



GREEN ENERGY & **POWER** VALUE CHAIN



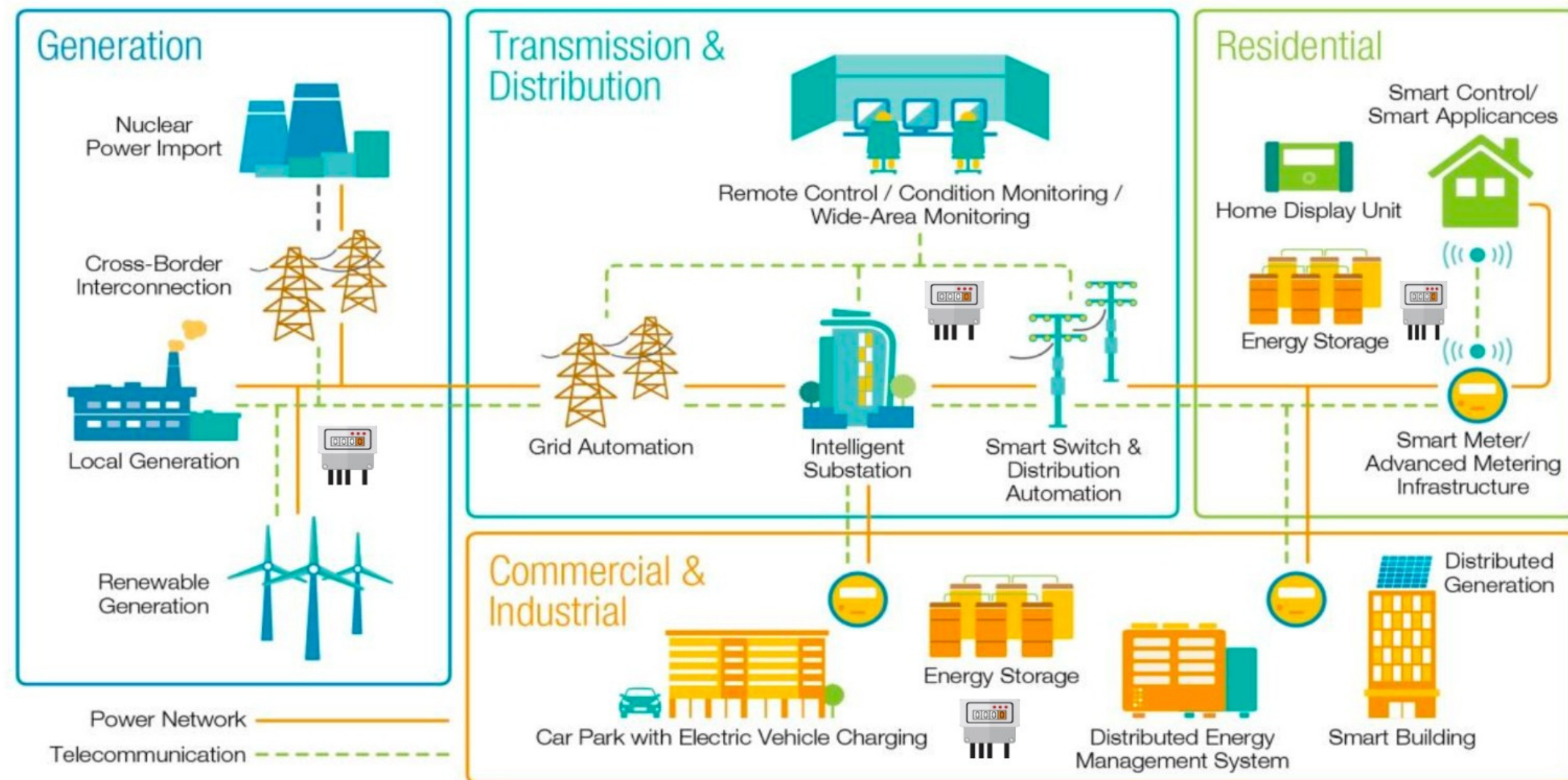
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Global Smart Meter: Market Trends



Opportunities Around

Generation

Transformers

Transmission and
Distribution

Storage

Cables and Wires

Components
Landscape

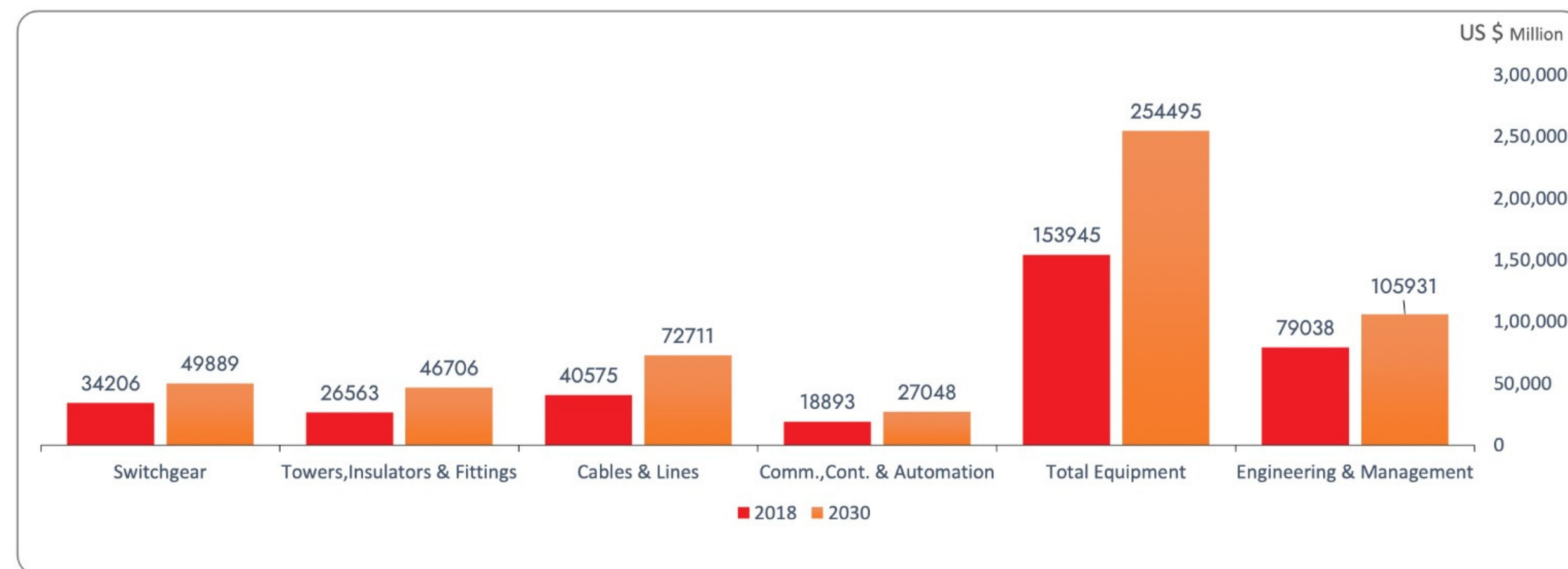


Why T&D CapEx is Accelerating?

T&D: Global (Cont.)



This is how the T&D investment are organized. The number of companies capable of supplying the equipment necessary is decreasing and there is sufficient business for all the companies which are offering quality and reliability.



- In the US, the investments in T&D systems by major utilities has risen over the last two decades to \$51 bn annually, but this figure needs to increase significantly more.
- More EVs mean higher electricity demand and T&D infrastructures must be prepared to handle the load.



Hybrid Projects are Coming up

Wind-Solar Hybrid

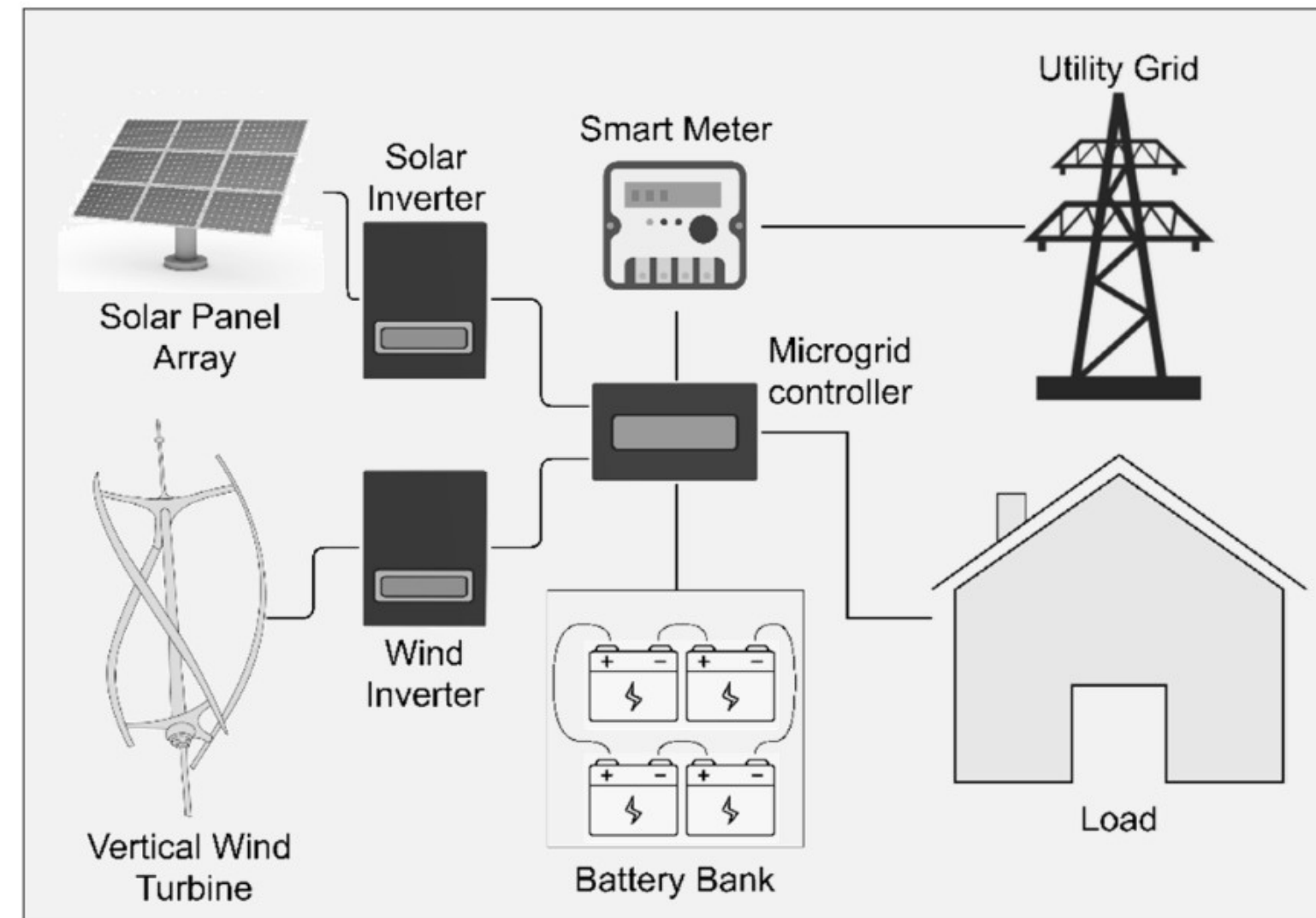
3.30 MW
Wind Turbine

2.80 MWp
Solar Energy



Roof-top Solar

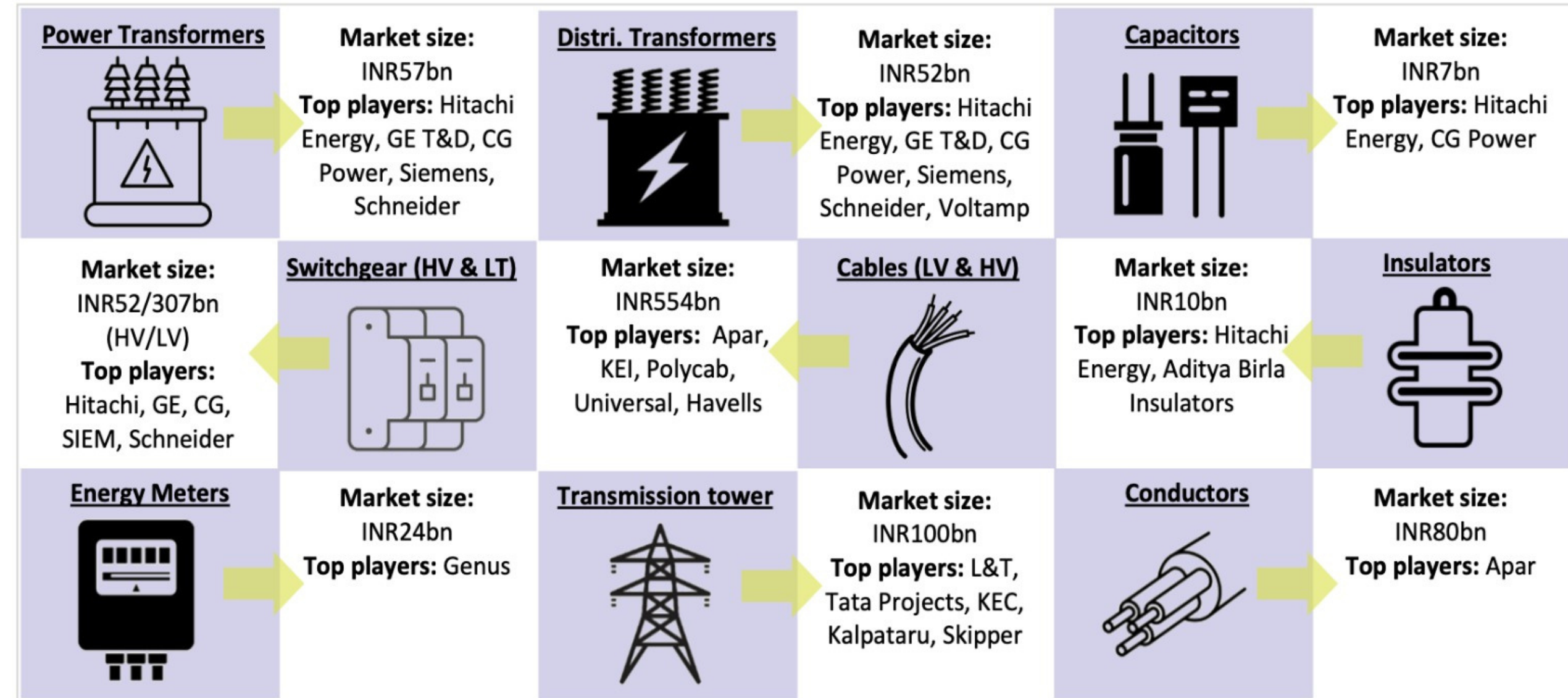
5.13 MW
Roof-top Solar





Industry Challenges with Renewables

Exhibit 30: Value chain (FY22): Product-wise market size with top players

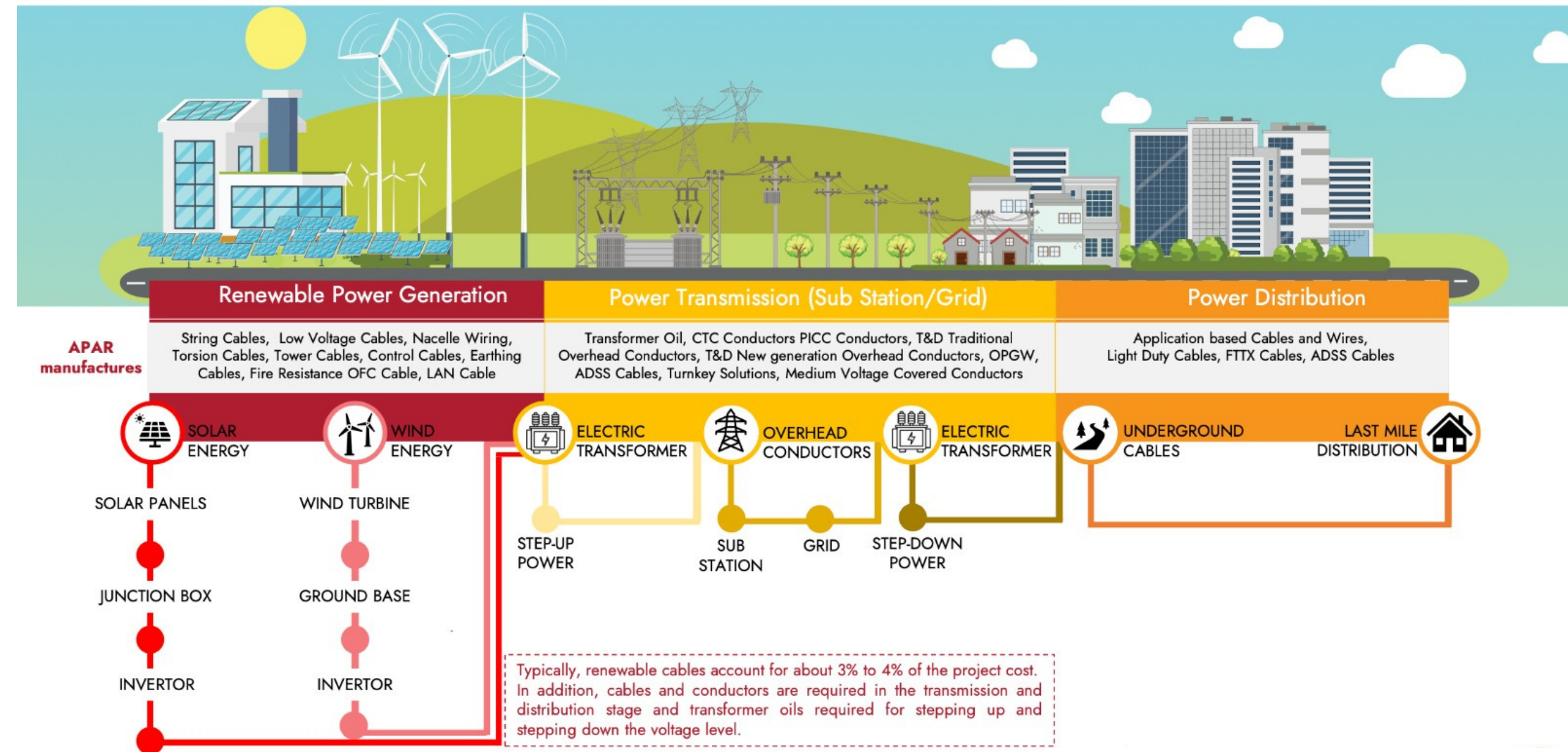


Source: IEEMA, Nuvama Research



Strong Opportunity Across All Business Verticals

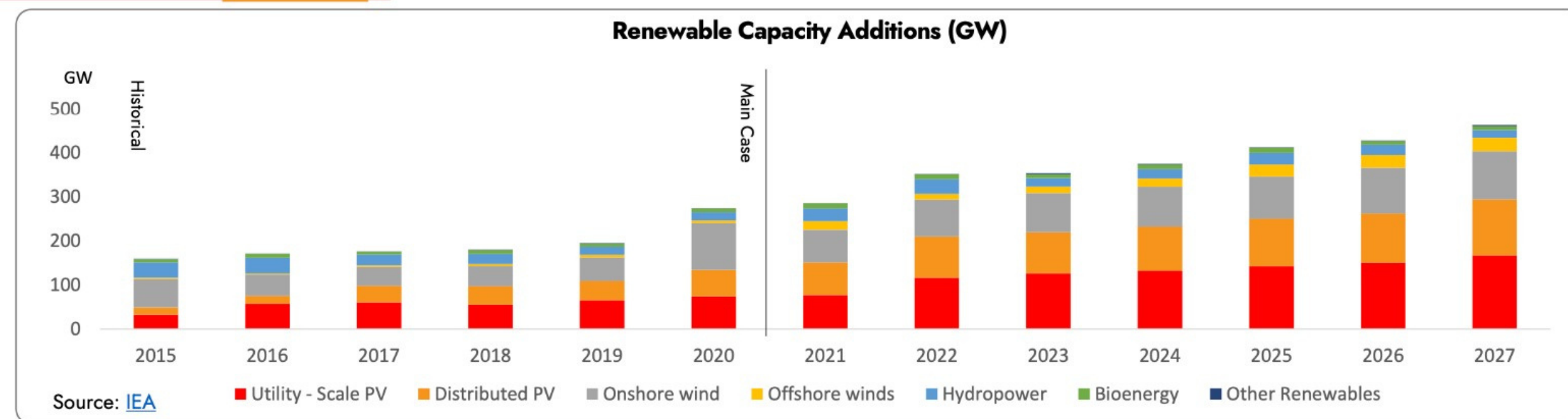
Renewables – strong opportunity for all business verticals



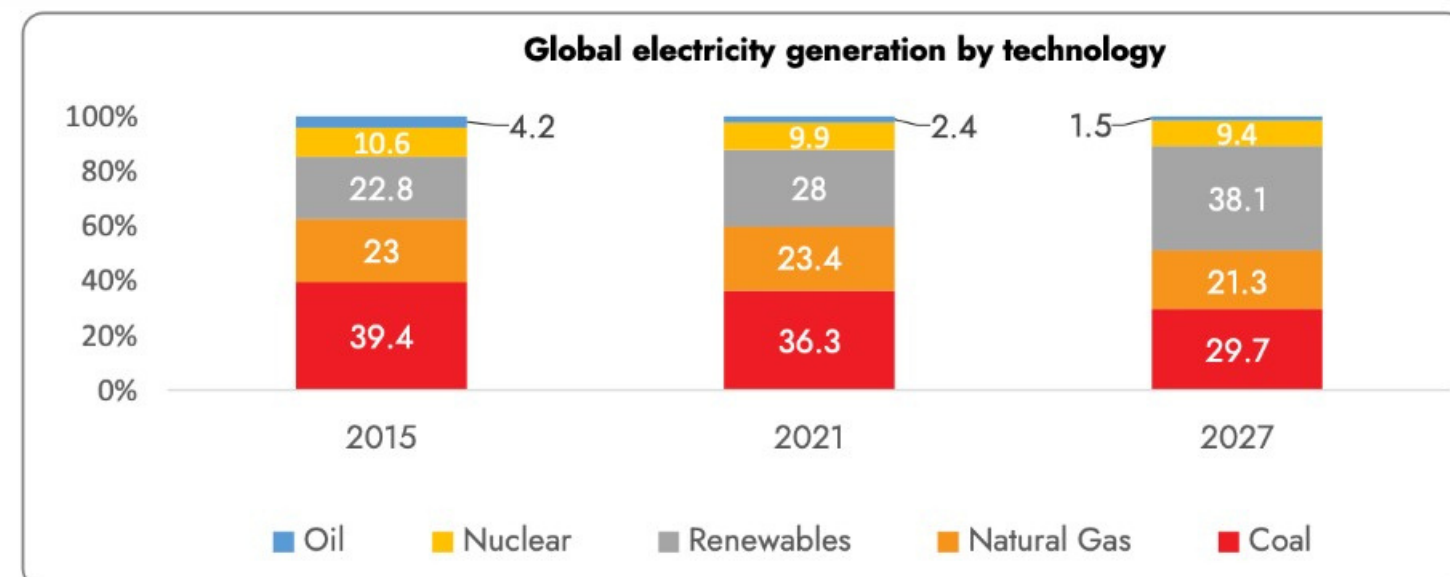


Renewable Capacity shares to Increase Globally

Globally, Renewable Energy share to increase from 28% to 38%



- Energy crisis fuels global renewables growth, 2,400 GW expected 2022-2027. With expected 400 to 500 GW annually.
- Global renewables to rise: 28% (2021) to 38% (2027), curbing coal, gas, stabilizing emissions, lowering CO2 intensity.





4 REASONS WHY COPPER IS PREFERRED?

DUCTILITY

It can be rolled into sheets and pulled into wires without breaking.

Copper is low on reactivity scale. corrosion is minimal due to a natural protective coating.

LOW REACTIVITY

ELECTRICAL CONDUCTIVITY

The transfer of electromagnetic energy is strongest when there is little resistance.

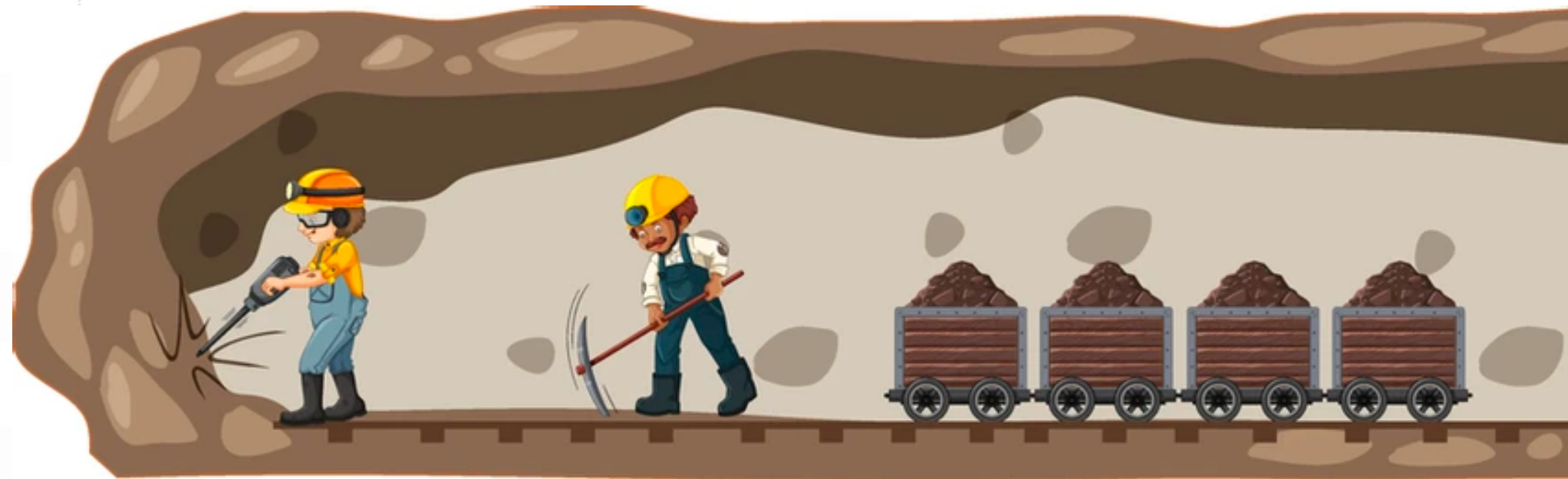
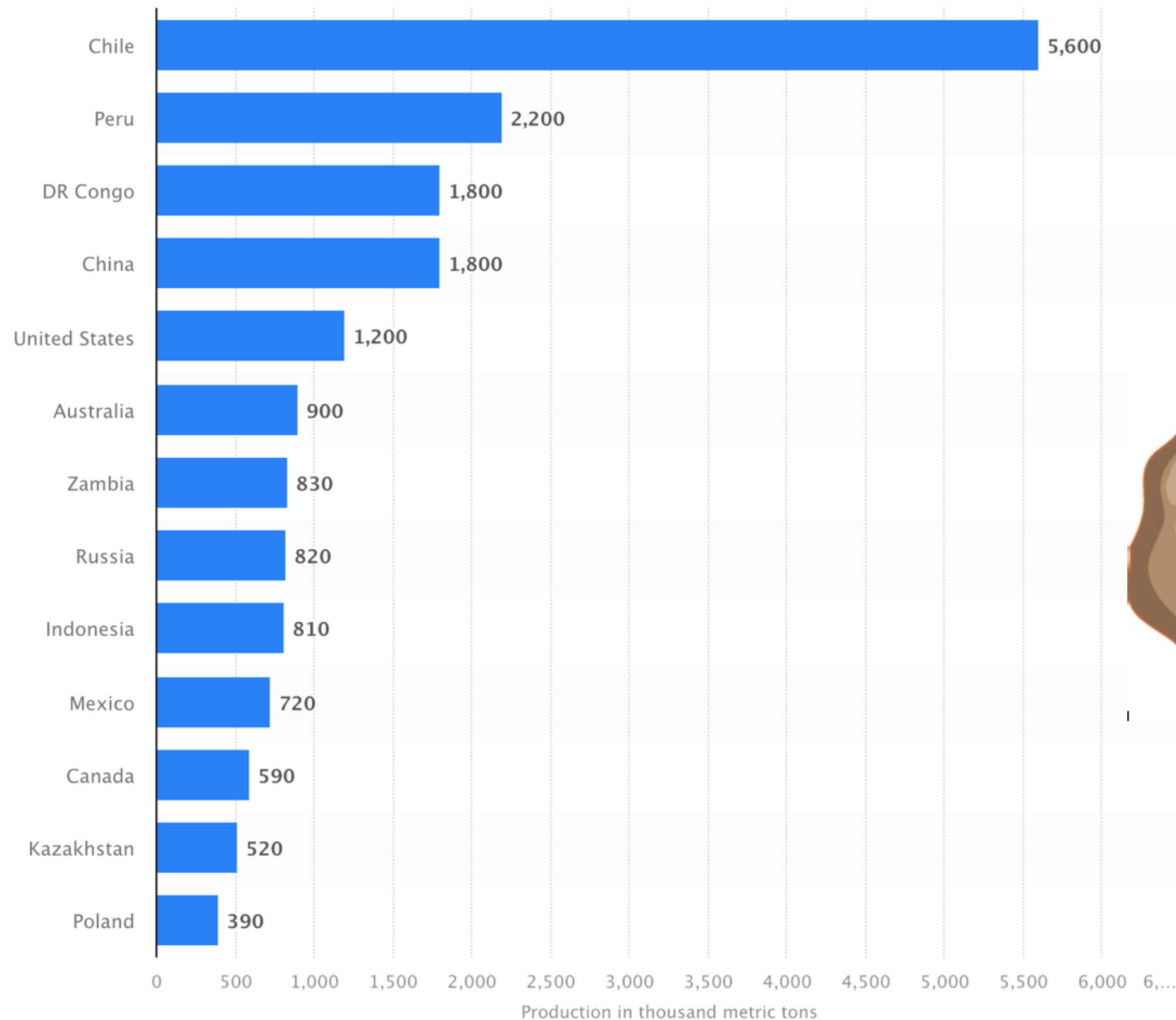
Copper facilitates transmission of heat energy

THERMAL CONDUCTIVITY



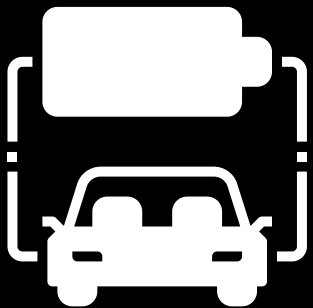
Major Countries in Copper Mine Production Worldwide in 2021

(in 1,000 metric tons)

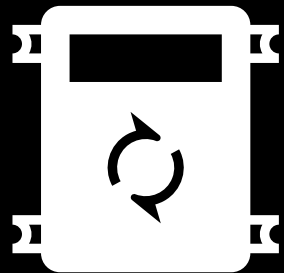


CREDITS: STATISTA

END USAGE: ELECTRIC VEHICLES



**EV
BATTERIES**



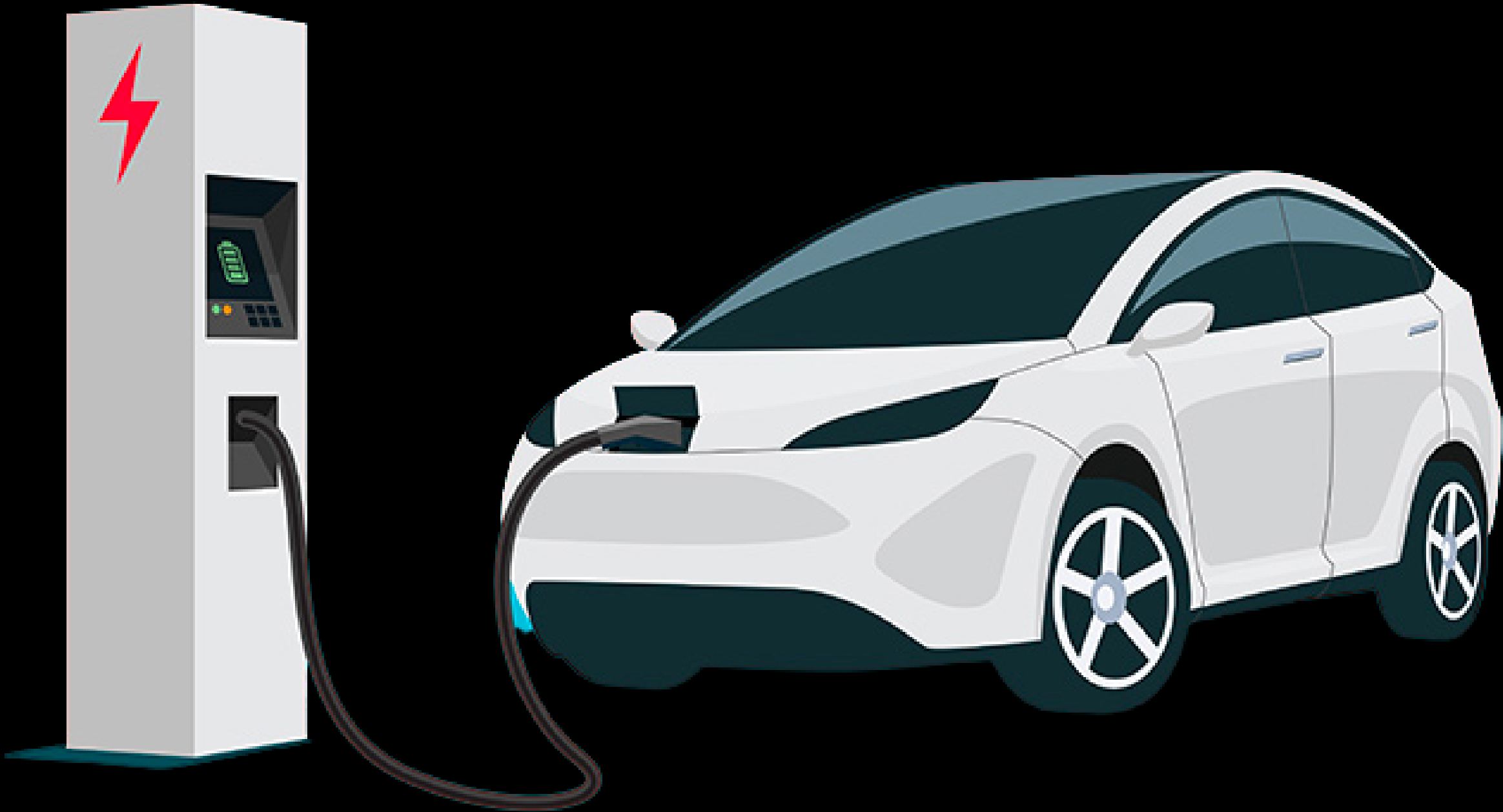
INVERTERS



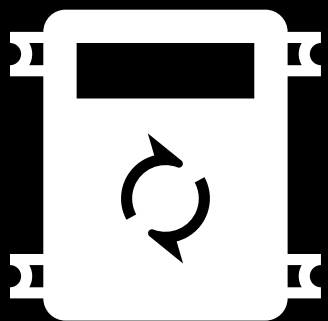
**MOTOR
COILS**



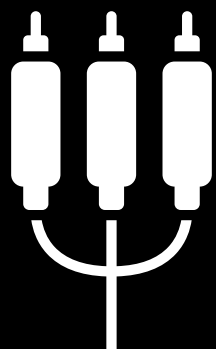
WIRING



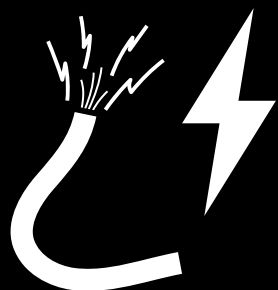
END USAGE: SOLAR TECHNOLOGY



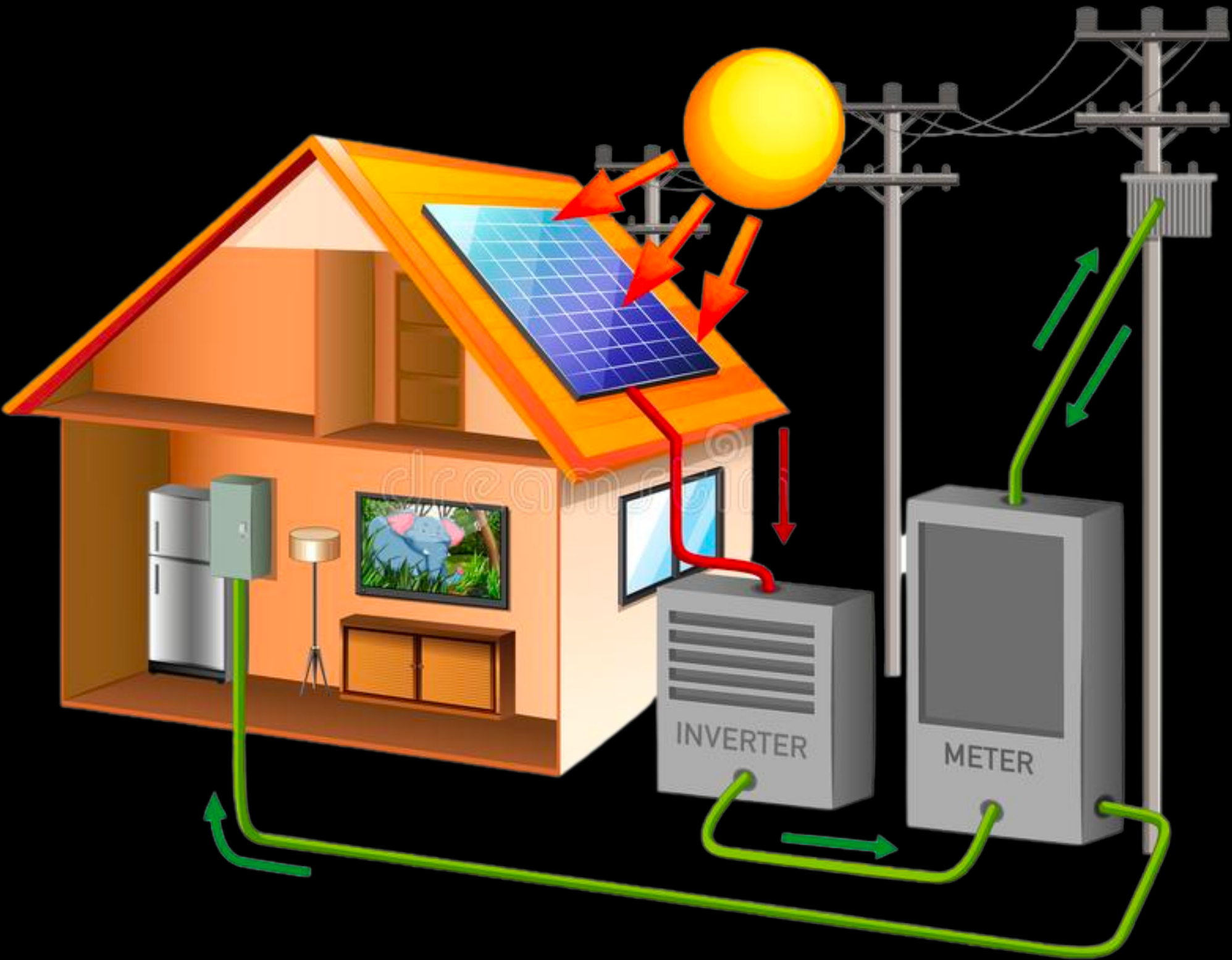
INVERTERS



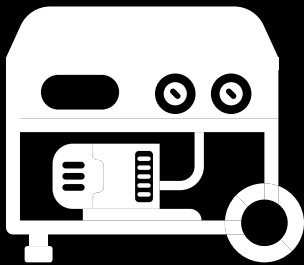
INTERCONNECTORS



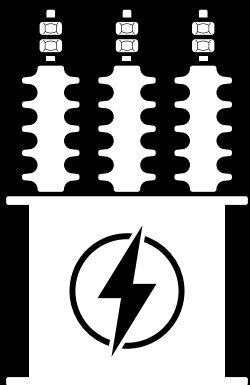
WIRING



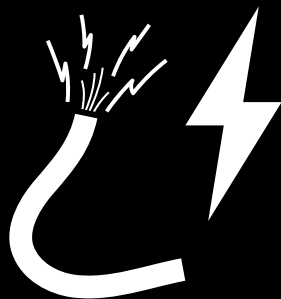
END USAGE: WIND FARMS



GENERATORS



TRANSFORMERS



WIRING



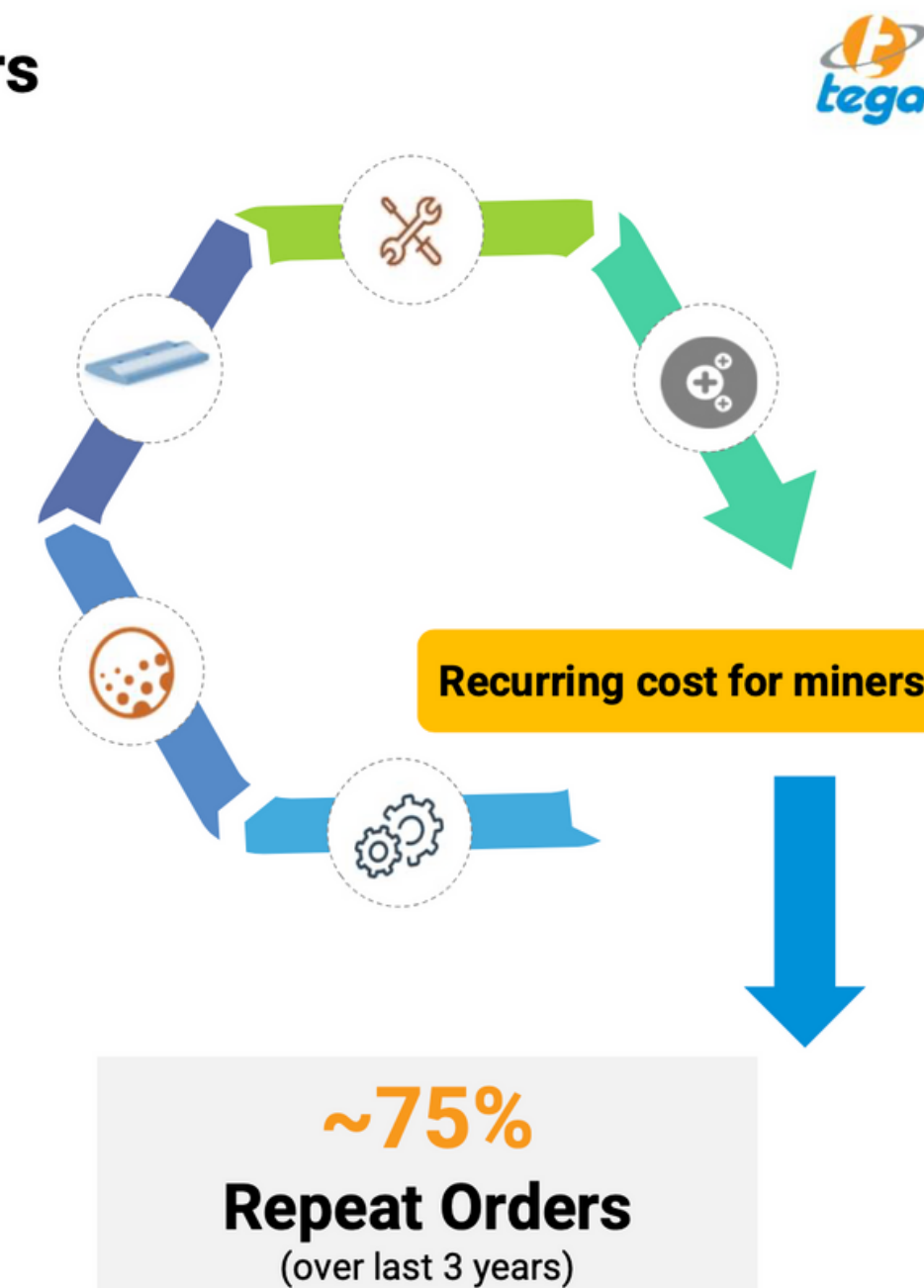
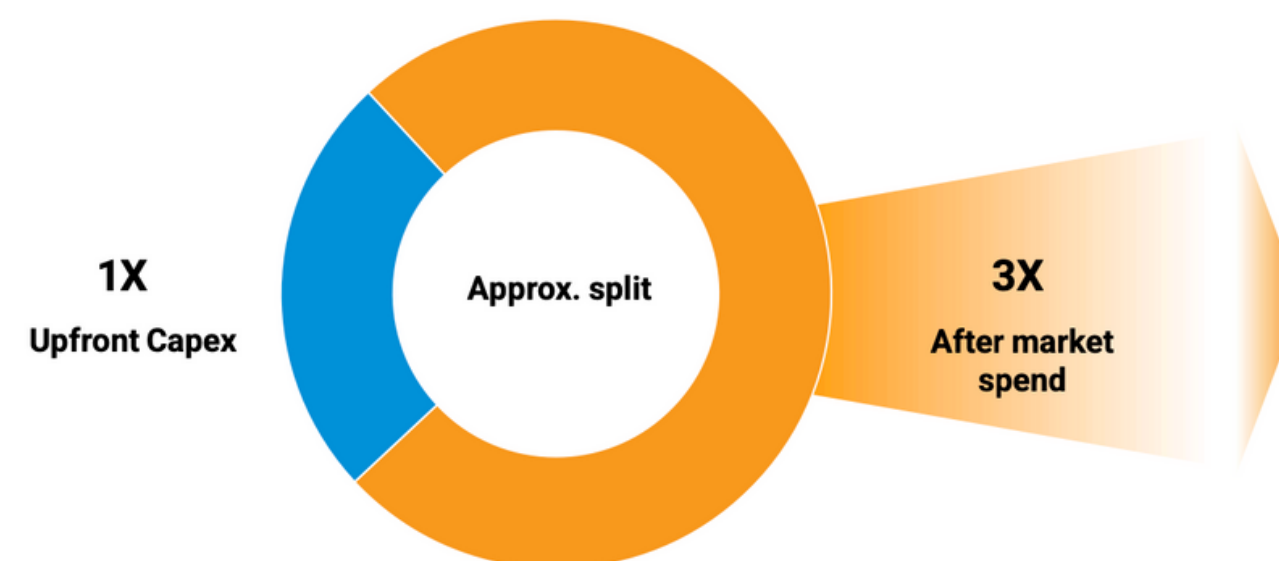


A Play on Copper

2

Insulated from Capex Cyclicality of Mining Players

Upfront capex & After-market spend over the lifecycle of a mill





Product Portfolio

1

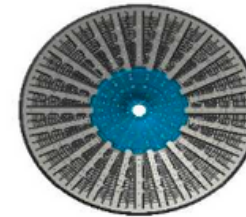
Diverse & Innovative Products

FLAGSHIP PRODUCTS

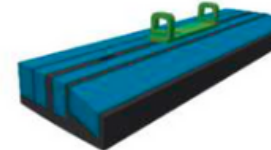
MILL LINERS



DynaPrime



DynaPulp

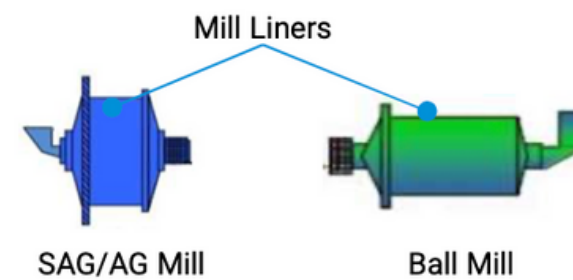


DynaSteel



DynaWear

Used in grinding mills for beneficiation of minerals

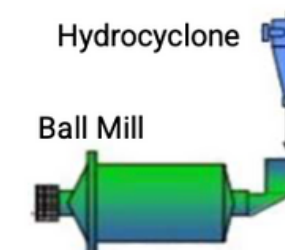


HYDROCYCLONES



Tega Cyclone (PEXEL)

Used for extracting or separating slurry particles



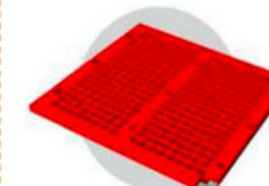
SCREENS & TROMMELS



Rapido

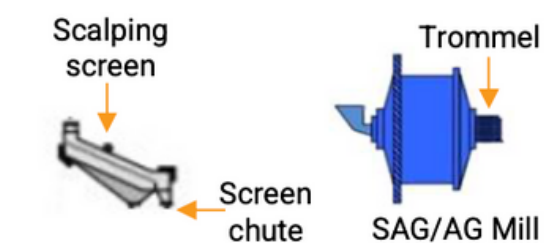


Trommel



Screening Solutions

Used for separation of particles according to sizes



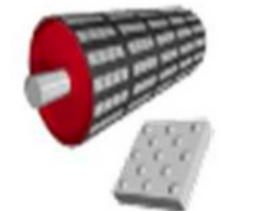
CONVEYOR PRODUCTS



Spillex



Centrax



Ceramic pulley lagging

Used with conveyor belts



Conveyor Belt



Hybrid Projects are Coming up

SECTOR OPPORTUNITY



- Solar Installed capacity is expected to grow by 225 GW & Wind installed capacity is expected to grow by 55 GW during 2024 to 2030 in India
- India aims 45% less carbon, 50% renewables by 2030, net-zero by 2070



- Global renewable energy addition growth is expected to grow by minimum 150 GW from 2024 to 2027
- Globally, renewable energy share to increase from 28% in 2021 to 38% in 2027 curbing coal, gas, stabilizing emissions, lowering CO2 intensity



- Extensive transmission and cable infrastructure to transmit power from remote generation sites to consumption centres
- Concentration of expansion happening simultaneously in G20 countries



Total Addressable Market in T&D India

Global investment in (T&D) infrastructure is expected to reach \$2.2Trillion next 10Years.

Key Drivers are:

Growing Demand of Electricity: 50% of demand will increase in next 10years

- Electrification of Transport System
- Economic growth
- Population Growth

Integration of Renewable Energy:

- Growing share of Renewables adding to Grid.
- Cost competitive to fossil fuel, Drive due to climate change.

Smart Grid:

- To improve efficiency & reliability of T&D Network.
- To minimize the losses and improve of quality of power of T&D Network.

Decarbonization of Power Sector:

- Power sector is under pressure to Decarbonize.
- Deployment of low carbon technologies like Solar, Wind power generation.



Total Addressable Market in T&D in the World

Indian Govt investment in (T&D) infrastructure is expected to reach \$30 Billion next 10Years.

Key Areas are:

Domestic Market

Construction of New Transmission & Distribution lines:

- 28000ckm of Transmission lines by 2028, 1,80,000km of distribution lines
- Which means 1.25 million MT Tx conductor requirements in next 5 years of Transmission lines

Augmentation of Existing Transmission lines:

- 18000ckm of Transmission lines are to be augmented
- Capacity and power quality of Existing Transmission line will be increased

Export Market

- Global Overhead Conductors market is around 4.5 million tons for next 5 years.
- APAR contributes 50% of total export from India.
- Top exports markets are USA, Australia.



CABLES & WIRES:USED EVERYWHERE



Intrinsic Compounding 🌟

@soicfinance



Cable demand is typically 3-4x higher for a 1 GW solar power plant than a conventional 1GW thermal power plant. And for the same energy requirement, the solar capacity required is at least 3-4x that of conventional thermal plant due to lower utilisation factors.

Cables&wires ⚡



CABLES & WIRES:USED EVERYWHERE

DIVERSIFIED USE INDUSTRIES



Power



Oil & Gas



Railways



Automobiles



Cement



Steel



Real Estate



Fertilizers



**Roads &
Highways**



Textile



Telecommunication



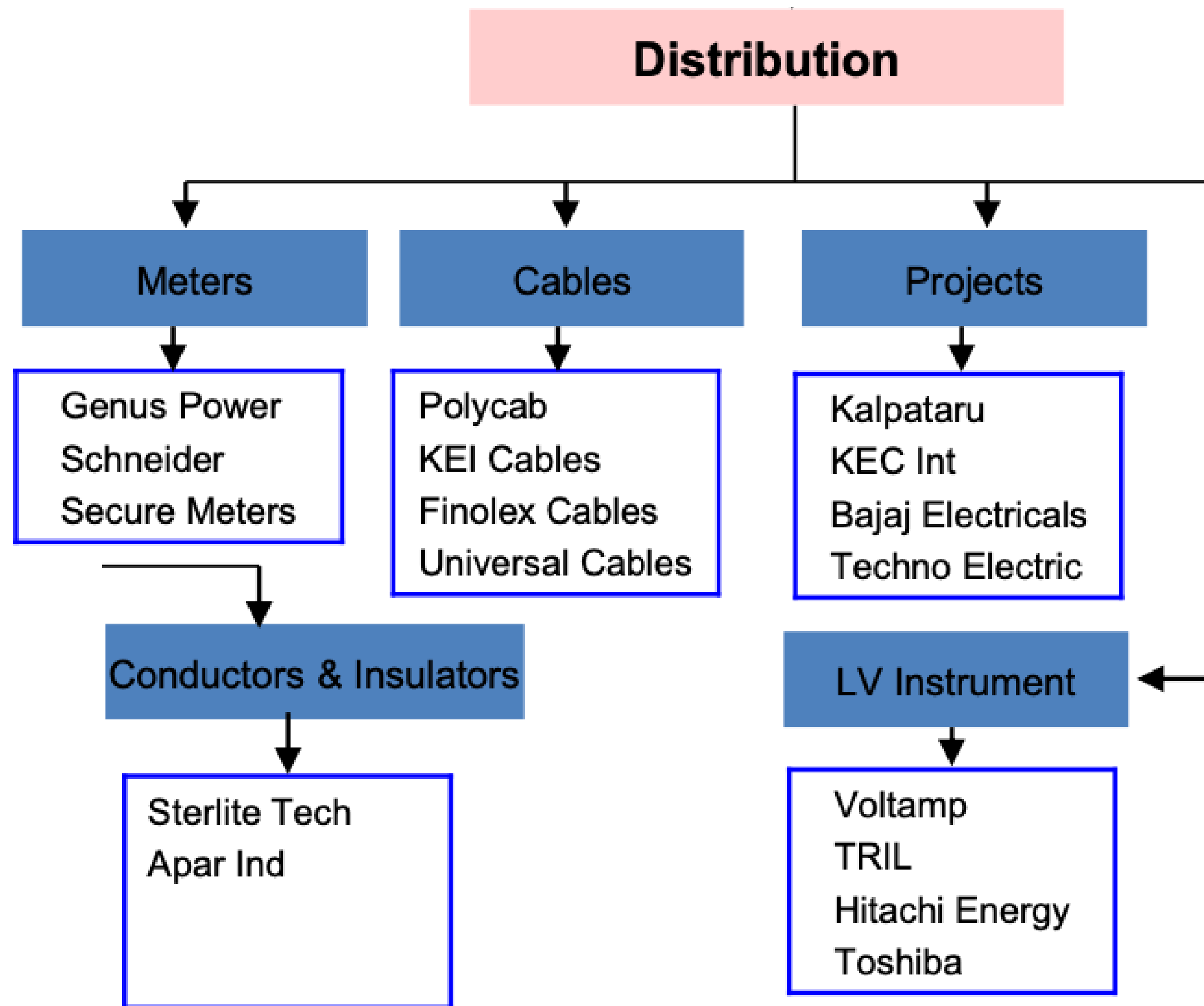
**Data
Centers**



**Renewable
Energy**



CABLES & WIRES:USED EVERYWHERE





CABLES & WIRES:USED EVERYWHERE

V. Balasubramaniam:

Okay. If I could just ask one more, pardon me for it. Some of your competitors have started talking about China plus one in wires and cables that a country like U.S wants to diversify our supply chains in terms of buying wires and cables. Are you facing these kinds of, are you getting queries from international clients that can you please export to us because we don't want to buy from, we want to buy less from China. So, this is something some of your competitors are actually highlighting.

Anil Gupta:

Yes, you are correct. We are also getting lots of inquiries and in the coming quarters and months and years, the export will go substantially. We have also started exports to U.S.A since February this year. And quarter-after-quarter, you will see our export has jumped to 17% of our sales, which was in earlier years it was only 10%. So, it will definitely be growing subject to, I mean, whenever we are able to feed them with our capacities.



CABLES & WIRES:USED EVERYWHERE



APAR Industries Limited
August 24, 2023

the global standards which is the EN standard which is the number one standard that operates globally. You have IEC, you have UL, you have CEE.

So we have products which meet all of these standards. So they allow us to participate not only in the Indian market but wherever this goes in the world. And in fact if you see the markets for us in terms of revenue, after India, the next largest is the United States and the third largest is Australia. If you look at the global renewable energy addition growth that is expected to happen, we are looking at 150 gigawatts from 2024 to 2027 and globally renewable energy share to increase from 28% to 38%. Basically substituting hydrocarbons in place and here wind in many countries around the world where you don't have the kind of sunshine that's there in Asia and in India etc. is going to be a very major player.

You see some of the largest wind turbine manufacturers are all located overseas. We deal with all of them. We have Vestas, you have Siemens Gamesa, you have Senvion, Envision which is a big Chinese player and they have set up manufacturing in India, Nordex and GE. GE are the world's largest wind turbine producer at the moment. They are also the largest exporter for cables and conductors from India and hope to continue this. So 50% of our revenues basically across all the three verticals comes from export.



CABLES & WIRES:USED EVERYWHERE

If you see what we have to offer with the leader in domestic solar cable segment, we are the most dominant player in the wind segment with over a 70% share. You will see a slide later on which kind of explains where these cables are used and our products are used in the whole network. The range that we have, it meets all



Industry Challenges with Renewables

Understanding Our Industry Challenges

CONNECTING RENEWABLES TO THE GRID

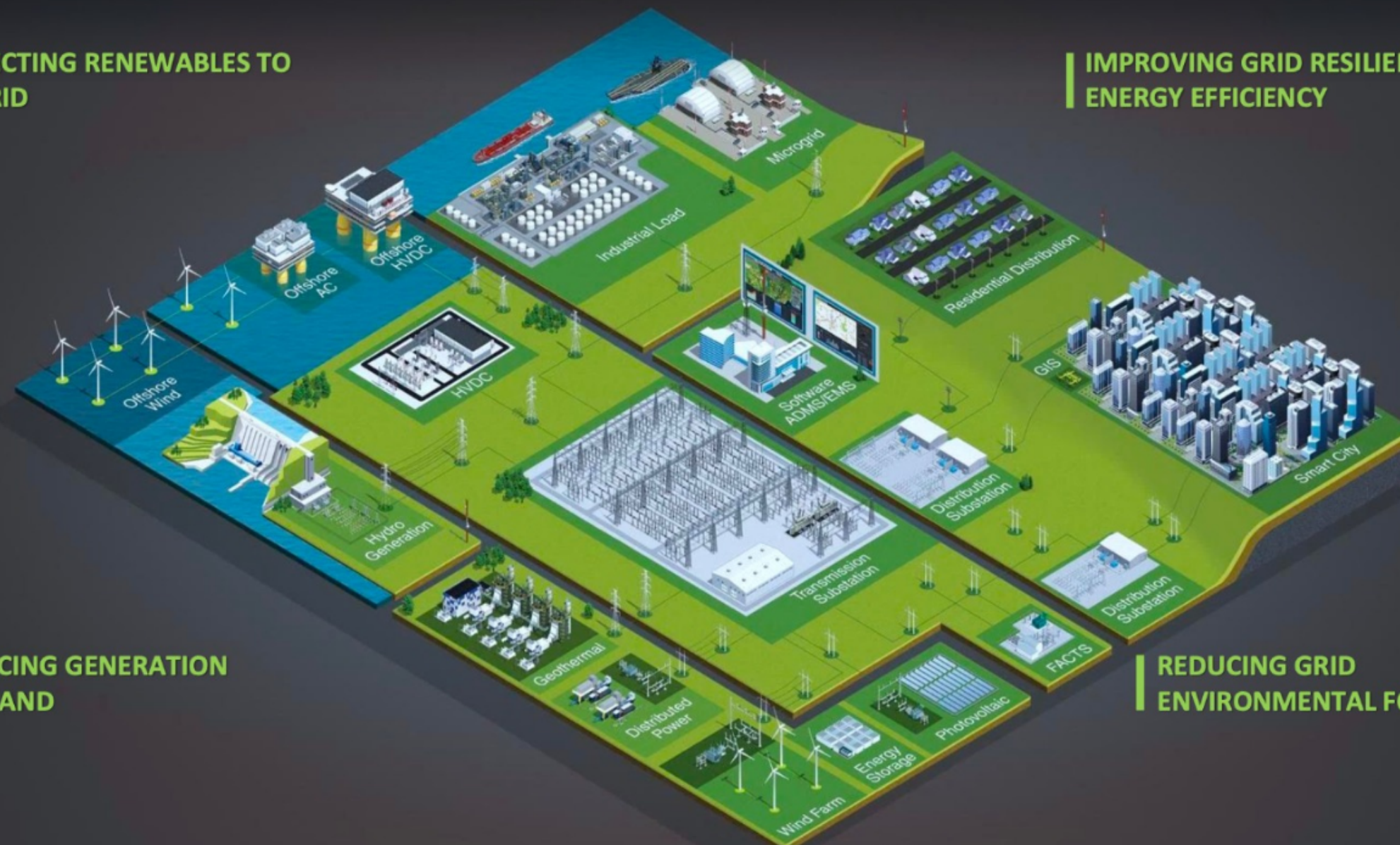
IMPROVING GRID RESILIENCE AND ENERGY EFFICIENCY

BALANCING GENERATION & DEMAND

REDUCING GRID ENVIRONMENTAL FOOTPRINT



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Industry Challenges with Renewables

BULK POWER TRANSFER TO INTERCONNECT REGIONS

HVDC - HIGH VOLTAGE DC TRANSMISSION SYSTEMS

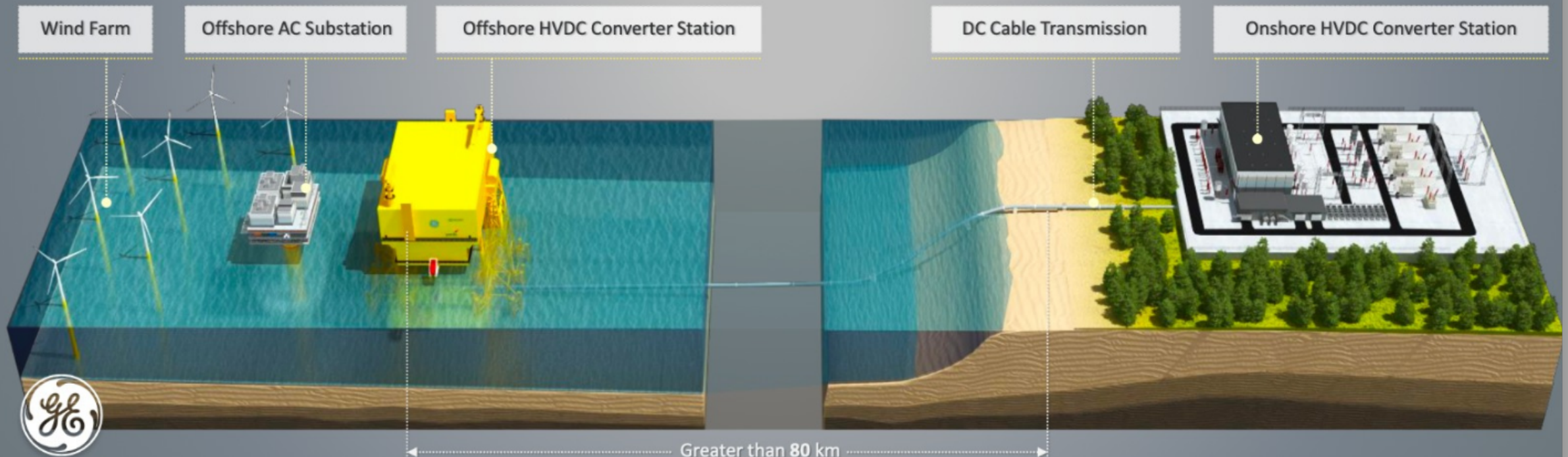
3x CAPACITY
OVER LONGER DISTANCES
LOWER COST

WORLD'S LONGEST DC LINK
(2,400 KMS)

WORLD'S 1st 3-TERMINAL
HVDC SYSTEM

WORLD'S HIGHEST RATED
SUBMARINE CABLE LINK (2000 MWatts)

WORLD'S 1st OVERHEAD LINE HVDC
USING DMR (800 kV, 3000 MWatts)





Total Addressable Market in T&D in the World

Need to Make



What is a smart meter?

By Venkatesh Ganesh

bl. BusinessLine / Nov 11, 2019

Global Smart Meter: Market Trends

**Shivalik Bimetal:
Shunts Supplier**

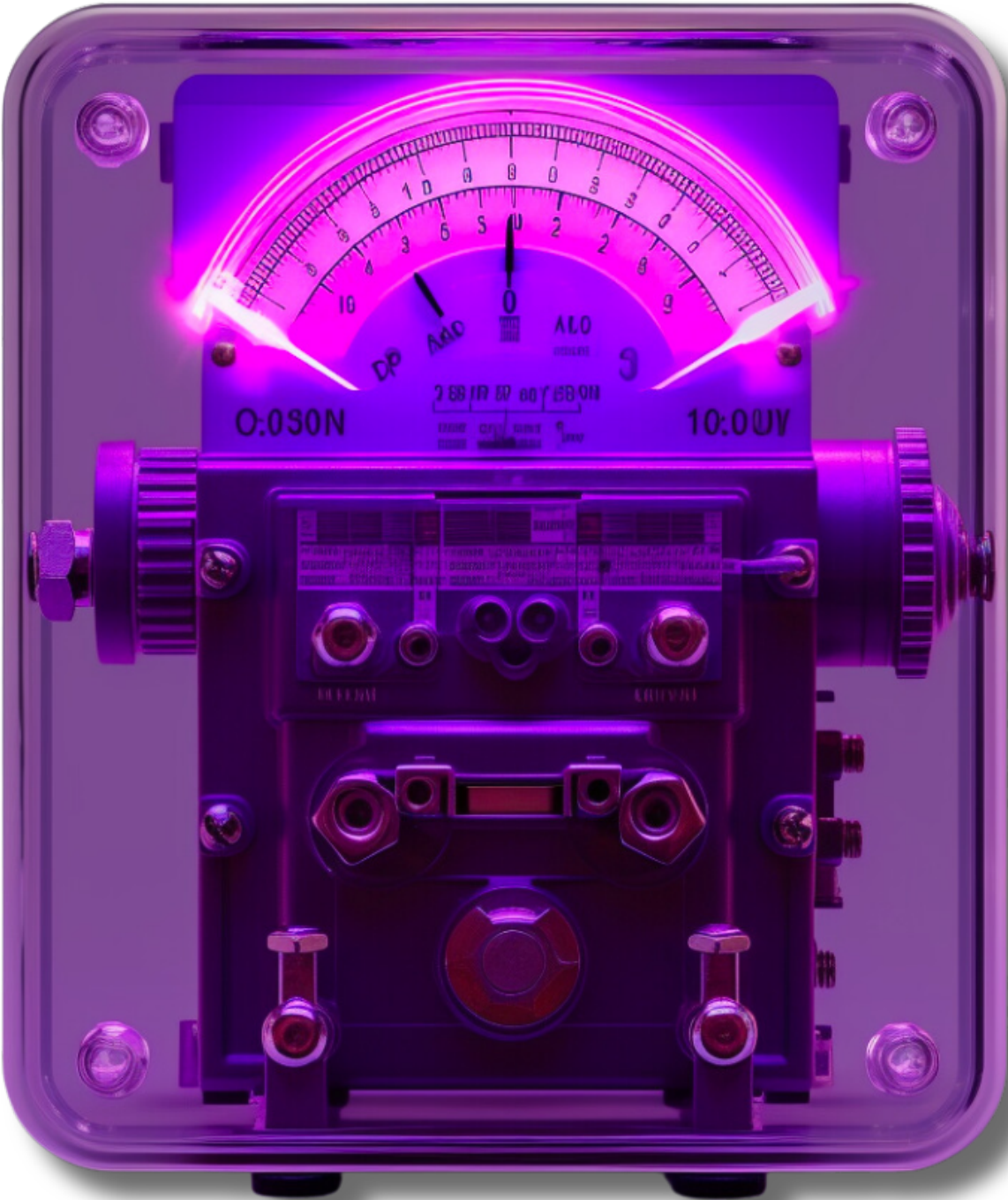
**Shivalik Bimetal:
Shunts Supplier**

**Permanent Magnets:
Current sensing modules &
modules value chain**

**Permanent Magnets:
Current sensing modules &
modules value chain**

**Permanent Magnets:
Current sensing modules &
modules value chain**

**Permanent Magnets:
Current sensing modules &
modules value chain**





Global Smart Meter: Market Trends

TRENDS & GROWTH DRIVERS

Global Smart Meters: Market Trends

CANADA
50% 6.2Mn

USA
88% 107Mn

EUROPE
50% 150Mn

INDIA
1.5% 3.7Mn

AUSTRALIA
20% 3.3Mn

INDIA STILL
LARGELY A
UNDERPENETRATED
MARKET FOR
SMART METERS

- Replacement of traditional meters with modern monitoring technologies to drive industry dynamics
- Smart grid networks, government regulations and directives for smart meter implementation will fuel market expansion

Source: GMI, Research and Markets
Smart Meters International

SM Penetration %

SM Installed

GLOBAL SMART METERS OPPORTUNITY (\$ BN)



GLOBAL SMART ELECTRICITY METERS OPPORTUNITY (\$ BN)





COMPRESSORS FOR CITY GAS DISTRIBUTION

Numbers don't tell the whole story.
But they do tell part of the story.

70%

INDIA MARKET SHARE FOR
AMMONIA REFRIGERATION

1st

INDIAN COMPANY APPROVED
FOR HYDROCARBON
REFRIGERATION SYSTEMS

1st

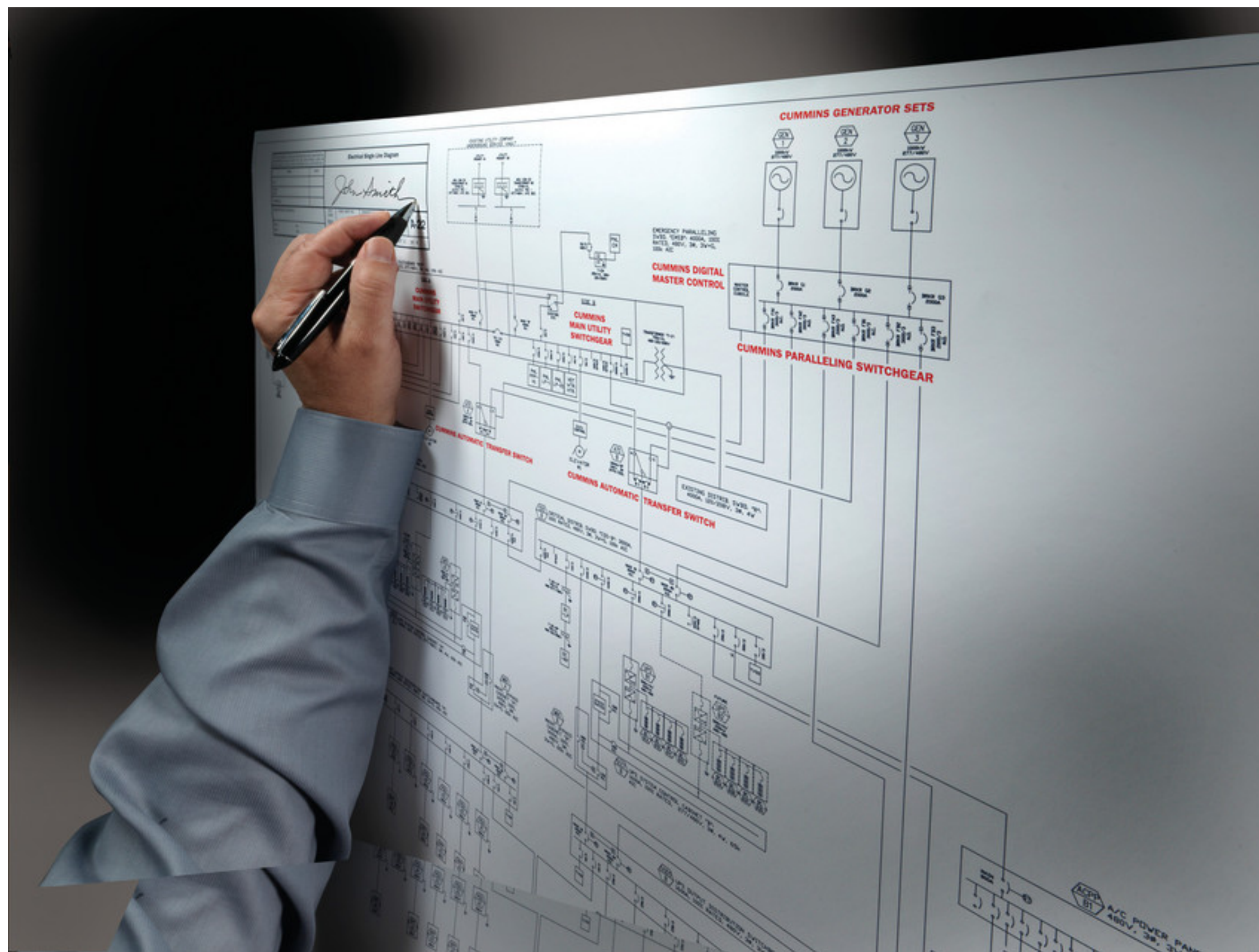
SUPPLIER OF TRACTION
GEARS TO INDIAN RAILWAYS

50%

CNG STATIONS IN INDIA ARE
POWERED BY KIRLOSKAR

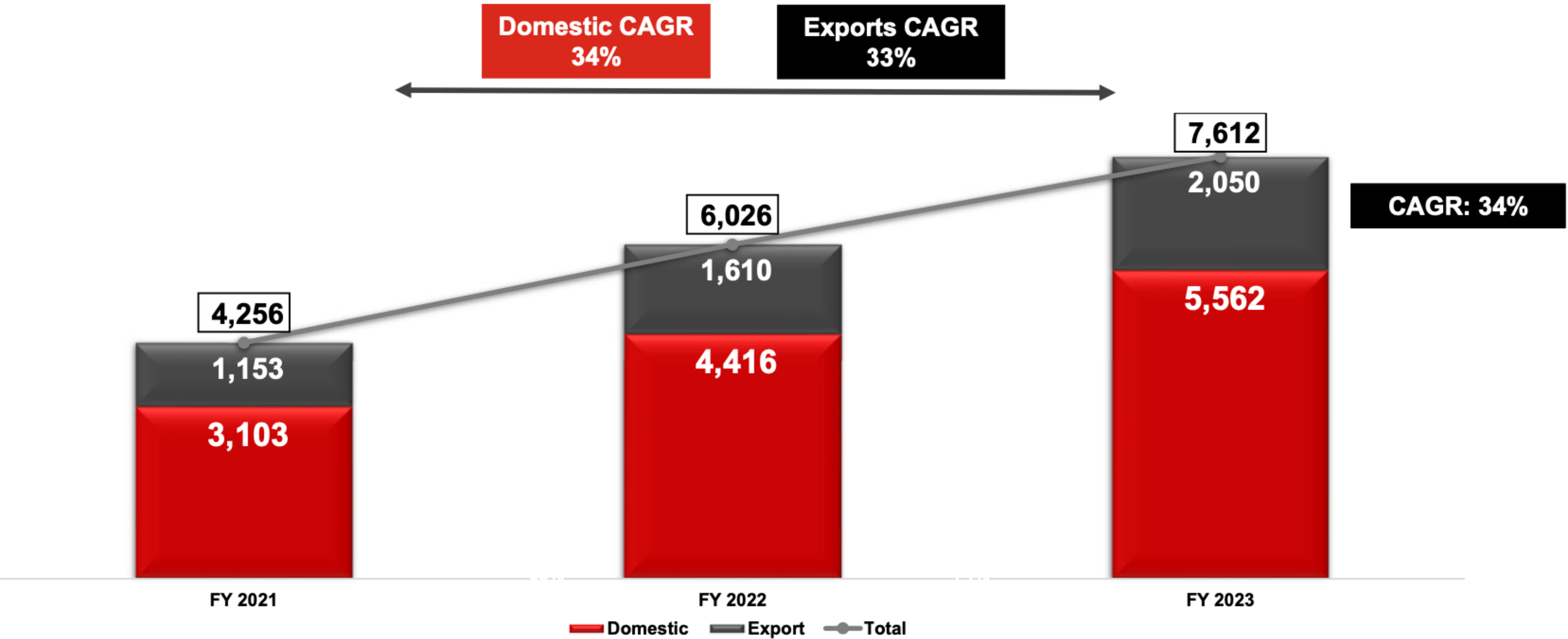


PROXIES: GENSETS



DOMESTIC VS EXPORTS TREND

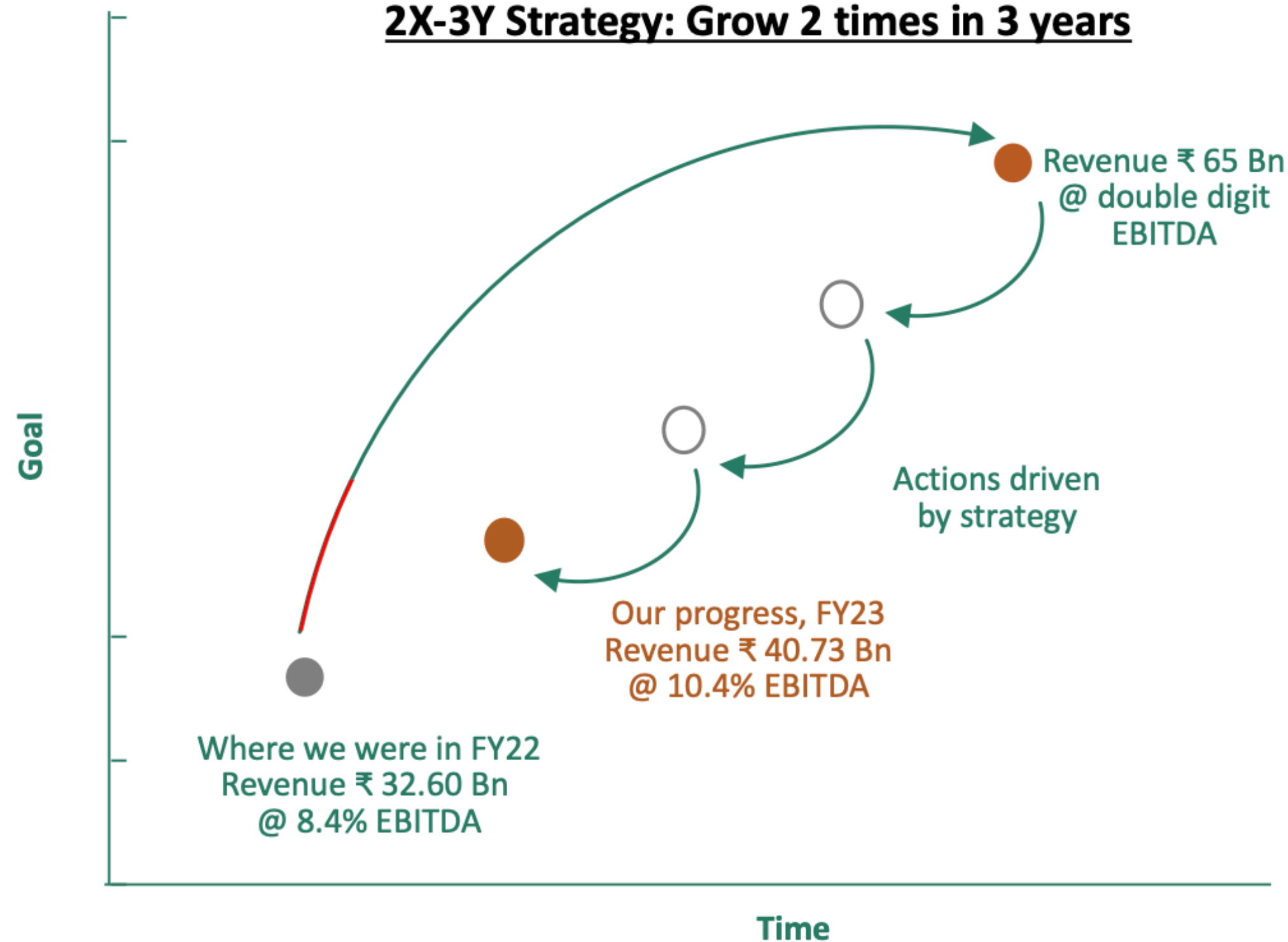
Figures are in ₹ Crores



OUR 2X-3Y STRATEGY

Looking to drive exponential growth over the next 3 years

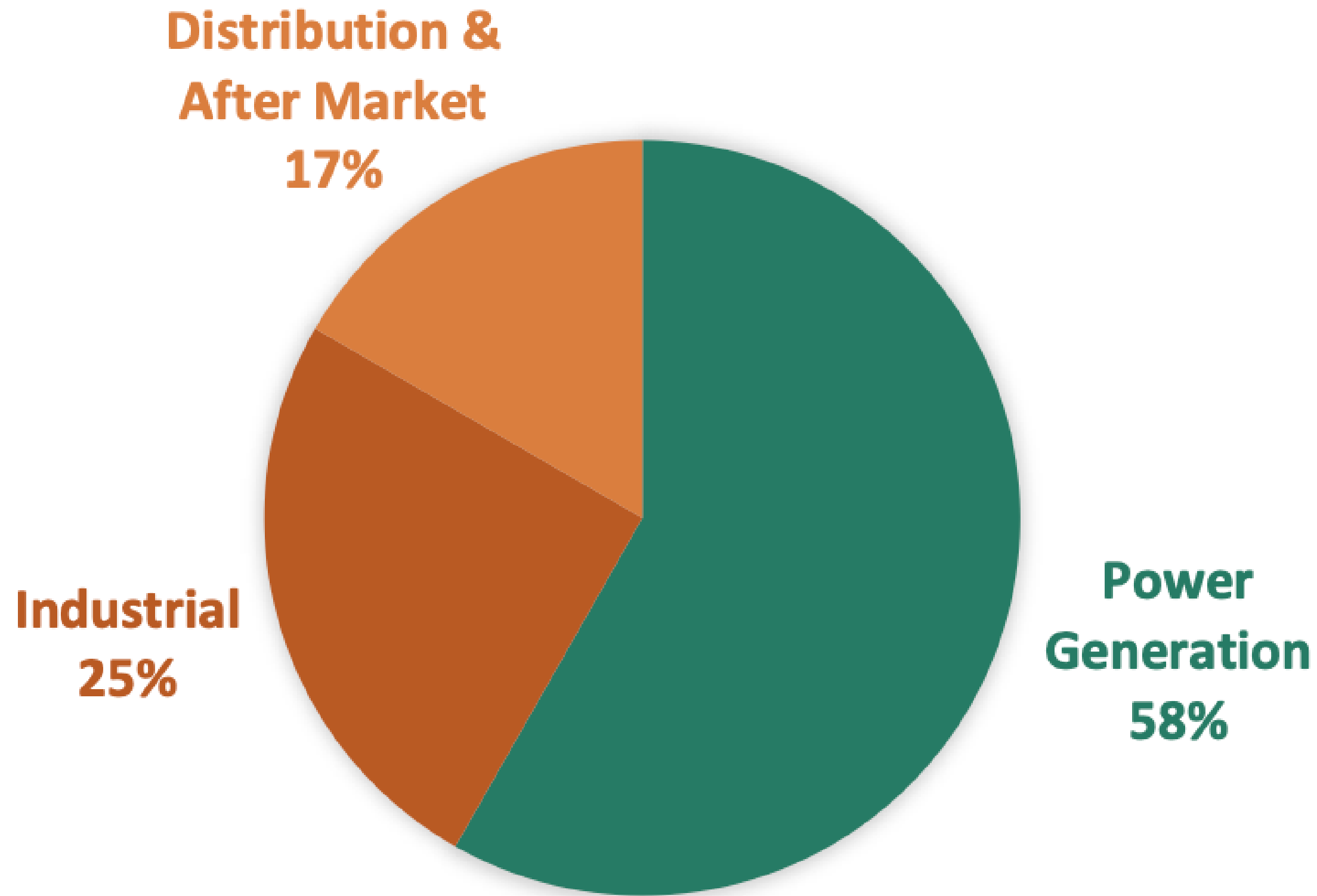
2X-3Y Strategy: Grow 2 times in 3 years



2X-3Y Strategy Pillars



Segment Revenue Composition For Current Quarter



Power Sector Transformation ...

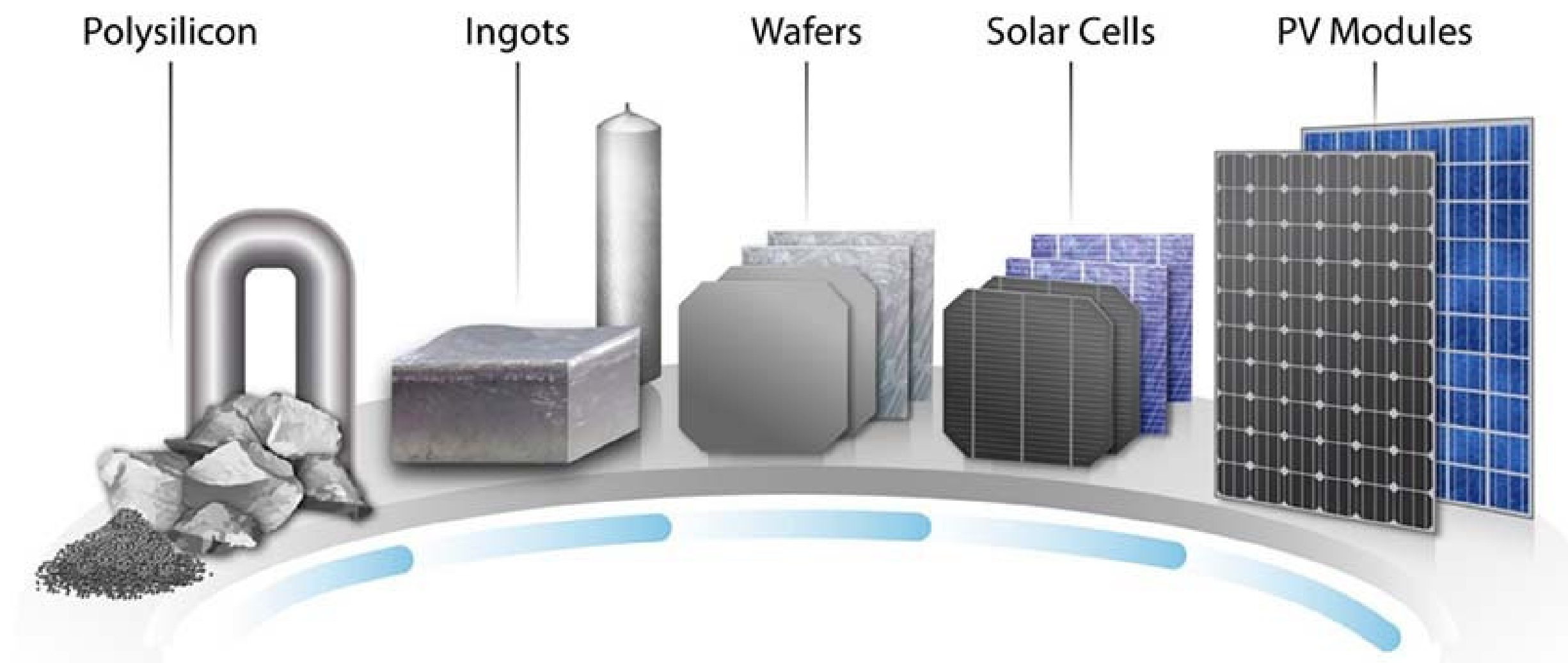


	FY23		FY32
Installed Capacity	416 GW	→	900 GW
Renewable Capacity (Incl. Large Hydro)	172 GW	→	596 GW
Generation (in BUs)	1624 BUs	→	2,666 BUs
Peak Load Demand	216 GW	→	366 GW
Per Capita Consumption	1,255 kWh	→	2,100 kWh
Coal Requirement	800 MT	→	1026 MT

A wave of new reforms - In the form of revised tariff policy & smart prepaid metering



Solar Panels Value Chain

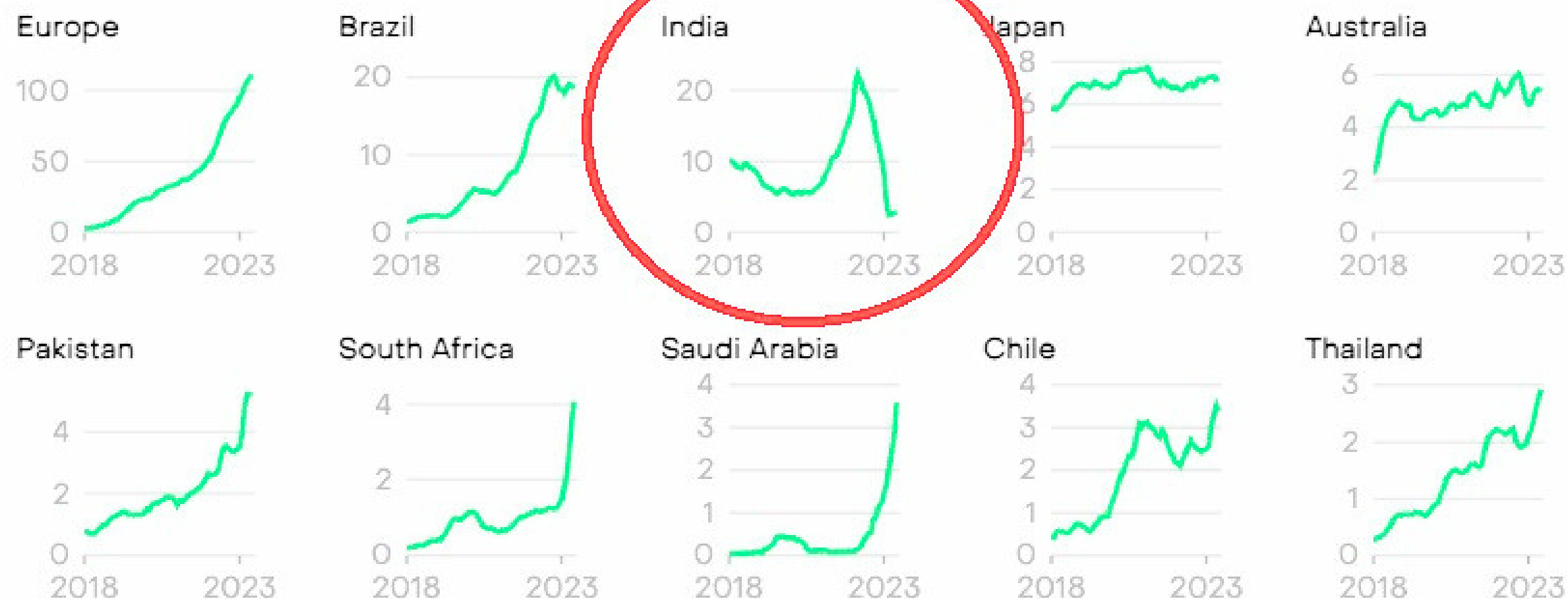




Solar panel Imports in India are falling Due to Import Duties

Solar panel imports rising across most of China's top ten markets

12 month rolling sum of modules exported from China (GW equivalent)

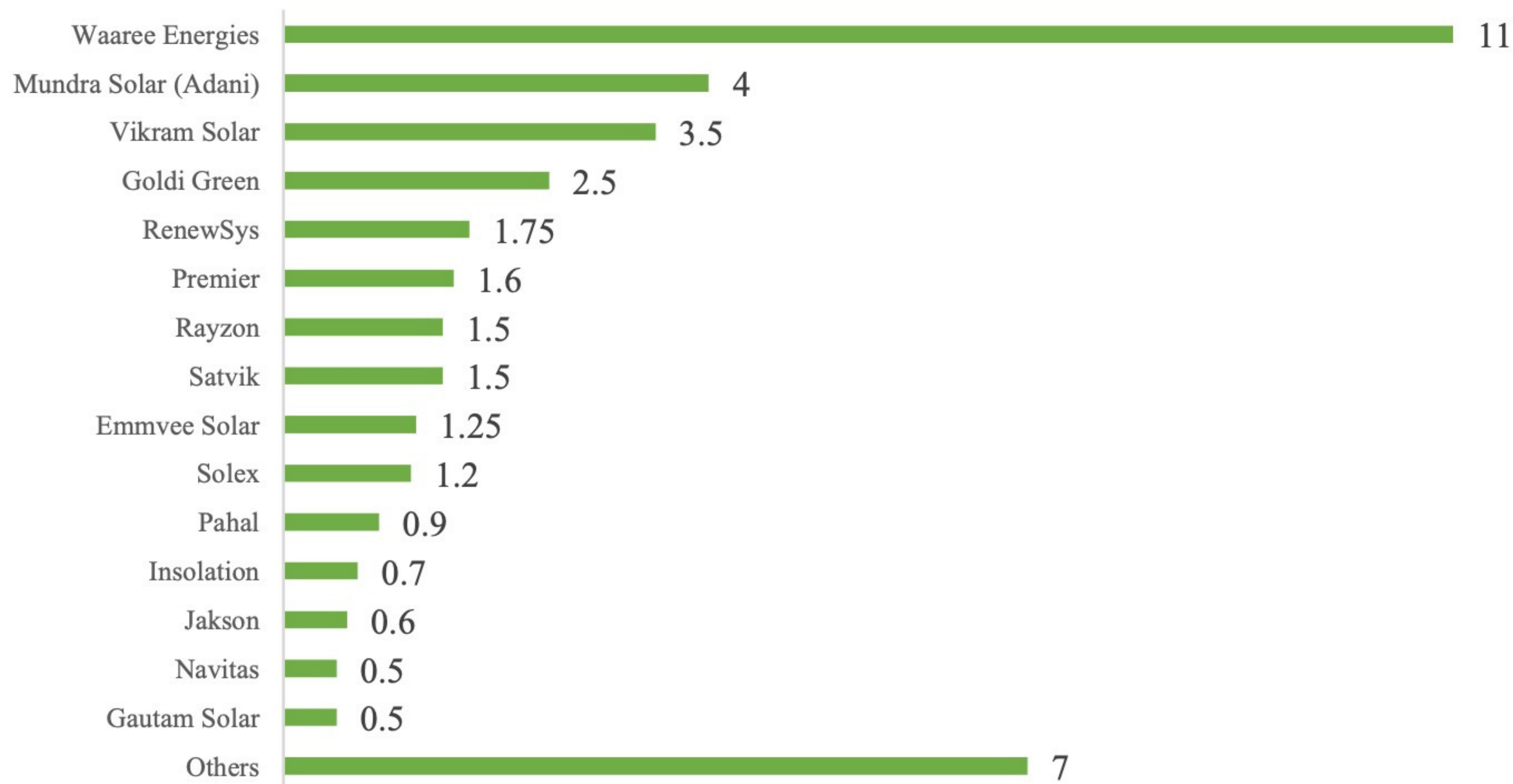


Source: Ember's China Solar Export Data



Solar PV Modules Manufacturers

Existing Module Manufacturing Capacity in India (in GW)





Waaree Energies: Export Orders have Gone to \$5Billion+

Significant order pipeline led by export provides strong revenue visibility

The company's revenue grew ~47% to Rs 2,905 crore in fiscal 2022, ahead of expectations, owing to strong order flow from domestic and export segments. As of date, its order book stood at ~Rs 28,000 crore which corresponds to module deliveries of ~10 GW to be executed over next 2.5 years. Furthermore, 80-85% of the orders (confirmed + pipeline) are from export markets including the US, Canada and Europe amongst others. Apart from the existing orderbook, the group is looking to partner with IPPs to ensure steady offtake going forward. This provides strong medium-term revenue visibility. On the domestic front, the government's high targets in renewable energy installation for the next decade, implementation of approved list of models and manufacturers (ALMM) scheme, imposition of BCD and production-linked incentive (PLI) schemes, and government schemes (with domestic content requirement clause) should lead to healthy demand.

HYBRID MODEL

We have ventured into a hybrid model of solar and wind energy, which helps with grid stability. The hybrid model brings both solar and wind energy together to provide a more reliable, efficient and sustainable approach to renewable energy generation. This model also enables the commercial optimisation of transmission charges and the effective utilisation of grid capacity. We have added new locations and increased our capacity to 346+ MW.

Our aim is to enhance this hybrid model in the future, as it is very beneficial when it comes to cost efficiency and effective energy generation.

Business in Pipeline - Hybrid Model

145+ MW ▲

Hybrid CPP Order
received during Q2FY24

185+ MW ▲

Hybrid CPP Order as on
H1FY24

INDEPENDENT POWER PRODUCER (IPP)

As a leading Independent Power Producer (IPP), we are a reliable supplier of renewable power to esteemed business houses through Power Purchase Agreements (PPAs). Our plants, strategically located across more than 23 sites in the Bharuch, Bhavnagar & Kutch district of Gujarat, are instrumental in generating clean and sustainable energy. As part of our commitment to advancing renewable energy, we have also proactively energized hybrid renewable energy projects, effectively integrating them into our existing power generation asset portfolio.

CAPTIVE POWER PRODUCER (CPP)

We are a trusted player in the renewable energy sector, specializing in developing, transferring, operating, and maintaining grid-connected solar power projects for our valued Captive Power Producer (CPP) customers. Through the CPP model, we offer our customers the opportunity to own solar and hybrid power projects tailored to meet their specific requirements. This empowers companies to significantly reduce their electricity expenses, as the cost per unit from captive solar and hybrid plants is notably lower compared to power obtained from DISCOM. In addition to providing the solar and hybrid power projects, we also offer Operation and Maintenance Services (O&M) through separate agreements, ensuring the continued efficiency and guaranteed performance of the installations.



18%

Revenue share
of IPP
in H1FY24



82%

Revenue share
of CPP
in H1FY24



346+ MW

111+ MW IPP, 181+
MW CPP & 54+ MW
in Hybrid Projects
Energized till H1FY24



403+MW

241+ MW IPP, 17+ MW CPP
& 145+ MW in Hybrid CPP
Orders received in Q2FY24



541+ MW

279+ MW IPP, 77+ MW CPP
& 185+ MW in Hybrid CPP
Projects Orders in Hand as
on H1FY24

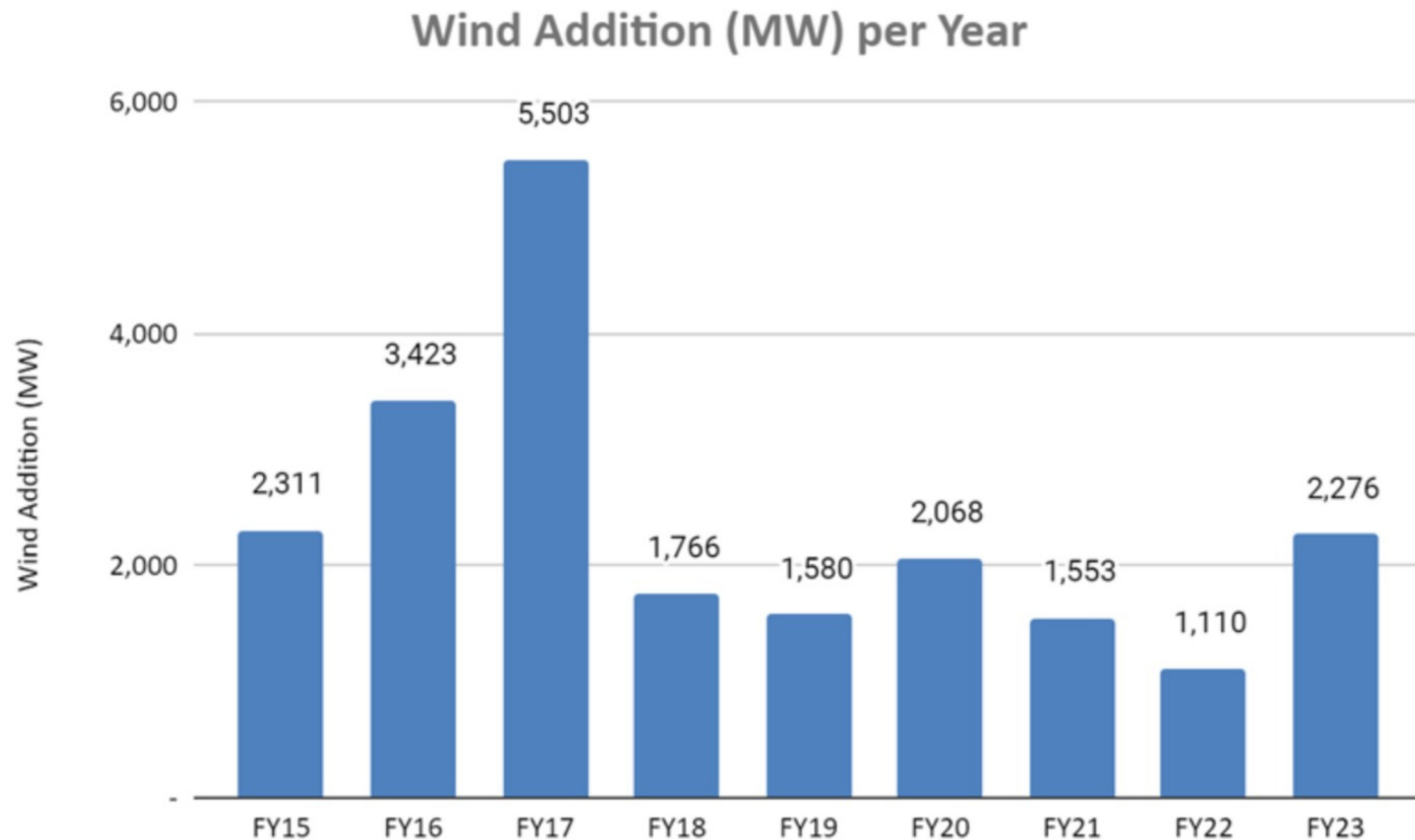


48.67%

Portfolio Hybrid
CUF (on AC basis)
in Q2FY24



Wind Energy: Why did Yearly Installations Drop?



Source – CEA monthly reports



Wind Energy: Why did Yearly Installations Drop?

Why Wind Sector went through pain period?

Eg. One of the pain points of the wind sector was reverse e-auction. This auction methodology is similar to the one used in telecom spectrum auctions. This is how reverse e-auction works

All the eligible bidders submit their financial bids. Financial bids are opened and everyone gets to know each other's bid. Every bidder is now given an option to change his bid in public. What this means is that there is a race to the bottom.

In order to win the auction, bidders aggressively compete with each other and lower the prices at which they are willing to sell electricity.

Reverse e-auction used between 2017 and 2022 in the wind sector meant that the discovered prices were very low. Many of the developers later realized that it was not feasible to construct these wind power plants and profitably sell electricity at such low rates. Thus, many of the auctions did not convert into wind power projects executed on the ground.



Wind Energy: Why did Yearly Installations Drop?

What has changed?

Eg. One of the pain points of the wind sector was reverse e-auction. This auction methodology is similar to the one used in telecom spectrum auctions. This is how reverse e-auction works

Government in Jan-23 has come out with a policy document which talks about changes in the way auctions will be conducted for wind power plants. Reverse auction has been changed to closed envelope single bid auction. This means there will not be a race to the bottom and the tariffs discovered in such auctions will be more sane at the same time being competitive enough that the electricity consumers don't have to pay too high a price.



Trends in Wind Energy

Opportunities: Favorable market conditions & strong demand outlook

Onshore wind power potential in India
695 GW at 120m HH

Target

Add wind capacity of ~8 GW p.a. to reach 100 GW by 2030

Action Plan

RE bids of 50 GW p.a. (incl. 10 GW wind) during FY24-FY28

Main Policy Initiatives

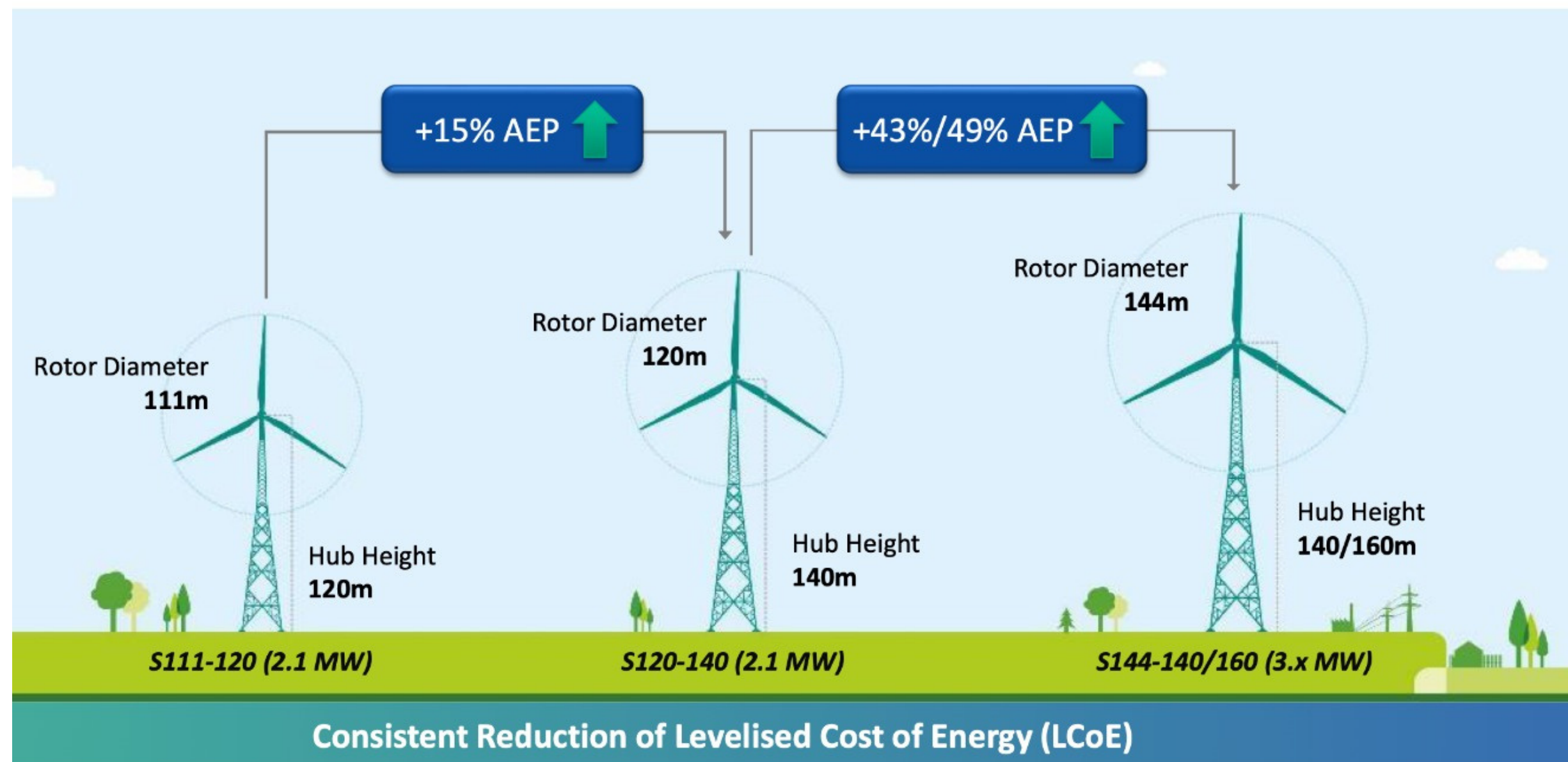
1	E-reverse bidding discontinued
2	New bids to be on a single stage two envelope closed bids basis
3	Wind capacity planned in all 8 windy states – shall lead to even growth
4	Wind bids of 10 GW p.a. with state specific sub-bids and pooling of tariff
5(a)	ISTS charges waiver for 25 yrs. for RE projects COD till 30 th June 2025*
5(b)	For COD in every year thereafter, ISTS charges will be levied at 25%, 50%, 75% & 100% of applicable charges respectively for 25 years^

Other Initiatives

1	FY24: Monthly bidding plan for RE projects for 50 GW (incl. 10 GW wind)
2	RPO trajectory: 24.61% (FY23) to 43.33% (FY30) with wind-specific RPO
3	Wind repowering potential identified at 25.4 GW (for old WTGs < 2MW)
4	GH2 Mission targets 5 MMT p.a. capacity requiring RE of 125 GW by 2030
5	ISTS charges waived for 25 years for RE used for GH2- COD till 31 st Dec 2030
6	New transmission capacity planned at a capex of Rs 2.44 lakh Cr. by 2030



Trends in Wind Energy



Trends in Wind Energy

**Wind Turbine Generator:
Likes of Suzlon, Inox winds.**

**Off Shore Wind Turbine Fasteners:
Sundram Fasteners**

**Wind Turbine bearings:
Timken, Schaeffler**



**Wind Turbine Crane
Service: Sanghvi Movers**

**Generators for Wind Turbines:
TD Power**

**Bronze Bushes:
Harsha Engineering**

Supplementing Verticals

INDEPENDENT POWER PRODUCERS (IPP)



18.4 MW

KP Energy has its own renewable energy generation capacity of 18.4 MW including wind energy assets of 8.4 MW (4*2.1 MW) and a 10 MWdc solar power plant



Dual Objectives of becoming an IPP

Strategic set-up: providing assurance to clients about the quality of assets and annuity-based income to the Company

OPERATIONS & MAINTENANCE (O&M)



O&M services

Provides O&M services for Balance of Plant (BOP) portion of windfarms through its wholly owned subsidiary KP Energy OMS Limited



EPCC directly drives the growth of this segment.

EPCC directly drives the growth of this segment. However, the existing portfolio creates an annuity-based revenue stream for the Company



EPCC Scope of Services



SITE IDENTIFICATION & ACQUISITION

Our key competence is identifying and acquiring good windy sites for utility scale wind farms



SITE PREPARATION

We construct access roads and fetch ROWs in tough and challenging situations



CONSTRUCTION & ERECTION

WTG civil foundation, 33kv USS & internal network as well as logistics, installation & erection of Wind Farms and Wind-Solar Hybrid Power projects.



POWER EVACUATION

We undertake EPCC of 33/66 & 33/220 kv pooling substation and EHV lines



PERMITS & APPROVALS

We obtain all requisite permits & approvals from government authorities for the project execution and its operational life thereof



OPERATIONS & MAINTENANCE

O&M services for the entire BOP portion of wind farm for its operational life

Company Snapshot

KP Energy Limited is Gujarat's prominent balance of plant solution provider in Wind Industry engaged, from conceptualization till the commissioning of a wind energy & wind-solar hybrid power project.

#1

Gujarat's #1 BOP solutions provider for Wind Projects and Wind & Solar Hybrid Projects



1,031.8 MW

Business Pipeline of 888.1 MW and Projects Under Execution totaling 143.7 MW at various sites

726.6 MW

Capacity energized till date including CTU and STU projects

18.4 MW IPP

Operational 4 wind energy assets having capacity of 2.1 MW each and 10 MW dc solar power project

888.1 MW

Business Pipeline of 888.1 MW

₹828 CR

Market Capitalization as of 10th August 2023

1,000+

Qualified, experienced and committed team of 1,000* people, across technical, commercial, execution & corporate functions

143.7 MW

Projects Under Execution totaling 143.7 MW at various sites

KP Energy OMS

O&M services for BOP infrastructure developed by KP Energy are managed under wholly-owned subsidiary KP Energy OMS Limited

BSE Listed

Scrip Code: 539686

Hybrid

Delivering EPCC solutions for Wind-Solar Hybrid Projects

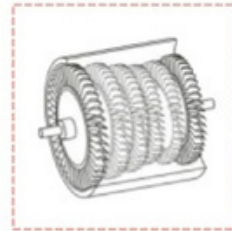


Trends in Wind Energy

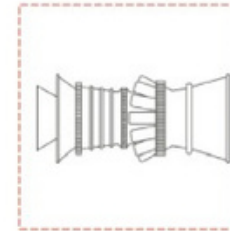
Diversified Products for Multiple End User Industries

tdps®

Generators for Turbines



Steam - upto 250MVA



Gas - upto 250MVA



Hydro - upto 45MVA

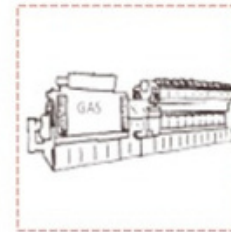


Wind*

Generators for Engines



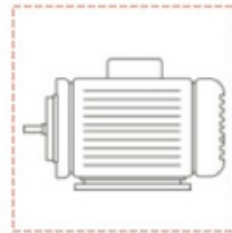
Diesel - upto 25MVA



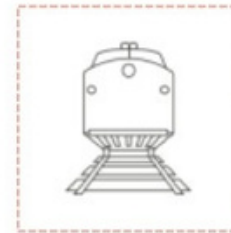
Gas - upto 25MVA

We deliver world class
Generators for the World

Generators for Special Applications



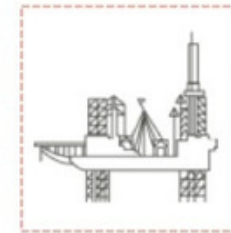
Motor/Engine/
Transformer Testing



Locomotive*



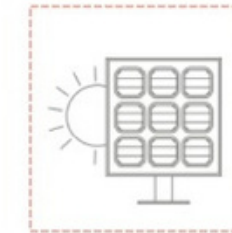
Marine/Naval*



Oil & Gas*

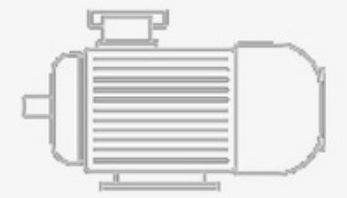


Geothermal*

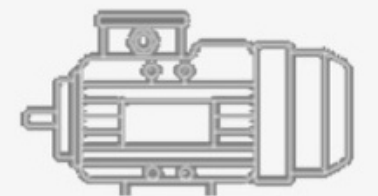


Solar Thermal*

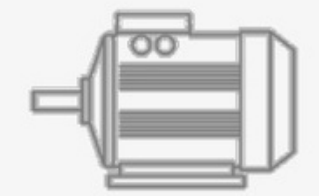
Motors



Induction Motors



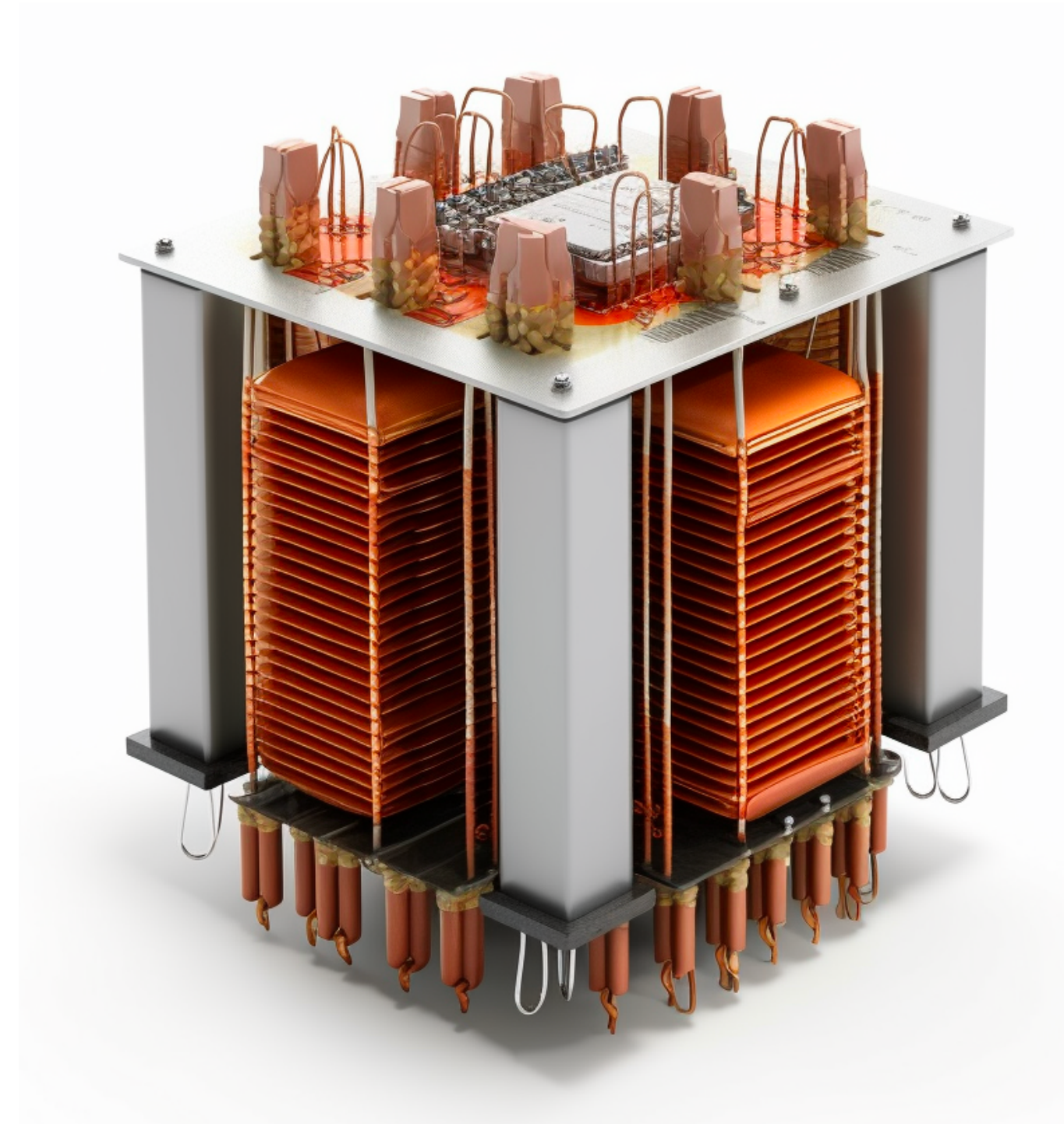
Synchronous Motors



Traction Motors



What are Transformers?



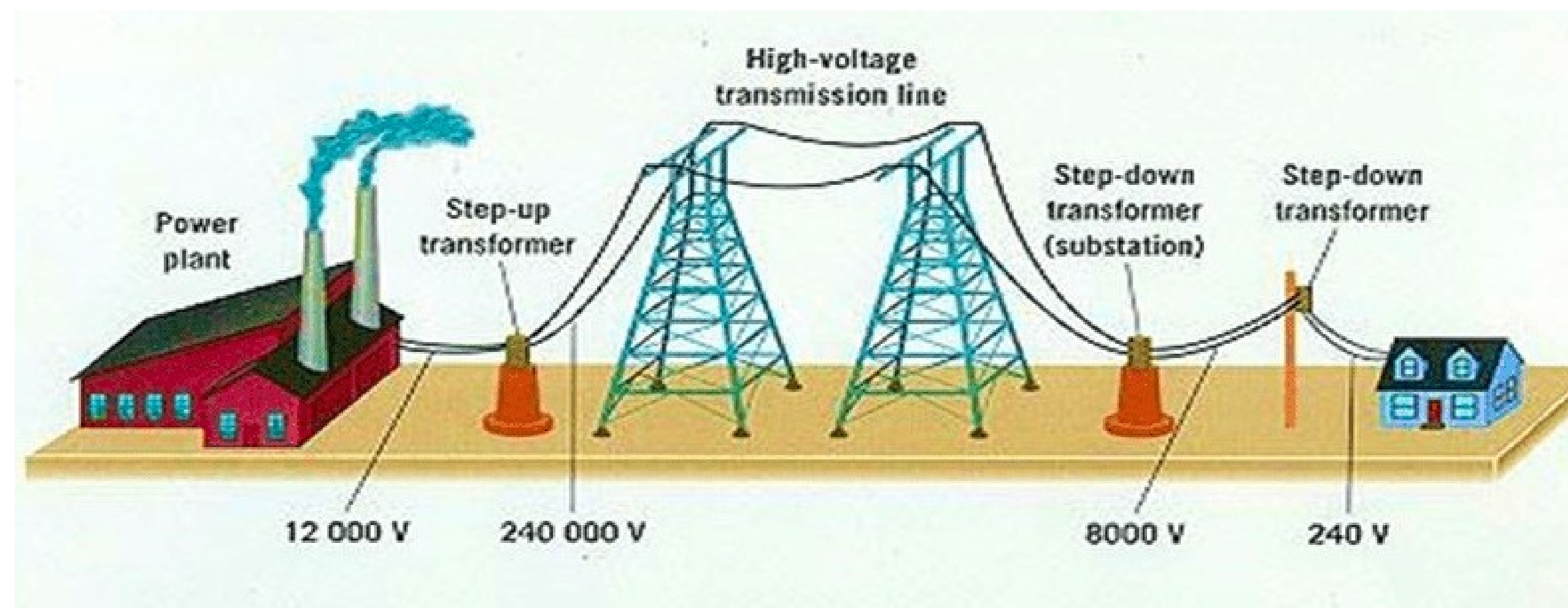
Power transformers are electrical instruments used in **transmitting** electrical power from one circuit to another **without changing the frequency**.

They operate by the **principle of electromagnetic induction**. They are used in **transmitting electrical power** between **generators** and distribution **primary circuits**.

It is widely used to step up and **step down voltages** at the **electrical power generating** station and distribution station respectively



What are Transformers?





Transformers: Power, Distribution, Furnance etc.

Power Transformers



Shunt Reactors



Distribution Transformers



Furnace Transformers



Rectifier Transformers



Classification of transformers	Range	Types
Power Transformer	Upto 1200 kV class	Generator transformer, Unit Auxiliary transformers, Step up & Step down transformers, Interconnecting Auto transformers, Dual Voltage Primary or Secondary Three winding transformers
Shunt Reactor	Upto 765 kV class	Reactors upto 765 kV class
Distribution Transformers	160 kVA and above	Earthing transformers, Three winding transformers, Step up & Step down transformers, Dual voltage Primary or Secondary
Furnace Transformers	220MVA/101KA	Arc Furnace, Induction Furnace, Laddle Arc Furnace and Submerged Arc Furnace transformers
Rectifier Transformers	100 KA DC	For DC power sources for Melt and Chemical Industries

NTPC - Not only Growing Bigger but also Growing Faster



Conventional Capacity Addition

10 GW in next 3 years

Estimated Capitalization - ₹80,000 crore

RE Capacity Addition

16 GW in next 3 years

Estimated Capitalization - ₹85,000-90,000 crore

Thermal Capacity Ordering

7.2 GW by next fiscal

Ensuring Nation's Energy Security



Coal Mining

23 MMT in FY23, growth of 65%

Target to cross 34 MMT in FY24

FGD Commissioning

60 GW in next 3 years

Estimated Capitalization - ₹30,000 crore

Commercial & Industrial (C&I) Market

Definite Bilateral tie-ups for 10 GW RE capacity

Discussion on with many other C&I consumers

Leading India's push towards Renewable Energy



NTPC RE@PRESENT	GW
Installed	3.3
Under Construction	5.9
Under Pipeline (Bids won/ Bilateral tie-ups)	10.8
Total	20.0



**60 GW
Renewable
Capacity by
2032**

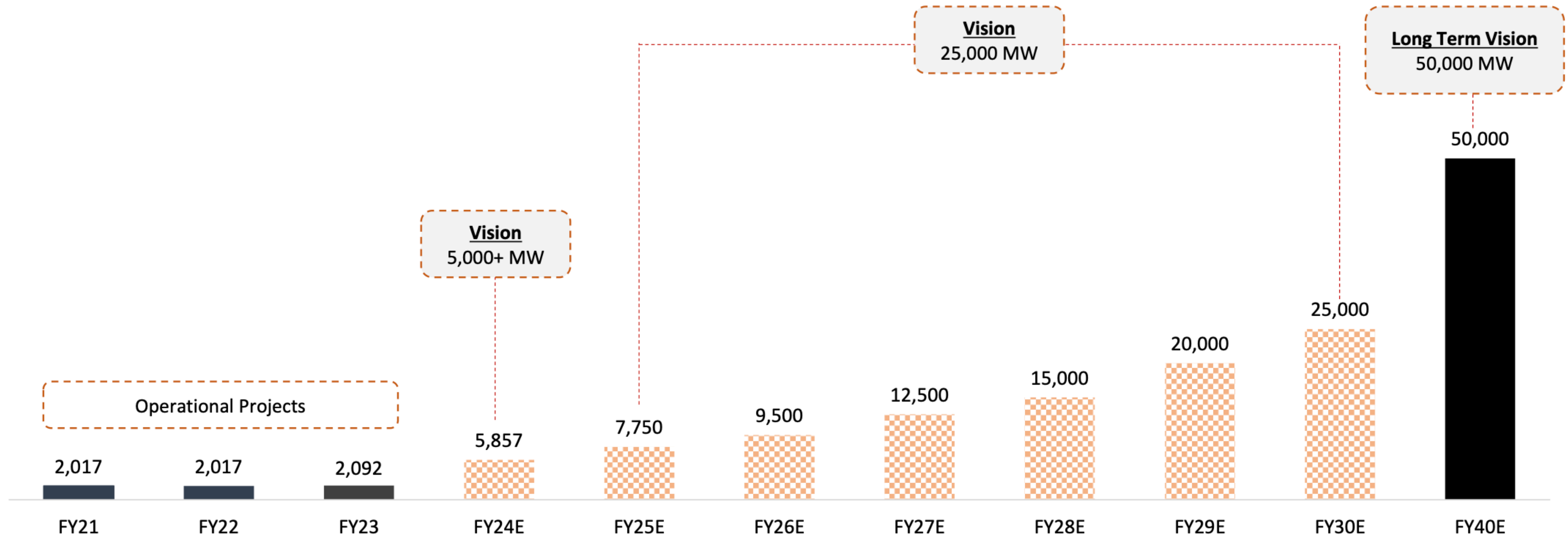
Key Highlights

- Highest RE Capacity Addition of 1.35 GW in FY23
- Doubled RE Generation to 4.9 BUs in FY23
- Largest floating solar portfolio of 262 MW in India
- Commissioned our biggest solar project (Shimbhoo Ka Burj) of 400 MW in a single location
- Implementing and planning 36 GW RE capacity in different states through UMREPP scheme
- Pumped Storage Projects of 39 GW indicated to NTPC Group for development

Well Positioned to grow Exponentially

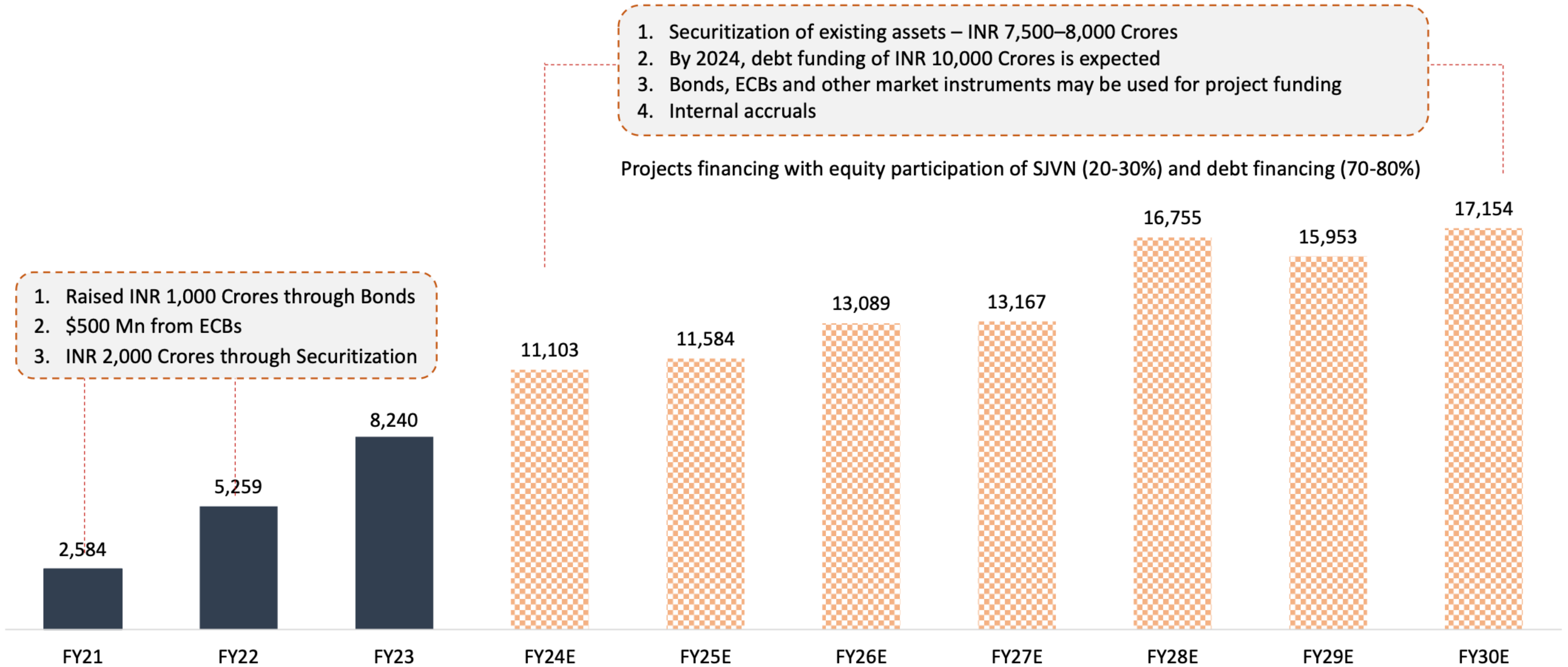


Capacity Addition due to Identified Projects (MW)

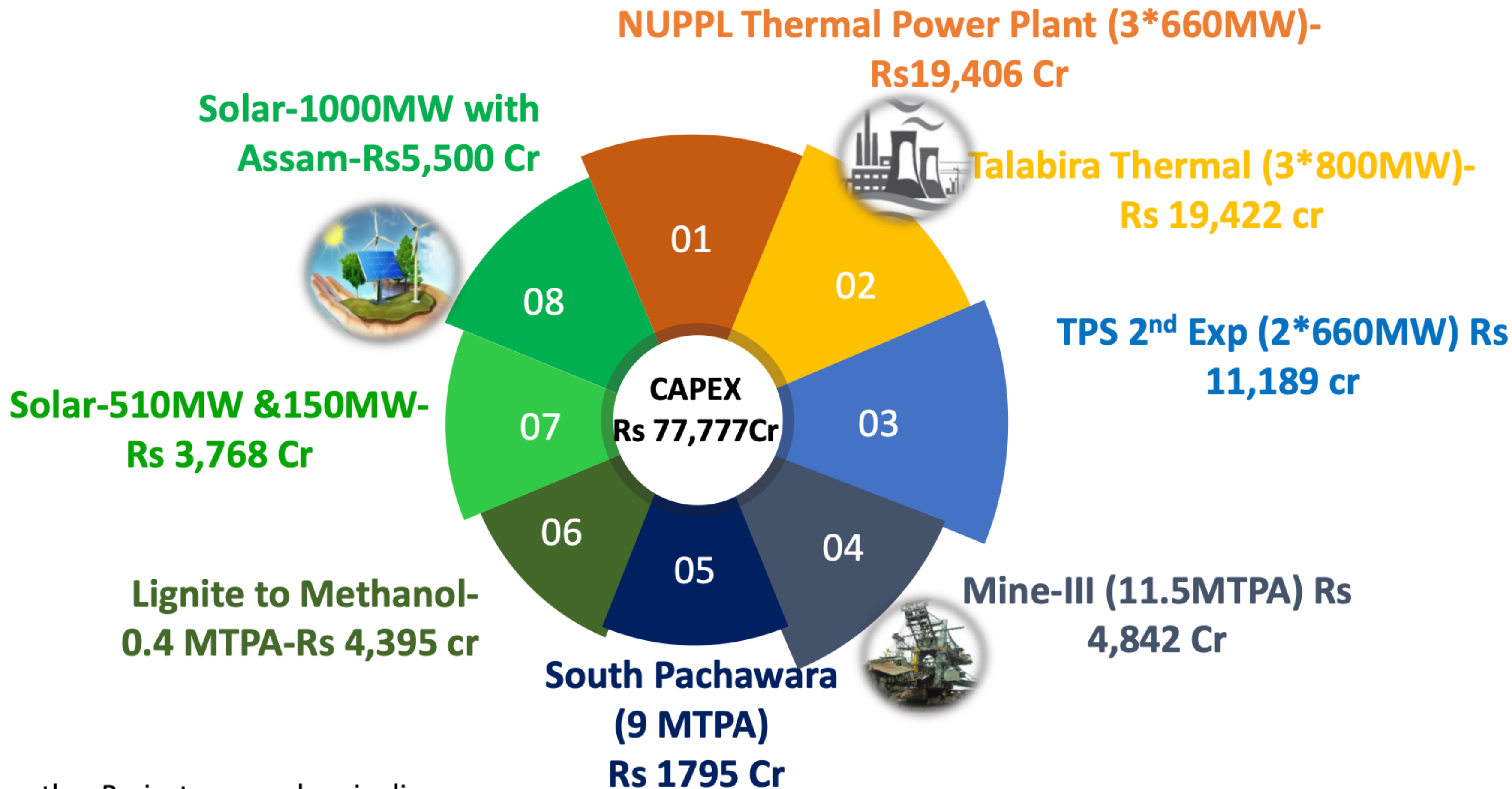


Capex Plan to Support Project Execution

YoY capex vis-a-vis funding guidance (INR Crores)



NLCIL Up Coming Projects Synopsis



Some other Projects are under pipeline

NLCIL @2030

Lignite: 32.1 MTPA
Coal : 20 MTPA



Lignite: 40.1 MTPA
Coal : 44 MTPA

CAPEX Planned: Rs. 8,351 Cr

NLCIL: 3640 MW
JV : 1000 MW



NLCIL: 8160 MW
JV : 2980 MW

CAPEX Planned: Rs. 46,023 Cr

Solar : 1370 MW
Wind : 51 MW



Solar : 5880 MW
Wind : 151 MW

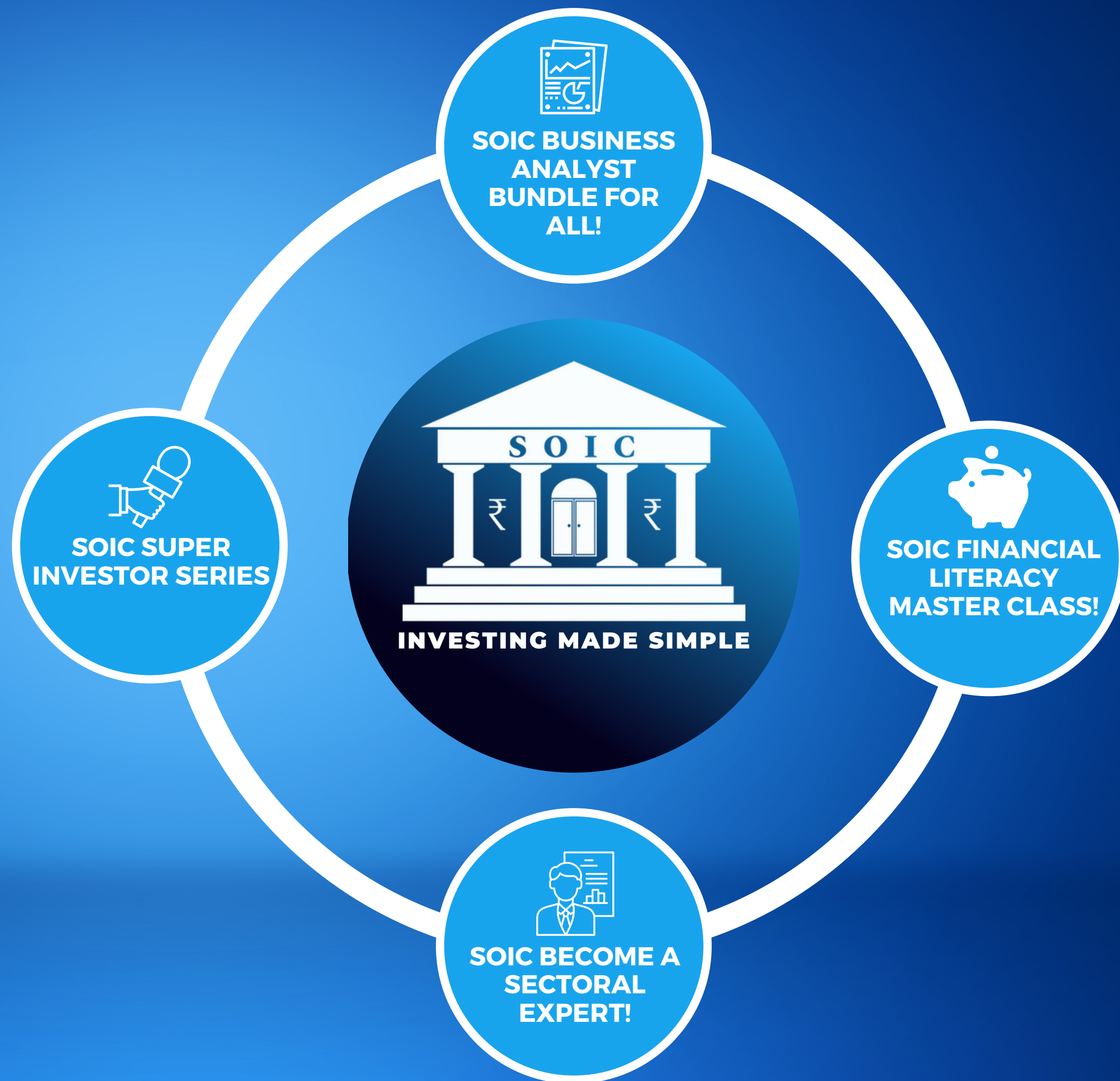
CAPEX Planned: Rs. 23,403 Cr

Total CAPEX Planned: Rs. 77,777 Cr



SOIC
MEMBERSHIP
THE MEMBERSHIP THAT OFFERS IT ALL

The banner features two portraits of men in suits and glasses, a central SOIC logo depicting a classical building with pillars and the Indian Rupee symbol (₹) on either side, and the text 'SOIC MEMBERSHIP' in large, bold letters, followed by 'THE MEMBERSHIP THAT OFFERS IT ALL' in smaller text.



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- 11 All about insurance: Health + Term
- 12 What not to do and what to do



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