



Empowering **Future**  
Exploring **Energy Alternatives**

[www.gensol.in](http://www.gensol.in)

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<b>1</b>	<b>Introduction to Company</b>	<b>4</b>	<b>Competitive Benchmarking</b>
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<b>3</b>	<b>Our Solution</b>		



## Introduction to Company


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One of the Largest Solar EPC business groups in India.

## About Gensol

Gensol is world's leading solar solution provider and India's largest renewable energy engineering business group.

- **Gensol was incorporated in 2012**, & since then driven by experienced team of Management and Engineers.
- Provides Integrated Engineering Procurement and Commissioning Services across Solar Value Chain in India.
- Demonstrating strong financial performance with **Elite Clientele** – Astral, SRF, Shree cement, ReNew Power, Adani Group, Greenko, Tata Power, BPCL, Soft Bank Energy, Shapoorji, SBI, Edelweiss, etc.



33,693+  
MW Technical Expertise

200+  
Employees

150+  
Clients

# Introduction to Management



## Promoters



**Anmol Singh Jaggi,**  
Chairman & Managing Director

- Building India's largest & most responsible B2C electric mobility business at BluSmart Electric Mobility
- Leading a team of 800 technocrats in the Renewable Energy services domain at Gensol Engineering Ltd.
- Business World Young Entrepreneur Award - 2010



**Puneet Singh Jaggi,**  
Whole Time Director

- First Generation Entrepreneur & Clean Energy Enthusiast
- Have been an advisor to 30 GW of Renewable Energy Projects, Digitized 10 GW and operate 3 GW of Renewable Energy Projects.
- Connected 300+ Renewable Energy Plants and 1000+ engineers processing a billion signals daily.

## Key Management



**Pranay Mundra,**  
President



**Ali Imran Naqvi,**  
Chief Operating Officer

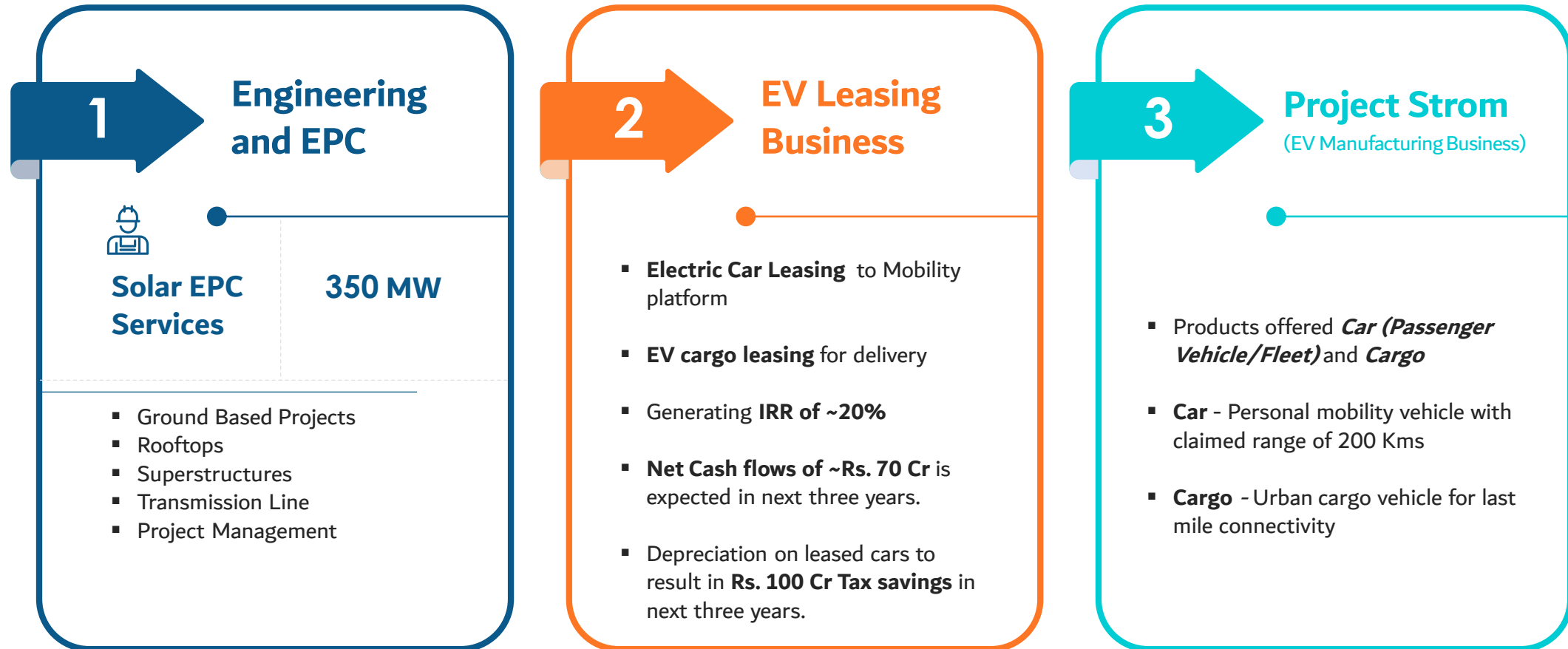


**Rajesh Parmar,**  
CS & Compliance Officer



**Jabir Mehendi Aga,**  
Chief Financial Officer

## Services offered by Gensol



# 1. Engineering and EPC



## Solar EPC Services

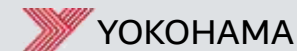
⚡ **350** MW

🏗️ **225+** Projects

👤 **140+** Clients

▪ Ground Mounted	197 MW
▪ Roof Mounted	149.5 MW
▪ Superstructure	3 MW
▪ Floating Solar	0.5 MW

### Key Clients





## Solar EPC Credentials



### Ground Mounted



40 MW Golden Hatcherries, Karnataka

- Golden Hatcherries
- Shree Cement
- Central Electronics Limited
- Smritivan Society, GSDMA

**⚡ 197 MW**



### Roof Mounted



4.7 MW across 60 roofs, Rattan India, MP

- 9 MW, Astral Pipes
- 3 MW, Knack Packaging
- 3.5 Arisudana Industries
- 1 MW, Hero
- 1 MW, Samsonite

**⚡ 149.5 MW**



### Superstructure



2 MW Two Rivers Mall – Carport Solar, Kenya

- Medanta Hospital, Delhi
- Two Rivers Mall Carport, Kenya
- Mundra Solar Pvt. Ltd.
- Shankus Waterpark & Resort

**⚡ 3 MW**



## 2. Leasing Business



Gensol engaged in the business of **Buy-and-Lease of EV Cars** with reputed ride hailing company, earns lease rental income on it.

**700+**  
Cars as on Jun'22

**3000+**  
Cars on lease  
expected  
by FY23

**INR 267 cr**  
Loan Sanctioned by  
IREDA

# Group Structure

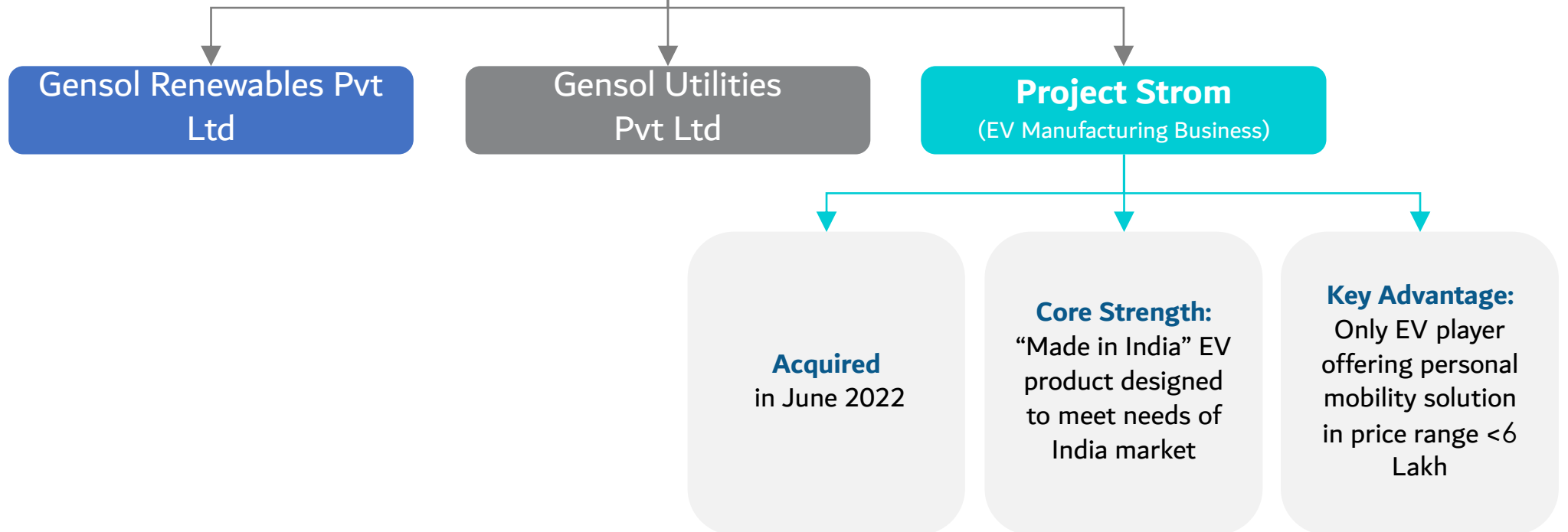


## GenSol Engineering Limited Holding Company

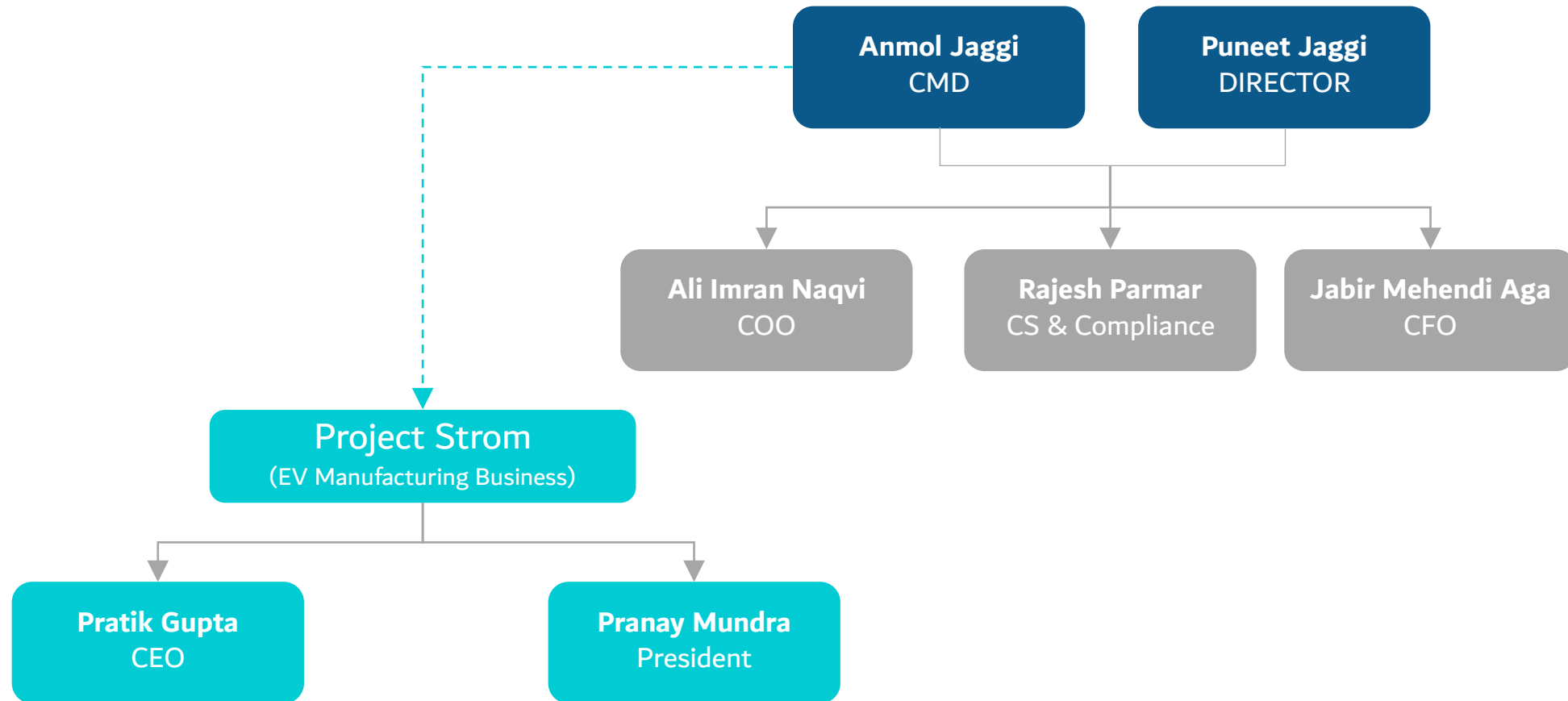
### Holding company

- **Management:** experienced professionals & dedicated to the Solar & energy business for more than a decade in India.
  - Listed on **SME BSE** Stock Exchange\*

### Subsidiaries



# Corporate Structure



15 years project lead experience from RnD to deployments ranging from space communications to solar power.



## Project Strom, at a glance

Project Strom is involved in **manufacturing of 3- wheeler Personal & Cargo mobility EVs.**



- Offers urban mobility solutions.
- **Car (Passenger Vehicle/Fleet):** A fully air-conditioned, two-seater reverse trike with a compact design, premium interiors and a high-torque electric drive-train.
- **Cargo:** Urban cargo vehicle for last mile connectivity with an expected capacity of 800 KGs.

**precision engineering and state-of-the art technology to redefine urban personal mobility**

Head Office  
**Ahmedabad**

Production Unit  
**Pune**

Planned manufacturing Capacity  
**1200 units per month**



## Market Overview

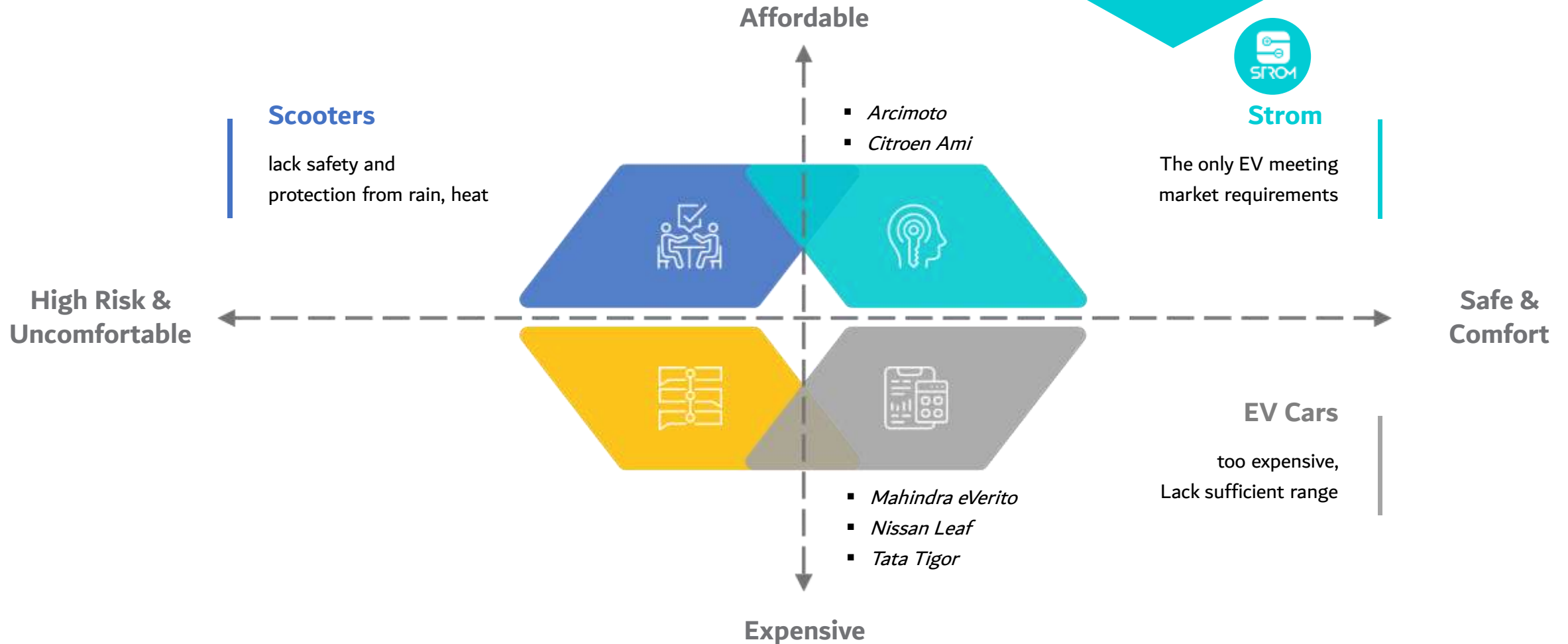
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Marketing without market research is like driving with your eyes closed – Dan Zarrella



## No EV option available for Indian Middle Class

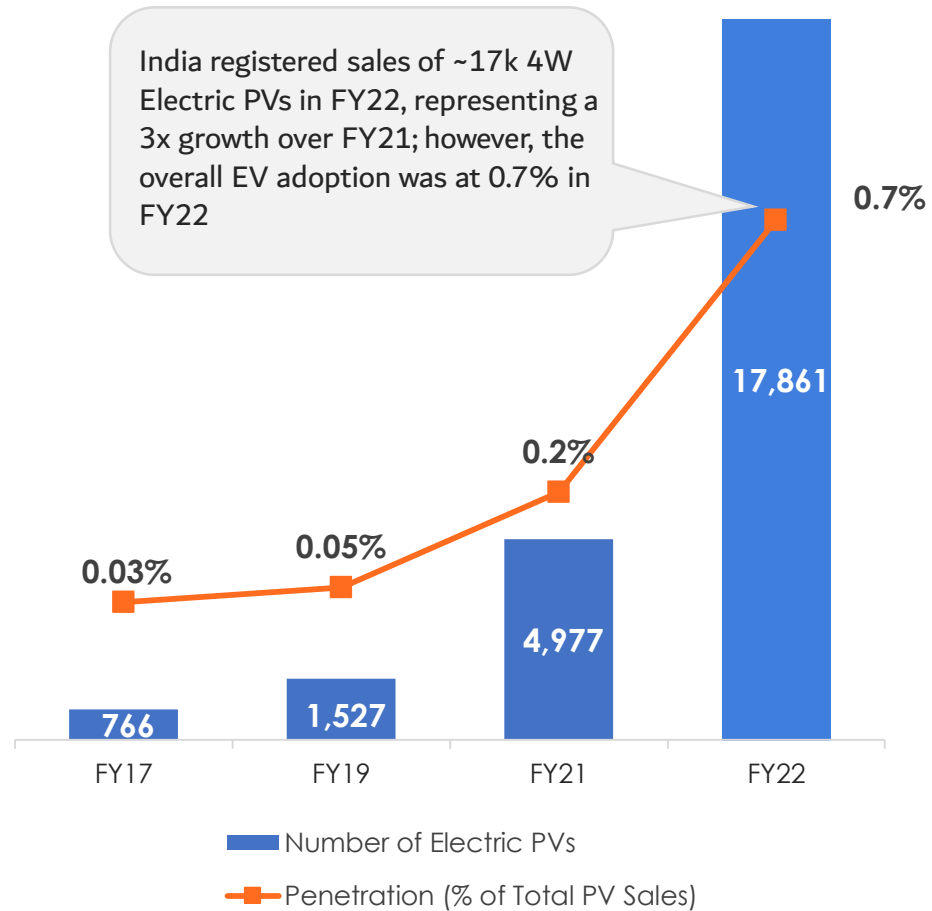
### EV hatchbacks in the <6 lakhs range is a white space



## EV Market (both Passenger & Cargo EV) has penetration of ~1% in India

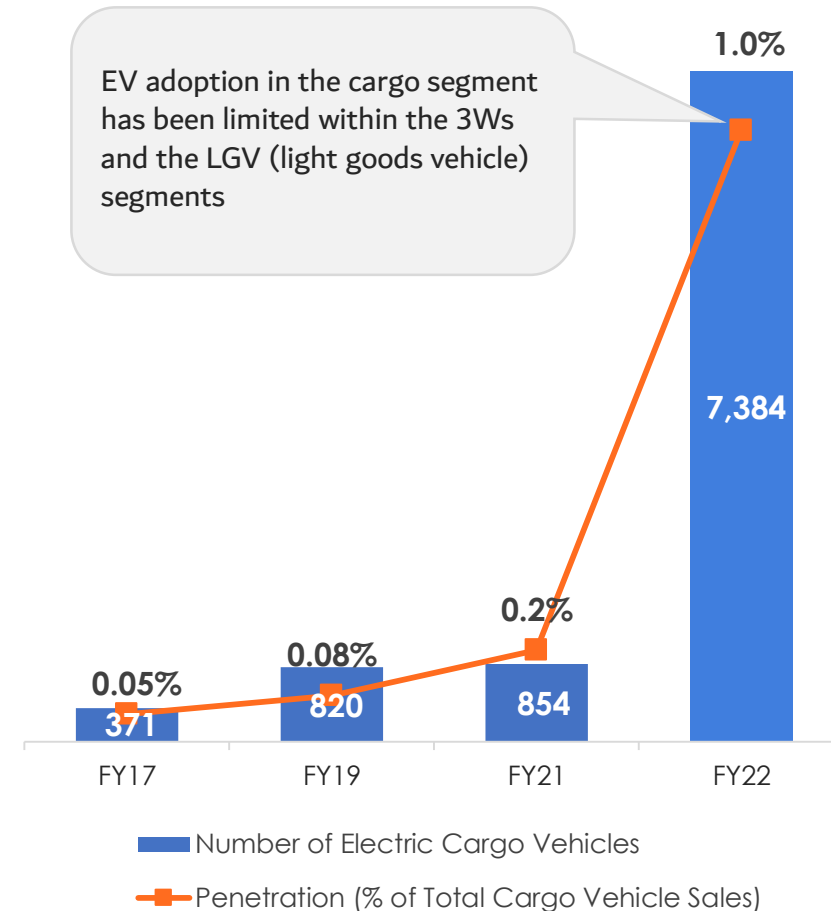
### 4W Passenger EV Market in India

Units, % of total sales, FY17-22



### Light Cargo EV Market in India

Units, % of total sales, FY17-22





## Growth Drivers for EV market in India

### Favourable TCO



- EVs TCO expected to be lower than their ICE counterparts within in next 2-3 years
- As the daily run increases, EVs would become favourable earlier
- Running cost per km are 10-15x lower in EVs compared to ICE vehicles

### Government Policy Push



- Demand side incentives under FAME II policy and state EV policies
- Supply side incentives through PLI ACC, PLI Auto schemes and state EV policies
- Discouraging EV battery exports

### Charging Infrastructure Growth



- Growth in public charging stations as OEMs take lead
- Concerns regarding low utilisation of charging stations to fade away with increase in EV sales
- Parking space problems to emerge

### Battery Manufacturing Advancements



- Production linked Incentives (PLI) in the Advanced Chemical Cell (ACC) battery storage to drive investments in EV batteries
- It aims at localisation of battery technologies, thus leading to lowering battery costs

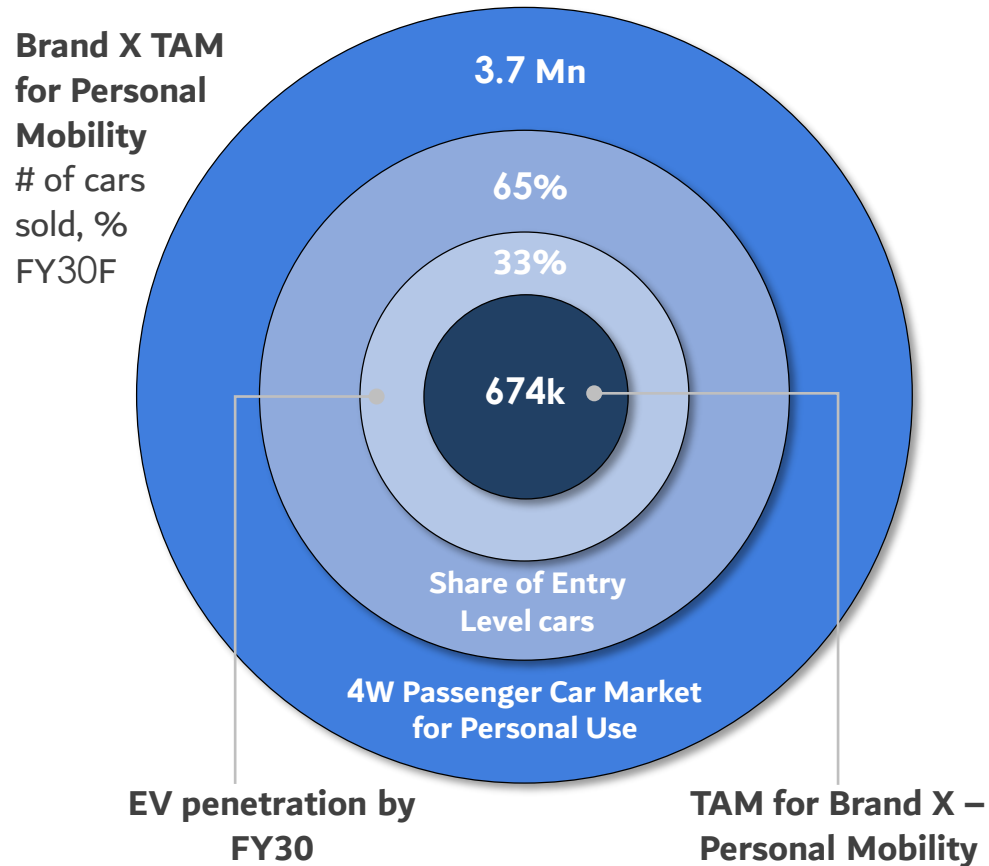
### EV – Priority Sector Lending



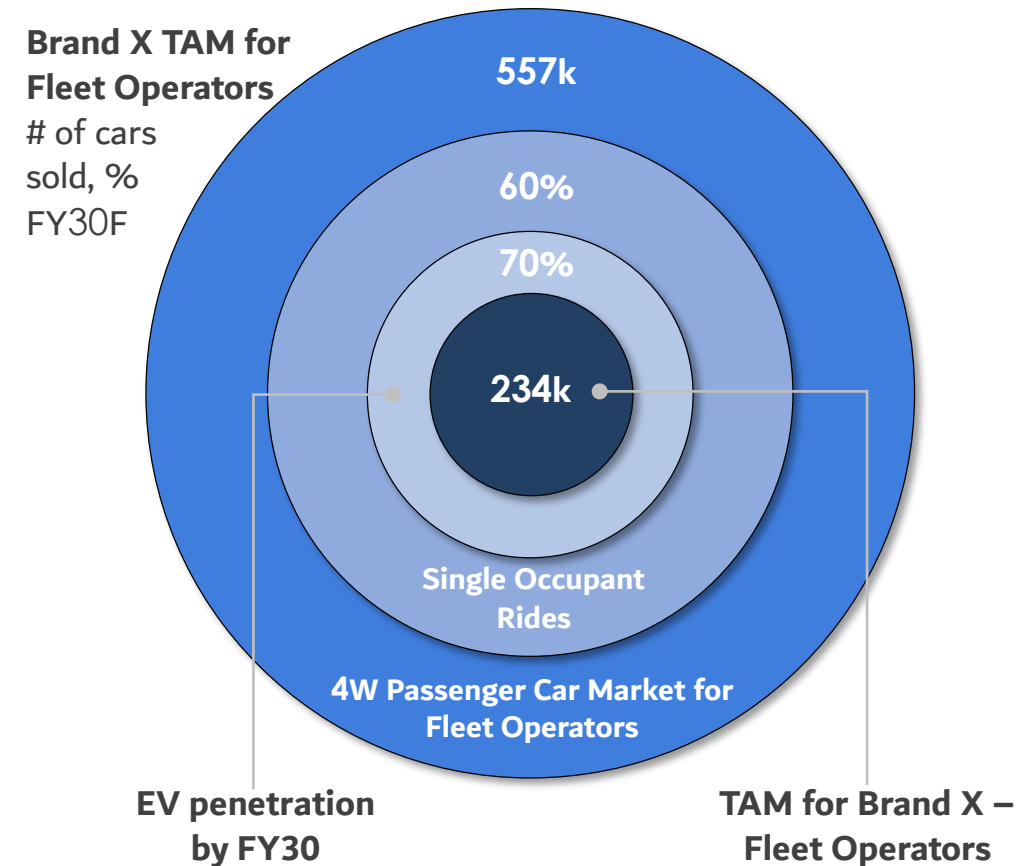
- A policy to include retail lending for EV purchase as priority sector lending for banks is proposed
- Currently few banks offer loans on EV due to uncertainty around their re-sale value

## Market Opportunity for Brand X

We estimate the TAM for Brand X to be ~900k units per annum, by FY30 across personal mobility (~670k units) and fleet operator (~230k units) segments



TAM of ~674,000 units represents ~18% of the estimated total PV sales in FY30



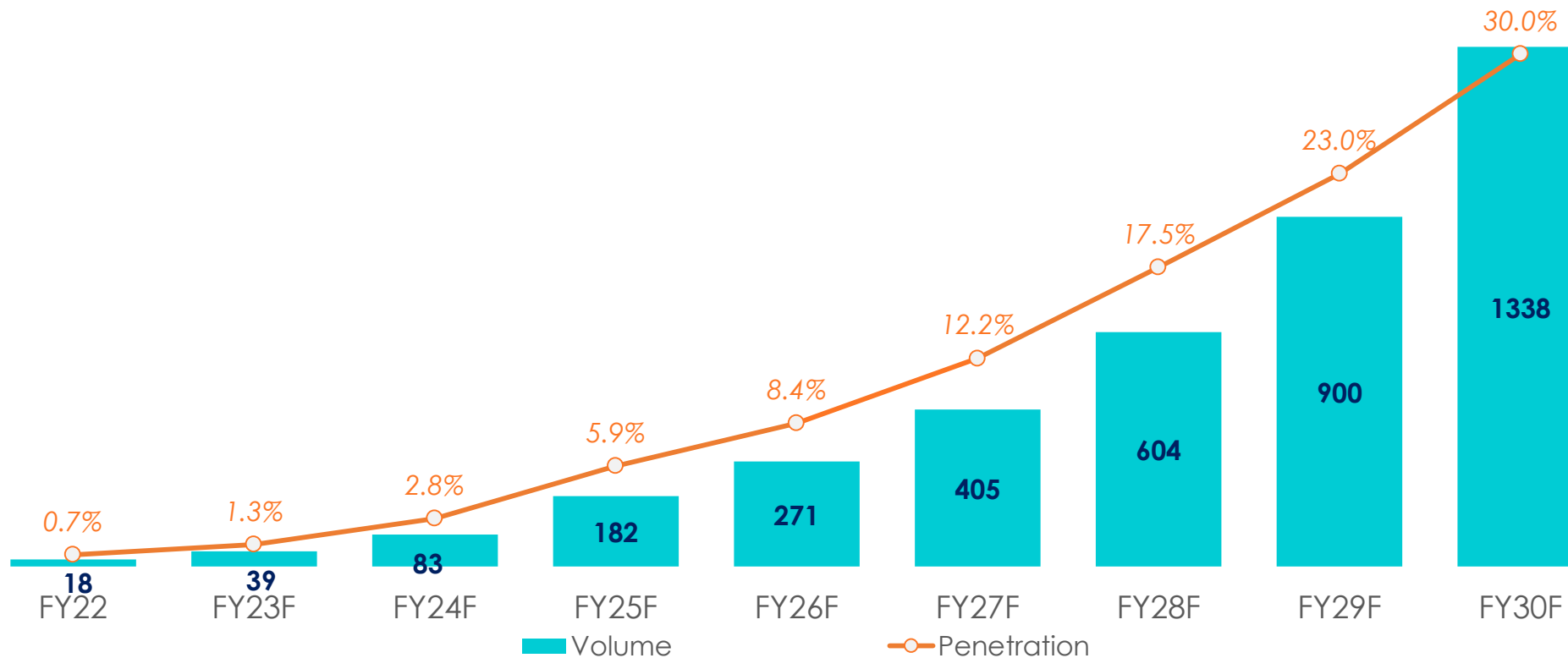
TAM of ~234,000 units represents ~6% of the estimated total PV sales in FY30

## 4W PV (EV) market estimated growth by 2030

With a ~30% penetration, Total 4W PV (EV) sales in India are estimated to be ~1.3 Mn cars per year by FY30.

### Total Passenger EV Sales

'000 units, % of Total Sales, FY22-30F



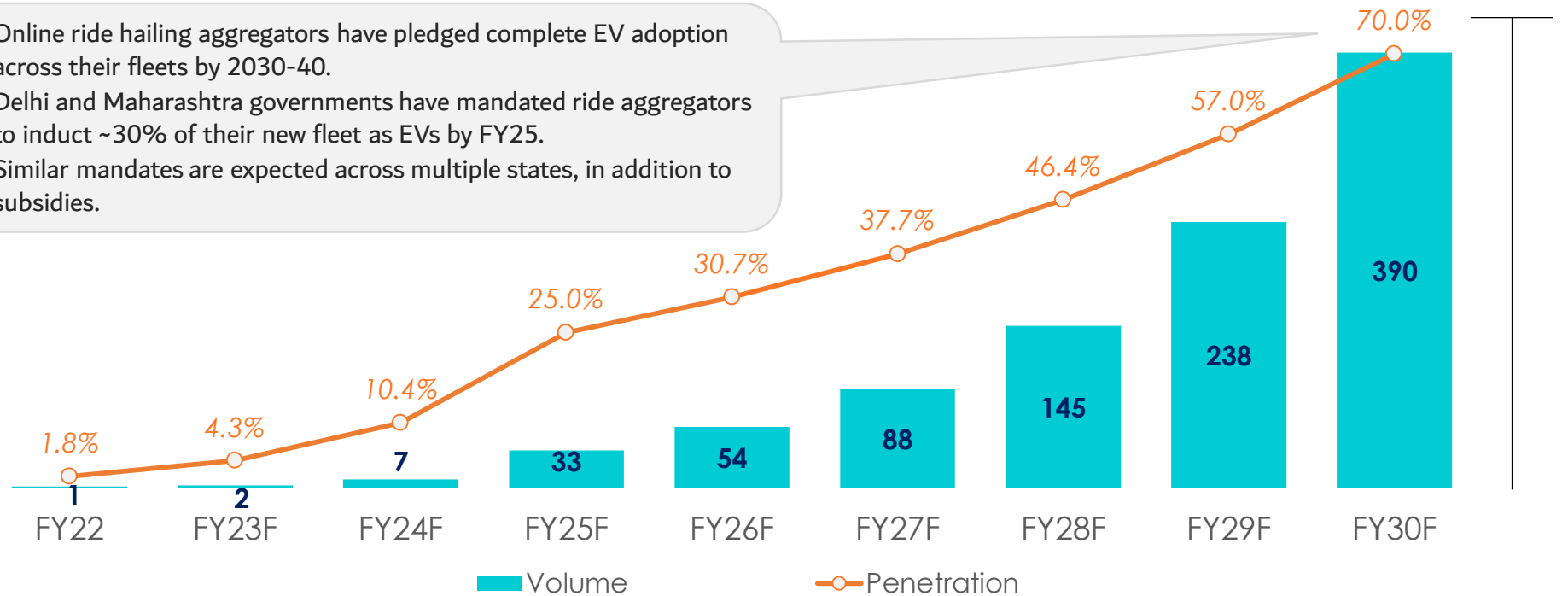
## Estimated EV adoption by Fleet Operators

- EV Adoption by fleet operators is estimated to reach 50-70% by FY30 on the back of reducing TCOs, policy push and corporate carbon-neutral plans.

### EV Taxi Fleet Sales (e4W PV)

'000 units, FY22-30F

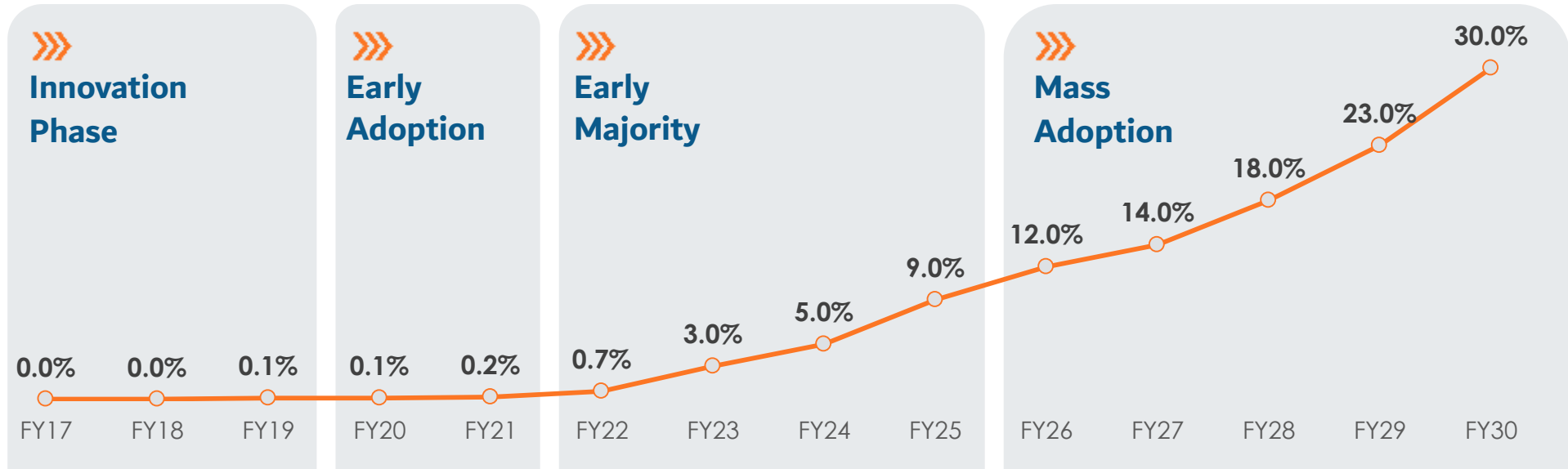
- Online ride hailing aggregators have pledged complete EV adoption across their fleets by 2030-40.
- Delhi and Maharashtra governments have mandated ride aggregators to induct ~30% of their new fleet as EVs by FY25.
- Similar mandates are expected across multiple states, in addition to subsidies.



## Penetration transition: Mass adoption is expected from FY26

### 4W EV penetration trend in India

%, FY17-30F



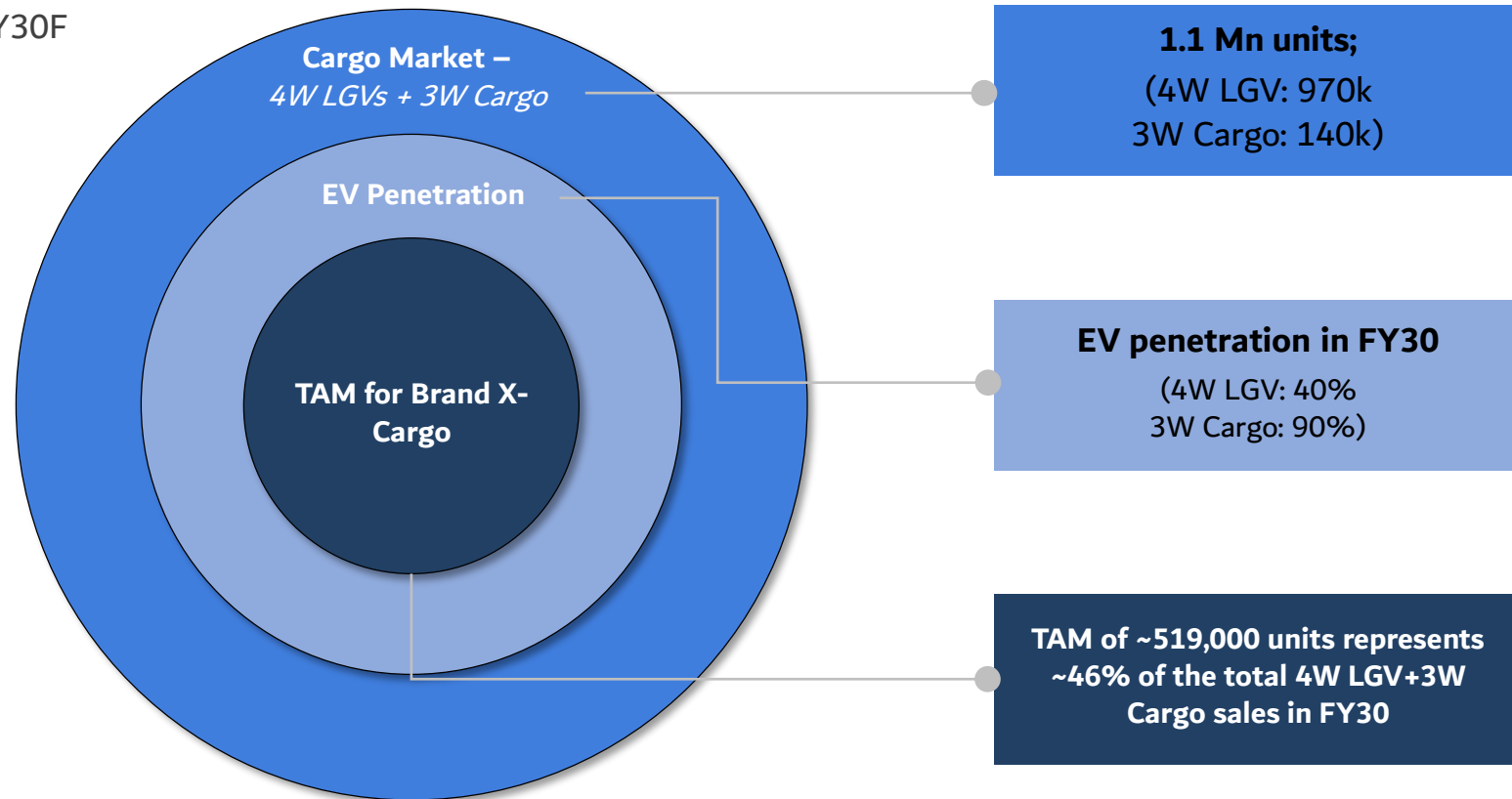
Factor	Innovation	Early Adoption	Early Majority	Mass adoption
<b>TCO</b>	TCO much lower for ICE vehicles	ICE vehicles have lower TCO for personal use	EVs have lower TCO for personal use due to lower battery prices and government subsidies	EV TCOs continue to decrease, driven by lower insurance, maintenance cost and domestic manufacturing of packs/ cells.
<b>Supply Factors</b>	Dependent upon select few models	Launch of SUVs by limited players	Launch of long range SUVs with larger battery sizes by many players	Launch of hatchbacks and sedans below the 10L price point
<b>Charging Infra</b>	Undeveloped	Players entry into charging space	Proliferation of highway and city charging points	Development of charging points in homes and offices
<b>Customer Perception</b>	Social status vehicle	Secondary vehicle for small distances	A viable economic alternative to ICE vehicles for daily use	Mass adoption as a primary vehicle, including inter city travels

## Market Opportunity for Brand X Cargo

We estimate the TAM for Brand X-Cargo to be ~519k units per annum, by FY30 across 3W Cargo (~388k units) and 4W LGV (~131k units) segments

### Brand X-Cargo TAM

# of cars sold, %, FY30F

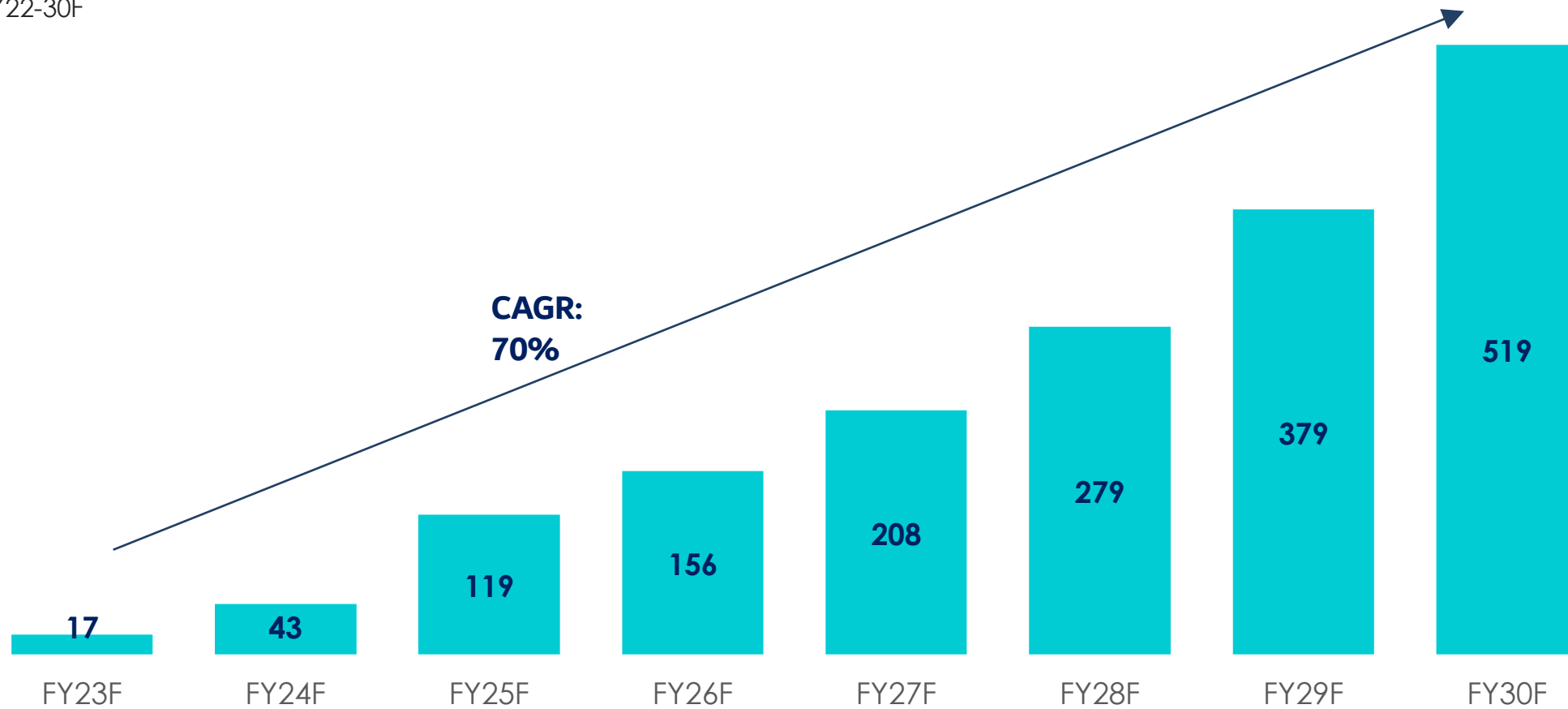


## TAM for Brand X Cargo (3W Cargo and 4W Light Goods Vehicle(LGV) by FY 30

TAM of ~5,19,000 units represents ~46% of the total cargo sales in FY30

### Total 3W+ 4W Cargo Vehicles Sales

'000, FY22-30F





## Our Solution

---

The intelligent,  
smart, cute  
and quirky little  
electric car  
**the 9 year old in  
you will love.**





## Our Product

GEL is a holistic renewable energy solution provider entering the EV market with a **3-wheeler personal mobility and cargo electric vehicle**

### Products offered



- Price – INR 5-6 lacs
- Range – 100-200 Kms
- Speed – 80 Kmph
- Charging Time – 3 hrs.

#### Brand X

#### Personal Mobility Vehicle

- Remote access and Geo-fencing
- 4G cloud connectivity
- Air conditioned/heated cabin
- AI-Powered insights and over the air updates



- Price – INR 5-6 lacs
- Range – 100-200 Kms
- Payload – 800 Kgs
- Charging Time – 3 Hrs.

#### Brand X Cargo

#### Urban Cargo Vehicle

- Low ingress height
- Swappable batteries
- Modular interior design
- Customization for Indian road conditions

### Project Particulars

#### Project Timelines

PRODUCTION

Oct  
2022



DELIVERIES

Jan  
2023

#### Gensol EV: Planned Revenue Streams

Personal Mobility EVs

Brand X - PV

Ride Hailing EVs

Brand X - Fleet

Cargo Vehicles for Last Mile Delivery

Brand X-Cargo

## Product Features and End Use Cases

Gensol offers a personal mobility vehicle, targeting customers planning to shift to or add an EV to their current fleet, and a cargo variant for last mile delivery.

### Key Product Features



#### Brand X

##### Personal Mobility Vehicle

- Remote access and Geo-fencing
- 4G cloud connectivity
- Air conditioned/heated cabin
- AI-Powered insights and over the air updates



#### Brand X Cargo

##### Urban Cargo Vehicle

- Low ingress height
- Swappable batteries
- Modular interior design
- Customization for Indian road conditions

### Use Case and Target Customers

#### Use Case: Personal mobility primarily in Tier 1 cities

##### B2C

- New or Used Car buyers
- Young Family
- University student
- Working Professional/Small business owner
- Additional Car

##### B2B

- Fleet operators
- Corporates with large campuses



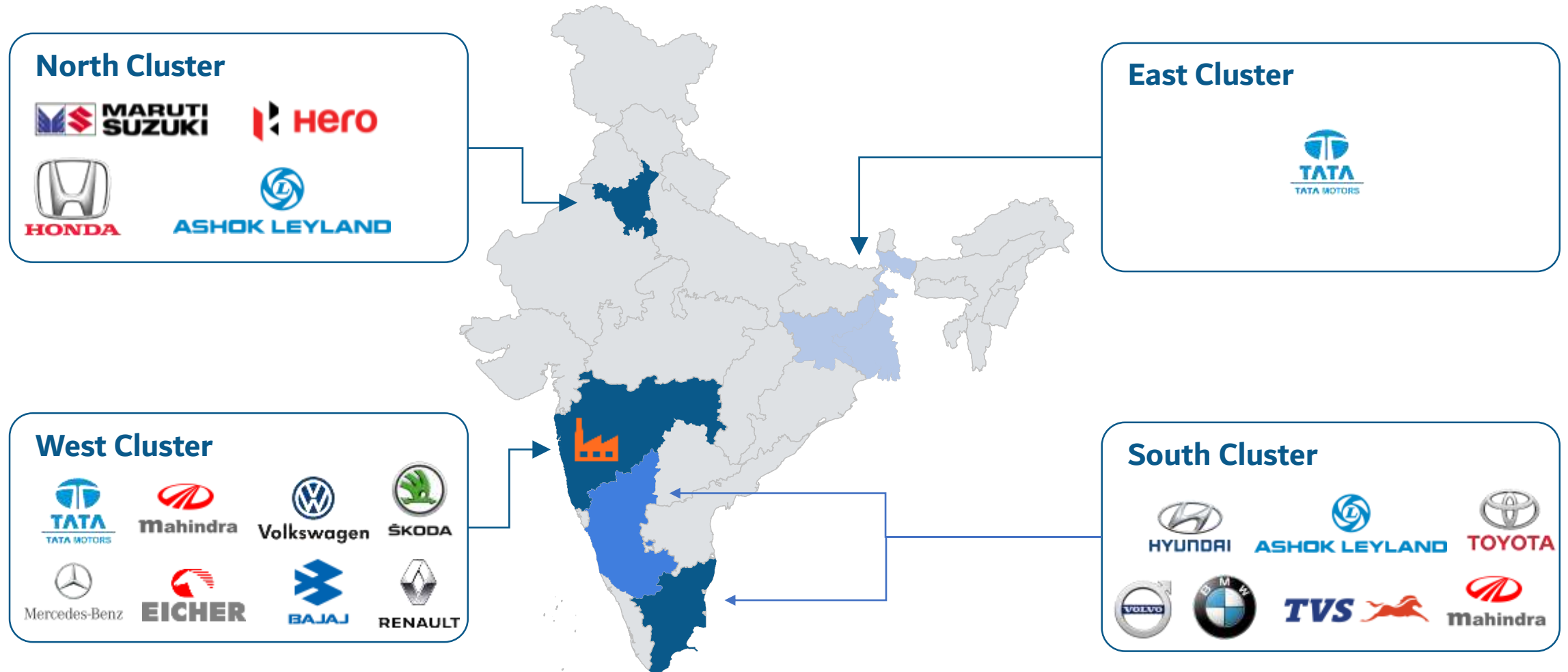
#### Use Case: B2B last mile connectivity and iner-city/ hyper local deliveries

##### Last Mile Firms /Courier & Delivery Companies



## GEL Proposed Plant Location

GEL plans to establish its manufacturing facility in the Chakan, Pune; largest of the 4 Auto manufacturing clusters in India





# Competitive Benchmarking

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It is nice to have valid competition; it pushes you to do better.

– Gianni Versace



## Competition for Brand X and Brand X-Cargo

Brand X is expected to compete with entry level EV 4W cars while Brand X-Cargo is expected to compete with EV 3Ws and entry level electric 4Ws cargo vehicles

### Products offered



**Brand X**  
**Personal Mobility Vehicle**



**Brand X Cargo**  
**Urban Cargo Vehicle**

### Expected Competition

#### ICE 4Ws priced up to INR 10 Lacs



S Presso



KWID



Santro



RE 60



Redi Go



Alto

#### EV 4Ws priced up to INR 10 Lacs



Tata Tiago



ORA R1

Potential Chinese entrants such as BYD, Wuling, Chery, Dongfeng Fengguang

#### ICE LCVs and 3W Cargo vehicles priced up to INR 10 lacs



Supro



Ace Gold



Bolero



Jeeto



Super Carry



Eeco

#### EV LCVs and 3W Cargo vehicles priced up to INR 10 lacs



Treo Zor



Rage+



Ape E Xtra



Shakti



Hi Load































NEEV

# Existing players are focused on the price range of INR 10 lakh & above

## Key Players: EV Personal Mobility

FY22

Models expected to launch upto 2025

Upcoming Models	 <b>Brand X</b>	 ORA R1 INR 7 Lacs	 OLA Electric Car INR 8 Lacs	 ORA R2 INR 10 Lacs	 TATA Sieraa INR 14 Lacs	 Mahindra XUV300 Electric INR 15 Lacs	 TATA Curv INR 20 Lacs	 Mercedes Benz EQA INR 60 Lacs	 Ford Mustang Mach-E INR 70 Lacs
	 TATA Tiago INR 6 Lacs	 Mahindra eKUV 100 INR 8.25 Lacs	 Maruti WagonR Electric INR 10 Lacs	 Tata Altroz EV INR 14 Lacs	 Maruti Futuro-e INR 20 Lacs	 Nissan Leaf INR 30 Lacs	 Tesla Model S INR 1.50 Cr	 BMW i7 INR 2.50 Cr	
Current Models		 Mahindra E-Verito INR 9.2 Lacs	 Tata Tigor EV INR 13 Lacs	 Tata Nexon EV INR 15 Lacs	 MG ZS EV INR 25 Lacs	 BYD E6 INR 25 Lacs	 Mercedes Benz EQC INR 1.0 Cr.	 BMW iX INR 1.16 Cr	
					 Hyundai Kona INR 23.7 Lacs	 Mini Cooper SE INR 47.2 Lacs	 Audi e-Tron INR 1.0 Cr.	 Porsche Taycan INR 2.0 Cr.	
	<i>Entry (&lt; INR 6 Lacs)</i>	<i>Value (INR 6 -10 Lacs)</i>		<i>Mid (INR 10-15 lacs)</i>		<i>Premium (INR 15 – 50 Lacs)</i>		<i>Luxury (&gt; INR 50 Lacs)</i>	

**Brand X is expected to cater to a whitespace in the Entry level segment of <INR 6 lacs where currently no EV is offered**

\*Indicative and Non Exhaustive

Secondary Research, Trade Press, Analysis

# Brand X-Cargo offers a differentiated offering

## Key Players: EV Personal Mobility FY22



\*Indicative and Non Exhaustive

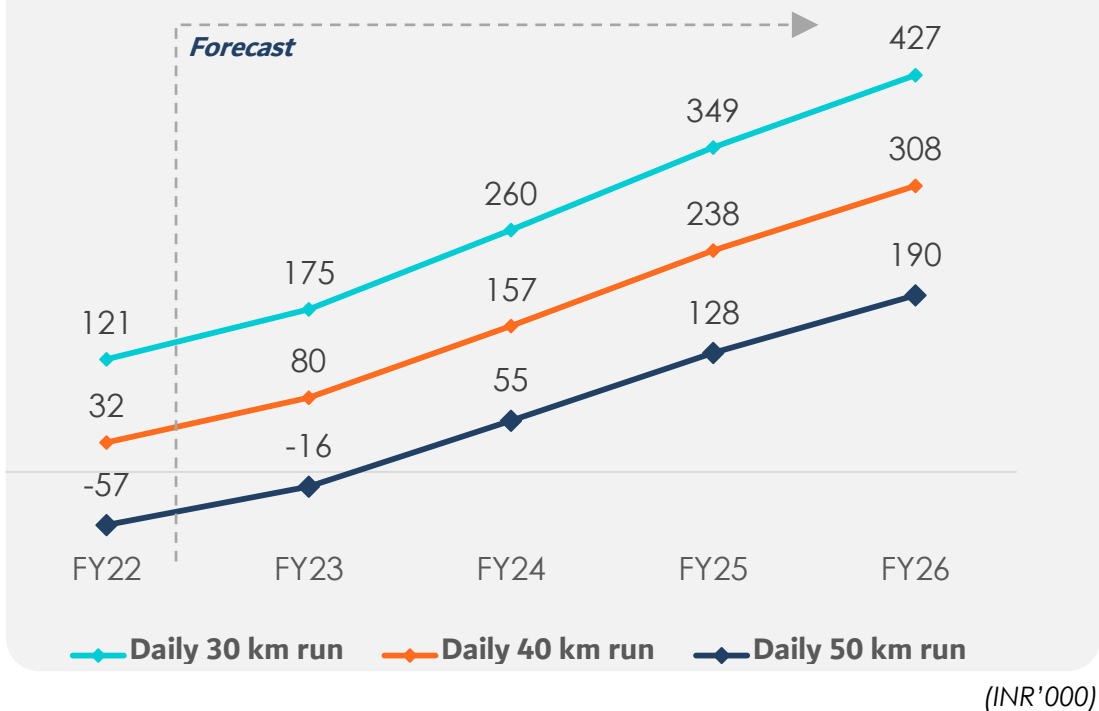
Secondary Research, Trade Press, Analysis

## TCO Gap: ICE Vs EV

For a daily use of 30km/day, EV TCOs are more favourable than ICE

### TCO Gap: Nexon ICE – Nexon EV

INR '000, FY22-26F



40 km Daily Run	FY22	FY23	FY24	FY25	FY26
TCO for Petrol(A)	1448	1511	1576	1645	1718
TCO for EV X (B)	1416	1431	1419	1407	1410
TCO Savings (A-B)	32	80	157	238	308

Salvage value of an EV car is likely to be dependent on various factors like-

- Availability of second life for the EV car batteries
- Forecasted decrease of battery prices
- GST rates of the government on the EV cars

Salvage value for an EV might be better compared to ICE considering the growing fuel prices, higher battery life (warranty for 8 years v/s lifetime of 5 years considered in TCO estimates)

Area	Parameter	Assumption
<b>General</b>	Vehicle Ownership Period	5 years
	Salvage Value after 5 years	EV- 40% ICE – 35%
	Distance covered per day	30-50 km
	Discount Rate	10%
<b>Battery</b>	Range	200 Km
	Mileage	EV: 6.7 km/kWh ICE: 16 km/l
	Capacity	32.2 kWh
<b>Cost of Operation</b>	Battery pack price per kWh, (FY26E)	USD 110
	Fuel Price Inflation	Petrol – 7%
	Electricity Price Inflation	4%
	Avg. Servicing and Spare Cos/year (INR)	EV – INR 5k Petrol – INR 8k

Note: Nexon XM automatic model is used for TCO estimation

Source: Conversation with OEMs & Company research

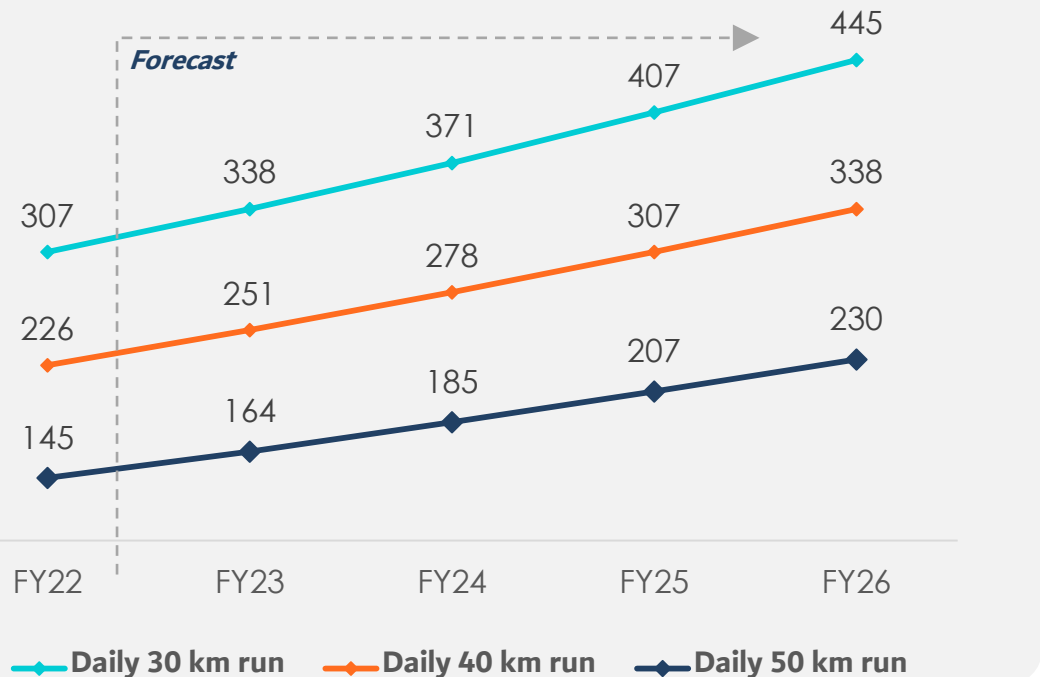


## Brand X – TCO comparison

Even when compared to the lowest priced ICE vehicles, Brand X is estimated to have a better TCO

### TCO Gap: Alto 800 – Brand X

INR '000, FY22-26F



(INR'000)

40 km Daily Run	FY22	FY23	FY24	FY25	FY26
TCO for Petrol(A)	764	796	830	867	905
TCO for EV X (B)	537	546	554	563	572
TCO Savings (A-B)	227	250	276	304	333

Salvage value of an EV car is likely to be dependent on various factors like-

- Availability of second life for the EV car batteries
- Forecasted decrease of battery prices
- GST rates of the government on the EV cars

Salvage value for an EV might be better compared to ICE considering the growing fuel prices, higher battery life (warranty for 8 years v/s lifetime of 5 years considered in TCO estimates)

Area	Parameter	Assumption
<b>General</b>	Vehicle Ownership Period	5 years
	Salvage Value after 5 years	EV- 40% ICE – 35%
	Distance covered per day	30-50 km
	Discount Rate	10%
<b>Battery</b>	Range	170 Km
	Mileage	Petrol: 20 km/l EV: 11 km/kWh
	Capacity	16 kWh
<b>Cost of Operation</b>	Fuel Price Inflation	Petrol – 7%
	Electricity Price Inflation	4%
	Avg. Servicing and Spare Cos/year (INR)	Brand X – 18k Alto 800 – 7.5k

Note: Discount rate of 10% is used for NPV calculations

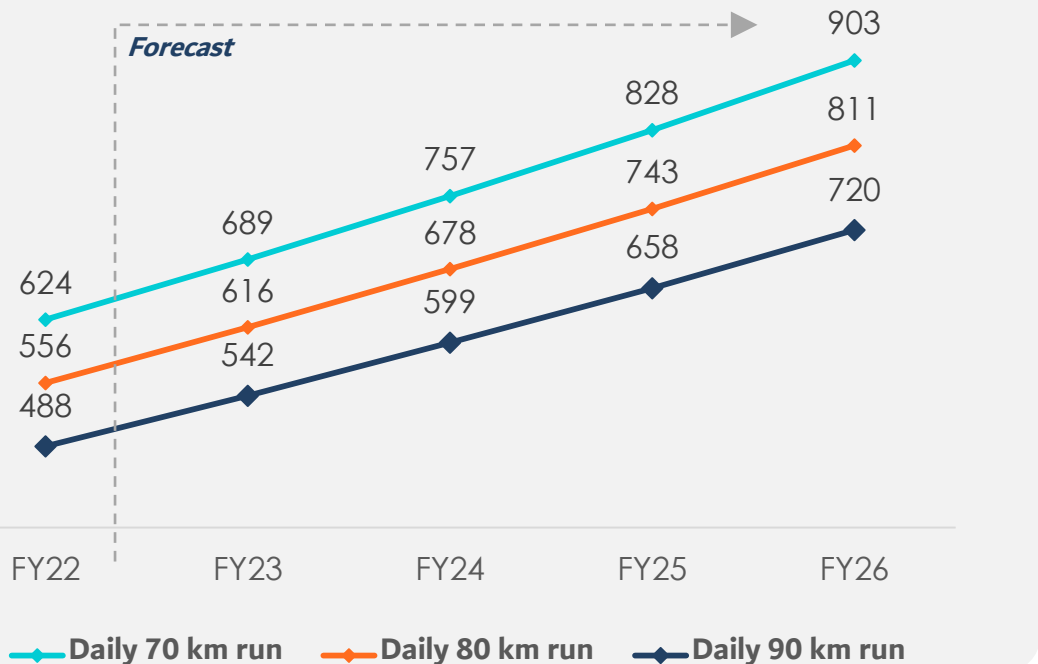
Source: Conversation with OEMs & Company research

## Brand X Cargo – TCO comparison

Even when compared to the lowest priced ICE vehicles, Brand X is estimated to have a better TCO

### TCO Gap: Piaggio Ace ICE – Piaggio Ace Extra EV

INR '000, FY22-26F



(INR'000)

40 km Daily Run	FY22	FY23	FY24	FY25	FY26
TCO for Petrol(A)	848	874	901	928	957
TCO for EV X (B)	362	350	340	330	321
TCO Savings (A-B)	486	523	561	598	636

Salvage value of an EV car is likely to be dependent on various factors like-

- Availability of second life for the EV car batteries
- Forecasted decrease of battery prices
- GST rates of the government on the EV cars

Salvage value for an EV might be better compared to ICE considering the growing fuel prices, higher battery life (warranty for 8 years v/s lifetime of 5 years considered in TCO estimates)

Area	Parameter	Assumption
<b>General</b>	Vehicle Ownership Period	5 years
	Salvage Value after 5 years	EV- 40% ICE – 35%
	Distance covered per day	70-90 km
	Discount Rate	10%
<b>Battery</b>	Range	85 - 95 Km
	Mileage	EV: 11.3 km/kWh ICE: 36 km/l
	Capacity	8 kWh
	Battery pack price per kWh, (FY26E)	USD 110
<b>Cost of Operation</b>	Fuel Price Inflation	Petrol – 7%
	Electricity Price Inflation	4%
	Avg. Servicing and Spare Cos/year (INR)	EV – INR 4k Petrol – INR 3.2k

Note: Piaggio App e-Xtra model is used for TCO estimation. Price calculated after deducting FAME subsidy

Source: Conversation with OEMs & Company research



## Conclusion

-----  
Promising investment opportunity with  
**Gensol.**

**Unique Business Model in the Sector**

**Only player in the market backed by renewable energy business group**

**Only player in the market within price range of INR 6 Lakh**

**Multifold financial growth capability**

**Efficient management with domain expertise**

**Offering cost-effective pricing model, Market fit solution**



Empowering **Future**  
Exploring **Energy Alternatives**

[www.gensol.in](http://www.gensol.in)

Investor Memorandum | Jun'22



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# Annexure I

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## Safety of Gensol EV as per the Technical Report



Basis crash testing as part of the technical due diligence conducted by Hestocon Certification Services, Gensol EV has a more than adequate safety factor ...

Impact	Safety Factor	Description
Front Impact	1.24	It highlights that the frame will maintain its integrity even under an extreme car crash condition
Rear Impact	2.096	It ensures that the rear side of vehicle will absorb the rear impact and will maintain safety of occupants
Side Impact	3.79	The calculated safety factor for side impact is 3.79. It is more than adequate

...this is achieved through a vehicle frame made of high strength steel alloy and tubular chassis design which allow for greater torsional rigidity.

### Chassis Strength Particulars

#### Chassis design

- Gensol EV's chassis is a tubular, space frame chassis
- The key component of a space frame chassis is that its members are always in tension or compression

#### Chassis material

- It employs a mixture of ladder chassis and a monocoque, with sheet metal fixed to chassis elements to provide additional strength

#### Use case

- Space frame chassis are often employed in race car vehicles as they provide the best weight to rigidity ratio.

From the above analysis, we can conclude the Gensol EV's chassis is very robust, designed to withstand very high loads and keep the occupants safe in the event of a frontal collision.

### Vehicle Frame Strength Particulars

#### Frame material

- Gensol EV's frame is made of a high strength steel alloy called 4130 alloy steel
- It is used in a wide range of industries including automotive and aerospace

#### Torsional rigidity

- Gensol EV's torsional rigidity of the frame is 5219.62 Nm/deg
- When compared to similar tubular frame chassis:
  - BMW E36 Z3 has a torsional rigidity of 5,600 Nm/deg
  - Lotus Espirit SE Turbo has a torsional stiffness of 5,850 Nm/deg
  - Chrysler Durango has a torsional stiffness of 6,800 Nm/deg

From the above analysis, we can conclude that cabin area of the vehicle retains its structural integrity and the front structure collapses to absorb most of the impact in case of a crash.





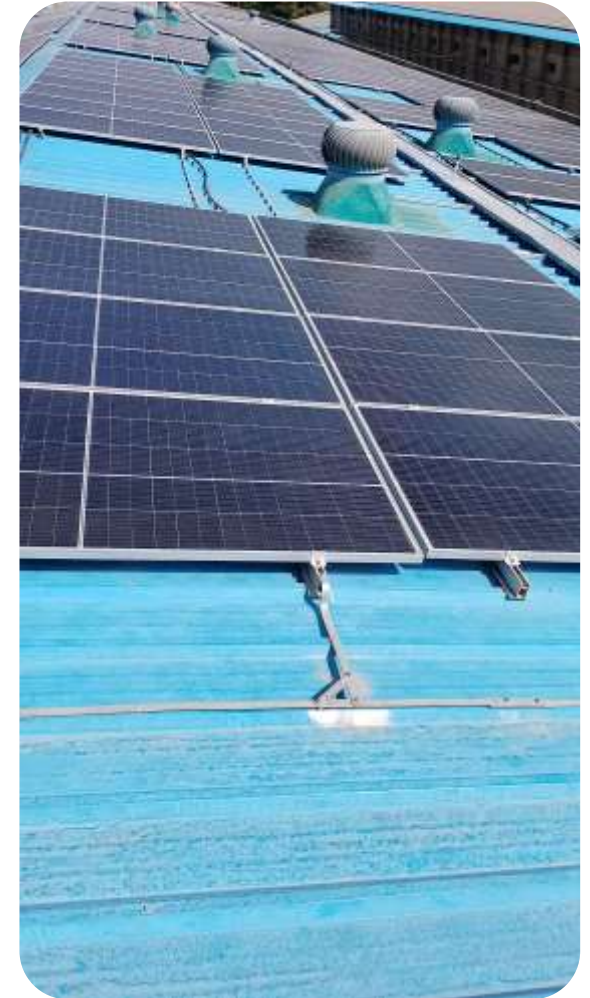
# Annexure II

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## Project Snapshots









## Solar EPC Services – Key Projects



# 12,400 kWp | KP GROUP, Ranada, Gujarat

KP Energy is a focused energy company with a strong profile in renewable. We have activities primarily in Gujarat (India). We aim to create value for our customers, shareholders and the communities in which we operate. Our strategy focuses on identifying and growing areas of activity where we have key competences and value propositions differentiating us from our competitors. Gensol has executed their 12.4 MWp Ground mounted Solar PV plant installed in 37 Acre of land area located in Ranada, Gujarat.



## Solar EPC Services – Key Projects



# 40,000 kWp | Golden Hatcheries, Bangalore, Karnataka

Golden Hatcheries, as someone with huge pile of cash wanted to invest in the upcoming solar technology, firmed up plans to develop a 40 MWp solar park and sell power to large private players like Airtel. Golden Hatcheries appointed Gensol for the execution of this esteemed project, keeping in mind its prior experience in Karnataka and strong hold on the nuances of project development.



## Solar EPC Services – Key Projects



### 8,500 kWp | Astral Pipes, Pan India

Astral Pipes specializes in manufacturing world class plumbing, drainage, fire sprinkler and conduit piping systems for both residential and commercial applications, CPVC piping systems for industrial applications and column and pressure piping systems for agriculture applications. Astral pipes embraces latest international technology and provides quality piping solutions made for varied needs of the markets. The project was been executed by gensol group total of 8.5 MWp of the different locations Ghiloth, Santej, Dholka, Sanghli.



## Solar EPC Services – Key Projects



# 6,700 kWp | Shree Cement LTD, Haryana, Panipat

Shree cement limited is one of india's Top three cement producers and among the fastest growing company. They trusted gensol's technical prowess to design and install this solar plant on a ground mounted by the expertise of engineering.





## Solar EPC Services – Key Projects



### 8,468 kWp | Shree Cement LTD, Haryana, Panipat

SRF Ltd in Manali & Gummidipoondi, Chennai & Viralimalai, Trichy, Malanpur Gwalior is known to its customer base. The business came into existence in 1976 and has, since then, been a known name in its field. The business strives to make for a positive experience through its offering. Gensol Team has made a great efforts to execute their 8.468 MWP solar plant on the ground mounted which is now successfully implemented.



## Solar EPC Services – Key Projects

### 520 kWp | BREDA Patna, Bihar

(BREDA) Bihar Renewable Energy Development Agency, has been established to promote development of schemes non-conventional energy sources. It has been nominated as nodal agency to carry out the remote village electrification program. Gensol has executed their 0.52 MWp on Floating solar system though it was a difficult task that was successfully executed by Gensol team.



## Solar EPC Services – Key Projects

# 1,756 kWp | Mundra Solar PV Limited, Mundra, Gujarat

Mundra Solar PV Limited has appointed Gensol for EPC service for their emphasized solar PV plants at their manufacturing plant. This project is a multi component project which has shown the expertise of Gensol's rooftop, ground mounted and Carport (Superstructure MMS with Bifacial Solar PV modules) engineering & execution skills.

