery packs	Moderate	High
Battery packs + Motor components + Motors	Moderate	High
Motor components + Motors + Automobiles	Moderate	High
Battery packs + Motors + Motor components + Automobiles	Moderate	High
Battery cell making machinery + Battery pack making machinery	Low	Moderate
Components for EV charging infrastructure + EV charging infrastructure assembly + EV charging infrastructure installation	Moderate	High
Components for EV charging infrastructure + EV charging infrastructure assembly	Low-Moderate	High
Automobiles + EV charging infrastructure O&M	Low-Moderate	High
Components for EV battery swapping infrastructure + EV battery swapping infrastructure assembly	Low-Moderate	High
Automobiles + EV battery swapping infrastructure O&M	Low-Moderate	High
EV charging infrastructure O&M + EV swapping infrastructure O&M	Low	High
EV sales & marketing + EV charging & swapping infrastructure O&M	Low-Moderate	High

Table 8: Vertical integration possibilities



Catalyzing Cleantech & Sustainability

What we have listed above are some of the more feasible integrated opportunities. There could of course be a select few others. What combination is optimal for you depend on a whole host of factors – part of which depends on the market itself, and the other part on what your company brings to the table. There’s the time dimension as well – you may want to start with one opportunity with an eye to integrate upstream or downstream down the line.

3. The Right Opportunity for You

3.1 Steps to Identify the Right Opportunity

We now come to the last section of the white paper where we provide a list of steps to identify the right opportunity for your firm.

Using the data and inputs provided in the earlier sections, your team can now use this conceptually simple action framework to start on the roadmap for your e-mobility strategy.

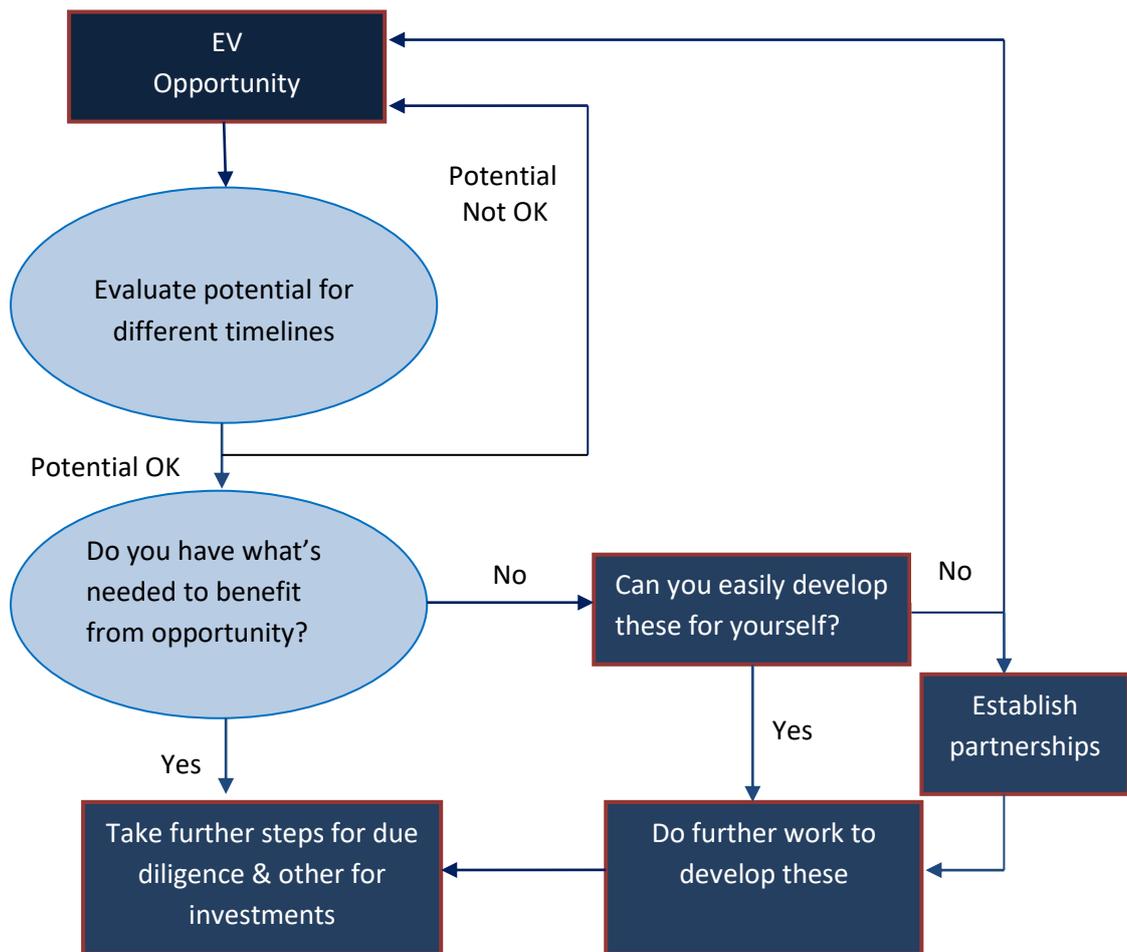


Figure 3: Steps to identify the right EV opportunity for your firm

For each value chain component, assess it on its potential for specific timelines. For those with potential, assess whether your firm has (or can develop on your own or through partnerships) what it takes to benefit from the opportunity. Take further steps to work on those opportunities that have done well in these assessments.

Doing the above analyses requires a small team to work in detail on each of the steps, with the top management interactions at key stages of evaluation such as the one about the ease of developing the resources and skillsets.

Take EVNext Assistance for Your E-mobility Strategy

EVNext, EAI's division focused on strategic assistance for the Indian e-mobility sector, can assist your company in your e-mobility strategy efforts.

We can assist you on every step of strategic evaluation mentioned in this white paper.

To know how we can provide customized assistance for your firm, send a note to consult@eai.in (or) Call Dharini @ **7358263274**

More about EVNext from www.evnext.in

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All the best!