

Power Transmission in India

Enabling India's Energy Transition

Industry Report

October 2024



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The India Opportunity

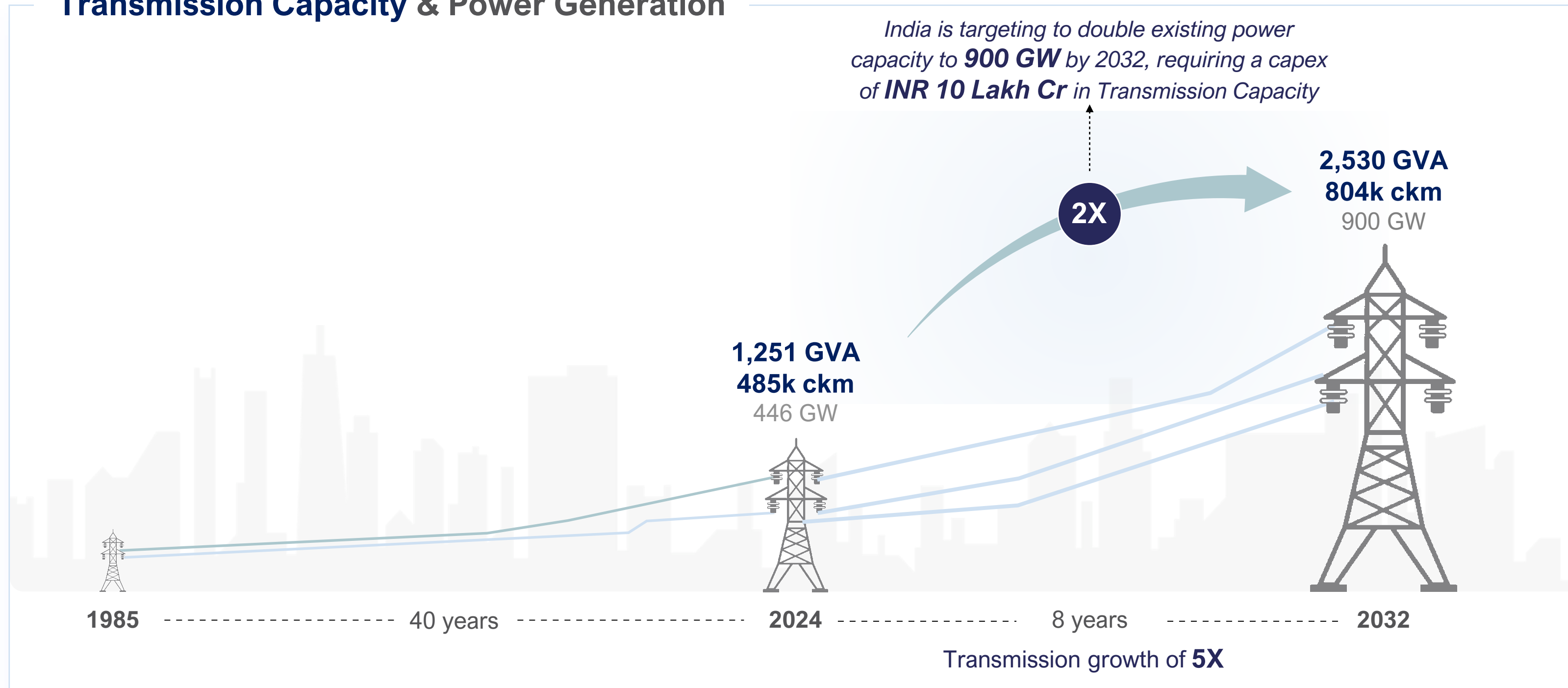


Power Transmission at an Inflection Point

Foundation to achieve India's energy & sustainability goals

Transmission Capacity & Power Generation

India is targeting to double existing power capacity to **900 GW** by 2032, requiring a capex of **INR 10 Lakh Cr** in Transmission Capacity



5X

Accelerated Growth

₹ 10 Lakh Cr

Opportunity

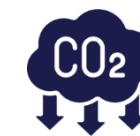
India's Energy Goals Driving the Unprecedented Growth in Power Transmission



One Grid, One Nation



Energy Independence by 2047



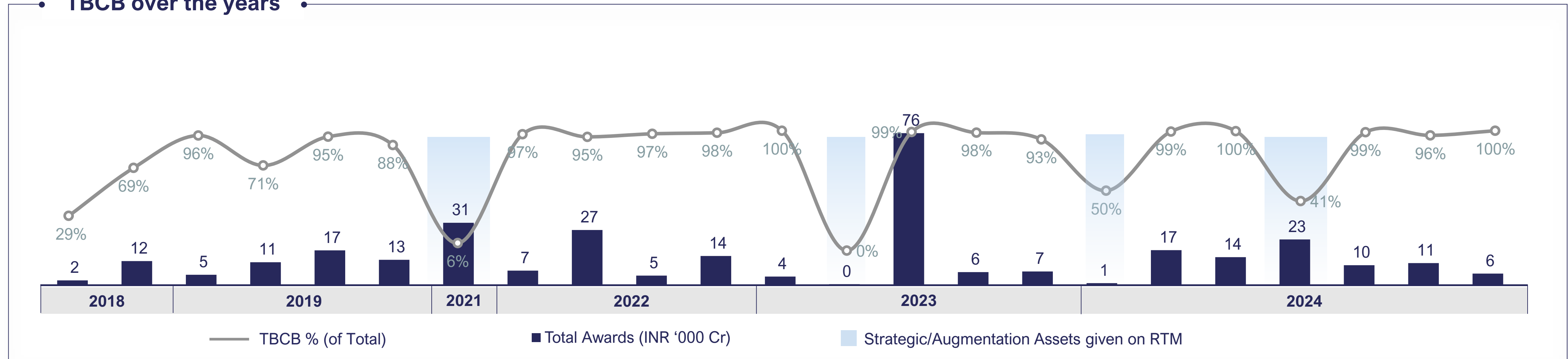
Net Zero by 2070

Evolution of Regulatory Framework (1/2)

Regulatory environment for transmission has evolved to encourage investment and expertise from private sector



TBCB over the years



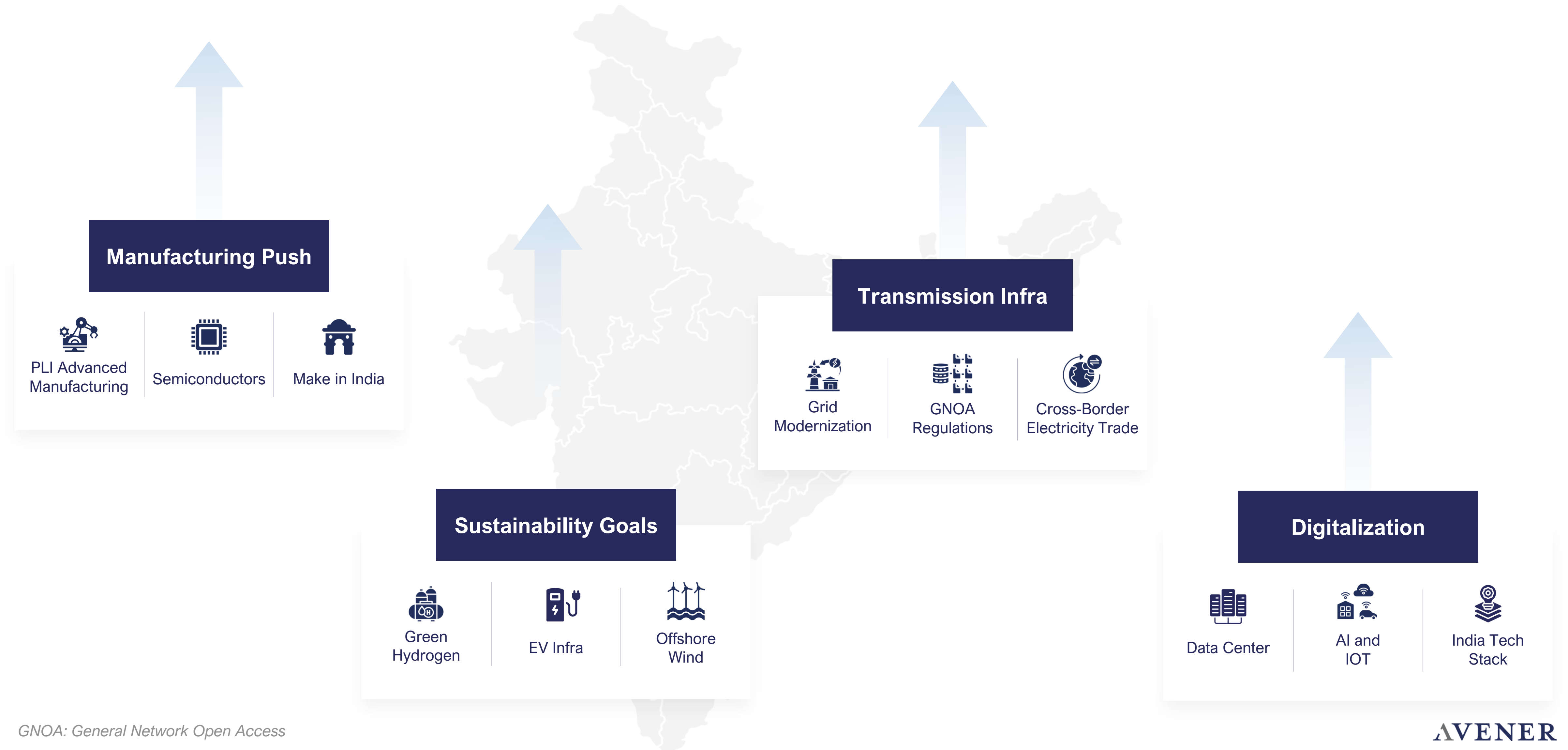
Evolution of Regulatory Framework (2/2)

Regulatory environment for transmission has evolved to encourage investment and expertise from private sector



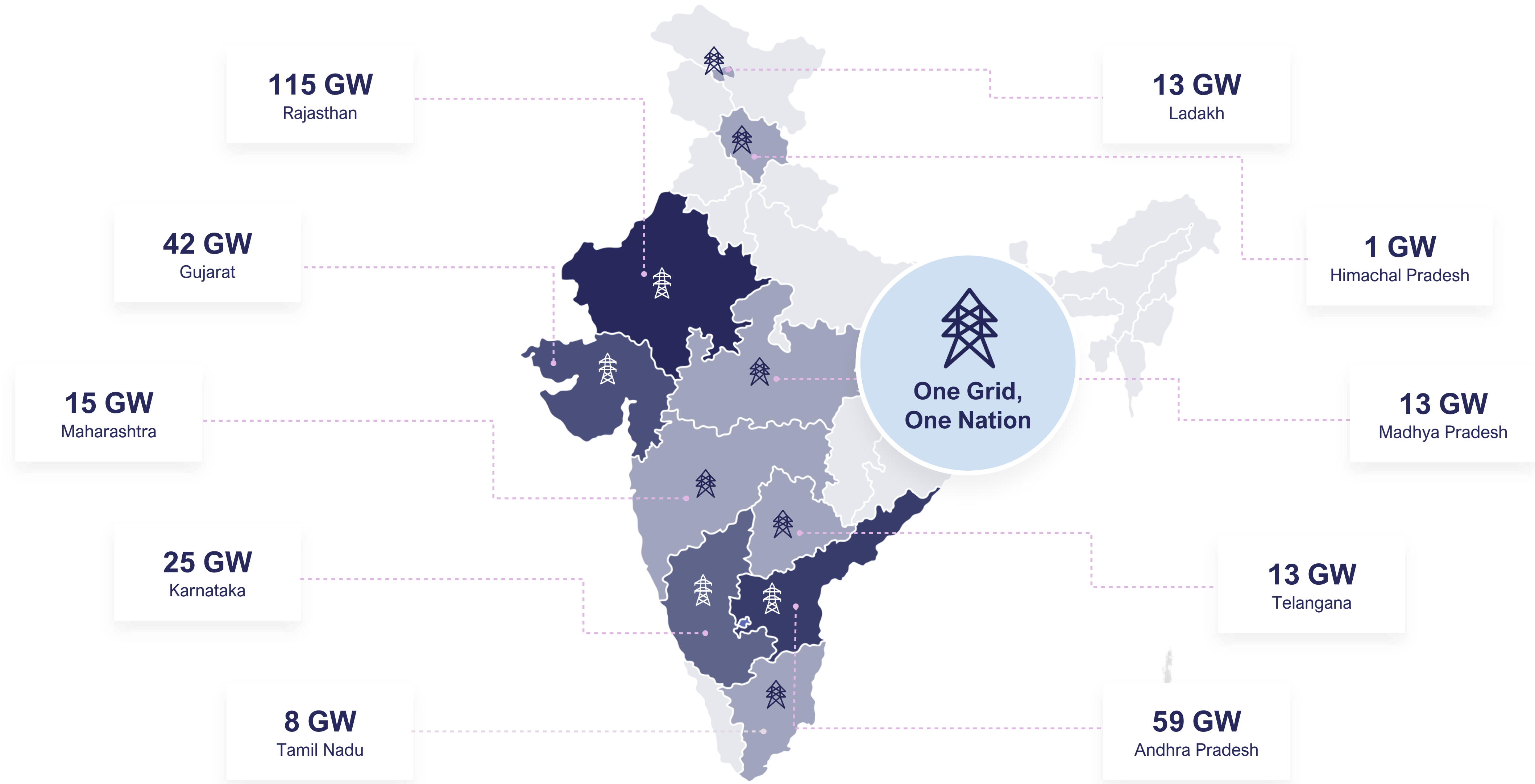
Growth Drivers for Power Transmission in India

Exponential increase in electricity demand will drive the growth of power transmission



India Plans Renewable Energy Addition of 300+ GW by 2032

Energy independence by 2047 and net zero by 2070 will require a robust power transmission infrastructure in India

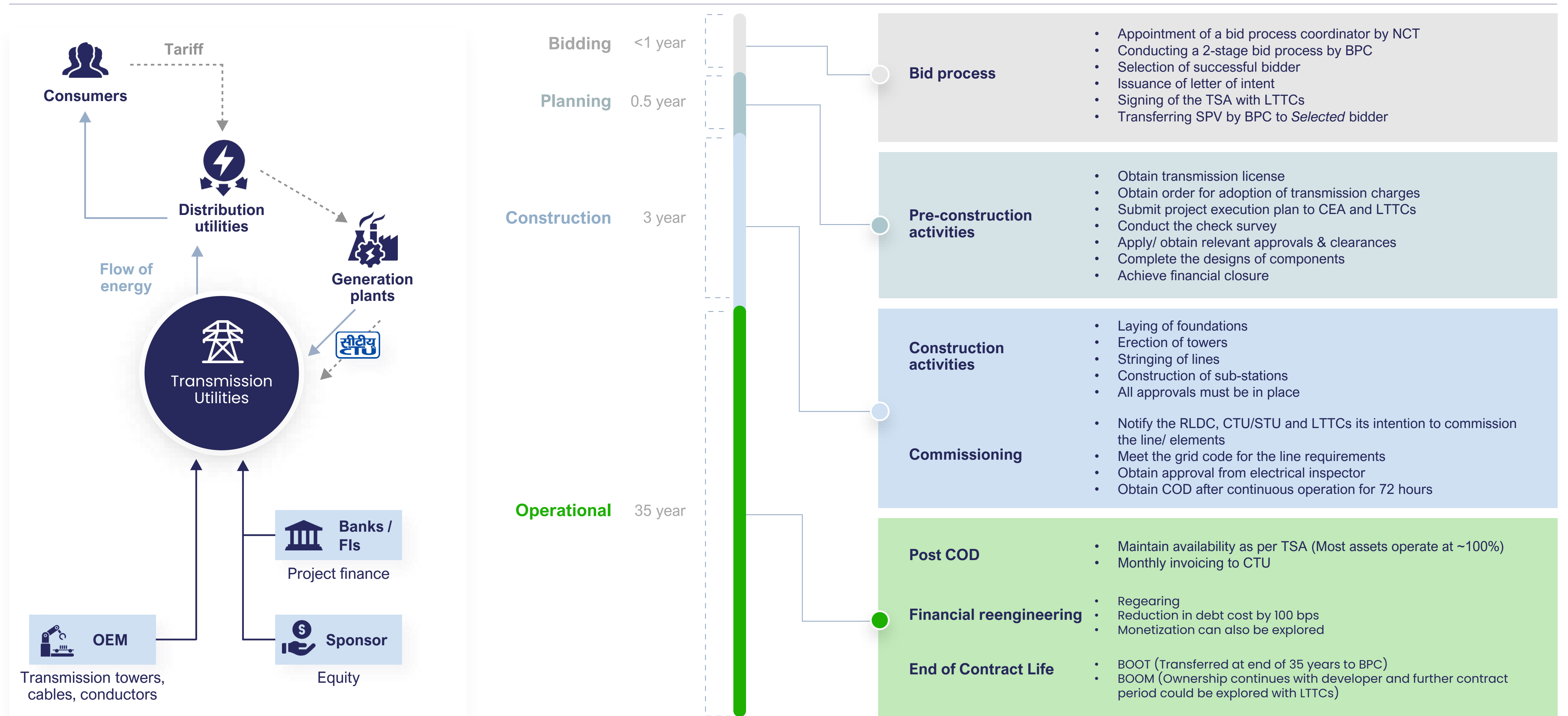


Operating Mechanics



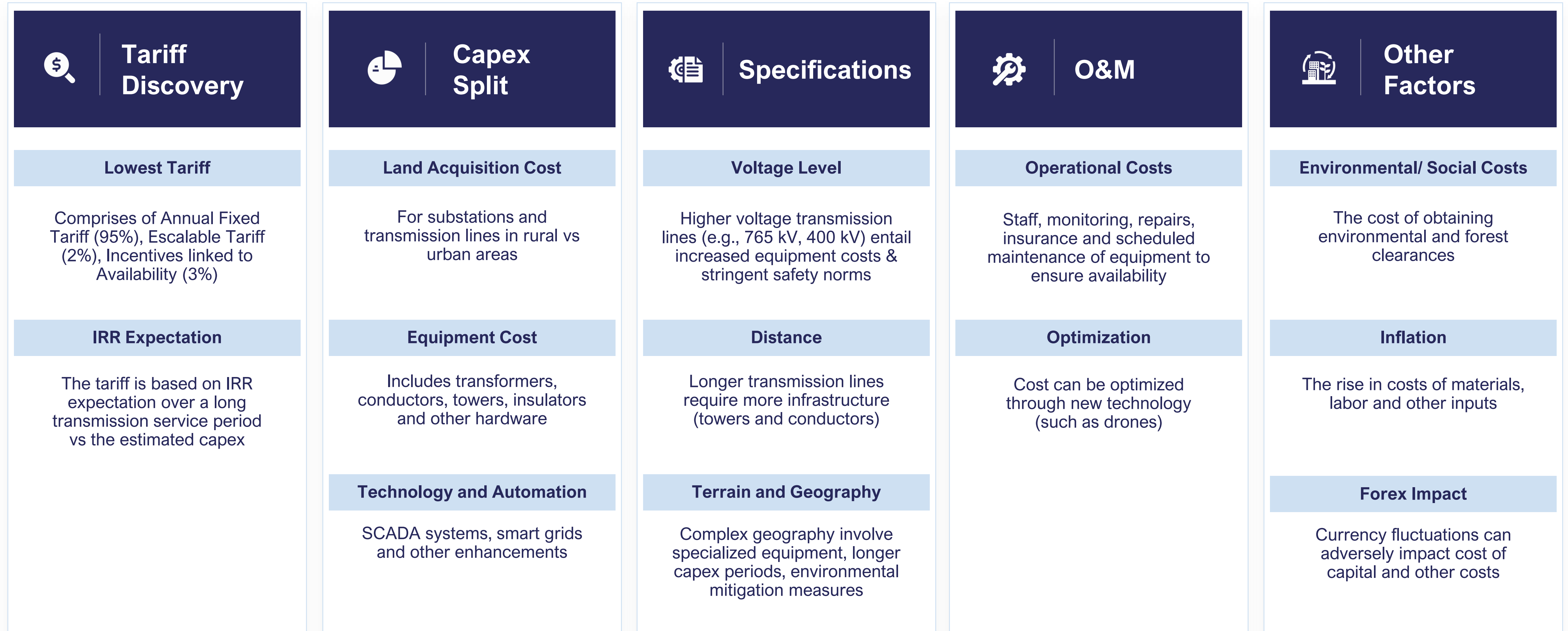
Value Chain & Project Lifecycle

Critical elements over the asset life of transmission projects



Key Considerations for a Power Transmission Project

Determination of Capex & Tariff involves comprehensive assessment of various factors



Salient Features of the Transmission Service Agreement

Key terms governing a transmission service agreement between LTTCs and project developer

Features	TSA terms for BOOT asset		
Contract Period	Valid for 35 years from SCOD of substations & transmission lines	Transmission license valid for 25 years from COD which can be renewed	
Tariff Price and Incentives	Quoted transmission charges (~98.5% of total tariffs)	Upto ~1.5% of total tariffs , availability linked incentive payments above target availability	
Performance Security	Contract performance guarantee ~2-5% of TPC to be deposited by the transmission service provider in favor of CTU		
Implementation Schedule	Project will take approximately 18-38 months to get completed from the effective date		
Force Majeure	For INNFME & NFME , TSP is entitled to payment for debt servicing	For DNNFME , TSP is entitled to non-escalable transmission charges provided such force majeure event has been ongoing for 3 months	
Damages / Penalties	3.33% of monthly transmission charges for delay of 60 days, 5% thereafter if SPV fails to achieve SCOD on time	Availability <95% , TSPs shall pay penalty as per TSA	Delay of >6 months from SCOD results in event of default and TSA can be terminated
Termination Payment	Termination on account of Force Majeure events, non-requirement of any element or project during construction, Nodal Agency's non-fulfilment of role & TSP's event of default, TSP shall be entitled for termination payment equivalent to valuation of project assets. Upon payment, the Nodal Agency shall take over the project assets		
CIL Claims	TSA provides pre-defined formula for increase in transmission charges corresponding to increase in project costs for Change in Law		

Risk & Return Dynamics

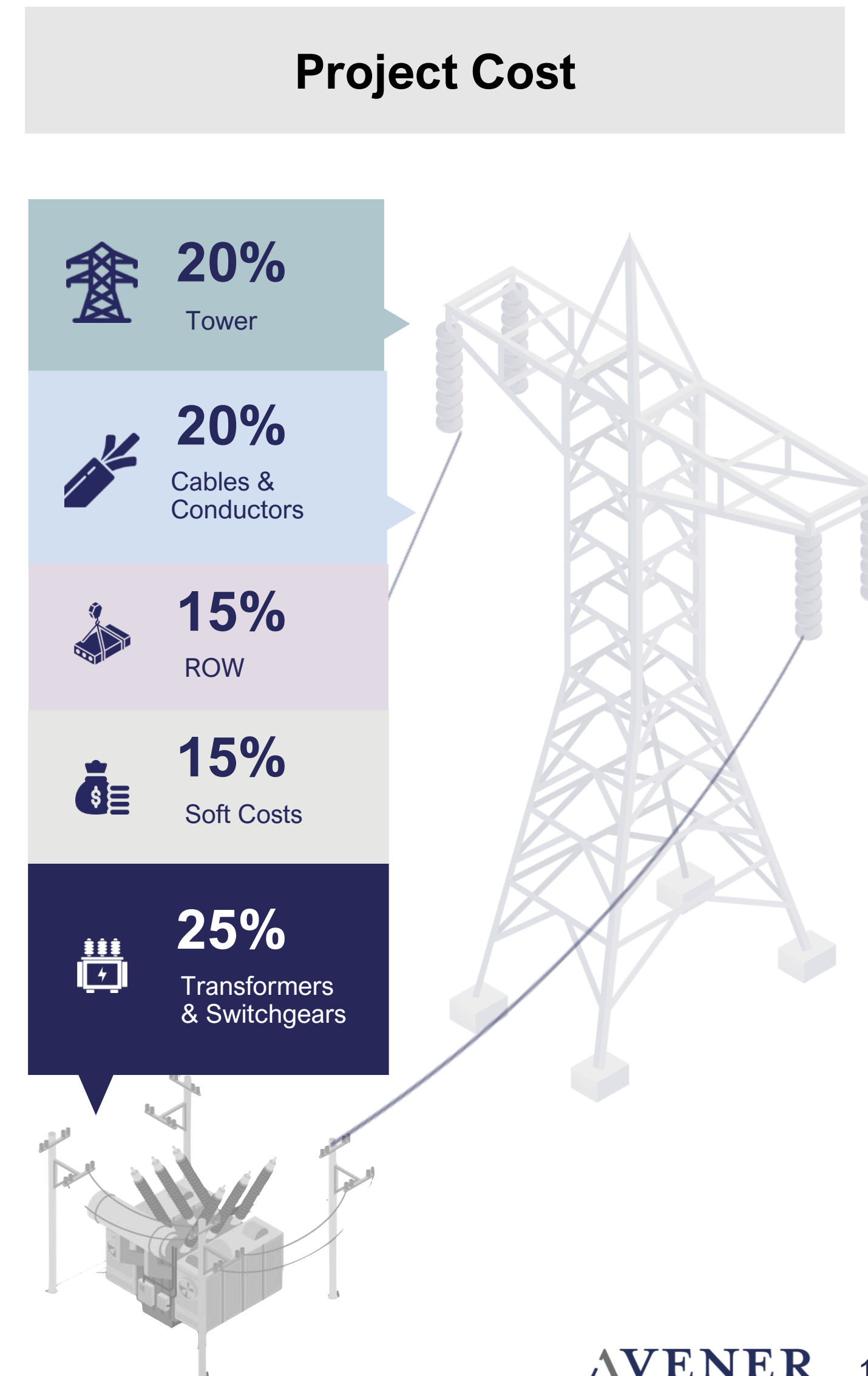


Returns, Risks & Mitigants

Evaluating the value pockets of power transmission ecosystem

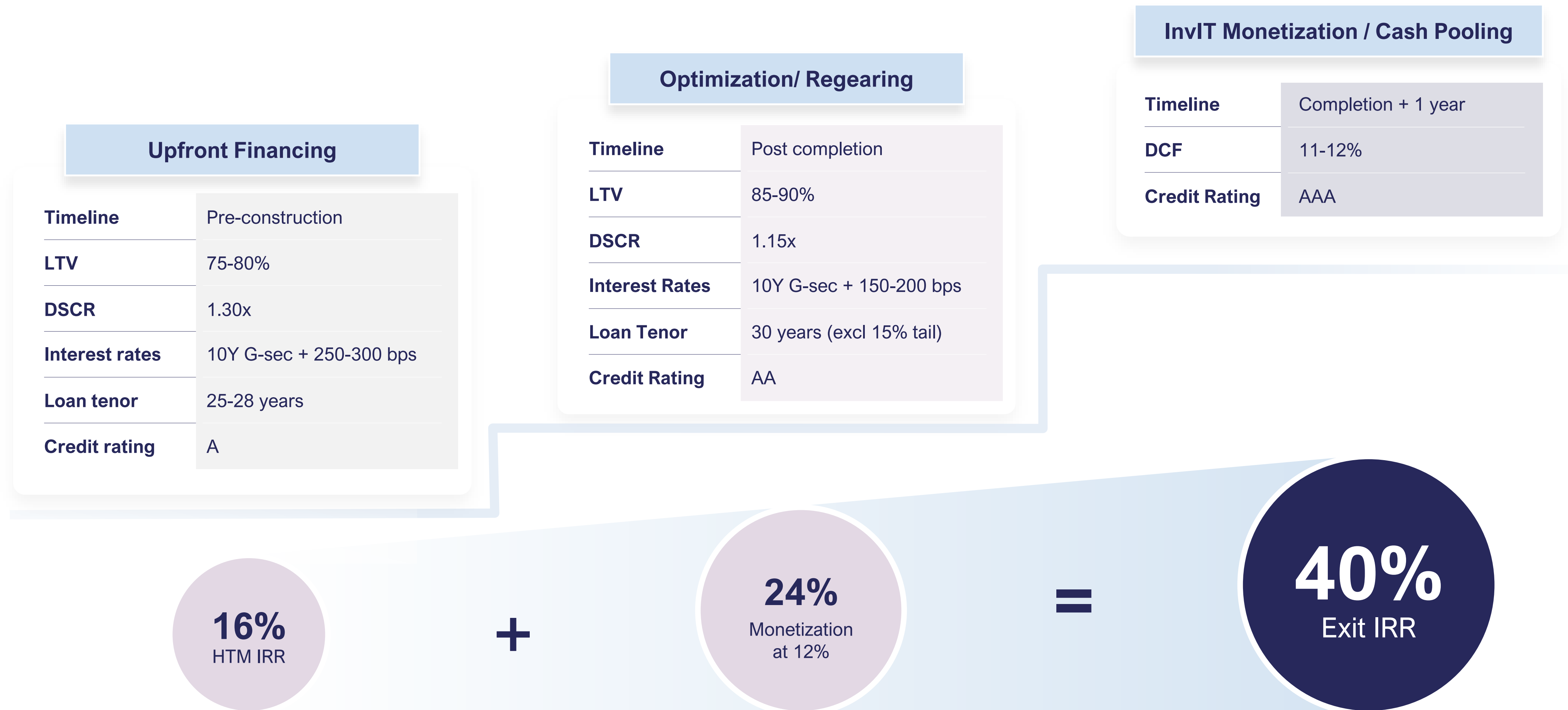
	Developer		EPC		OEM	
Average returns	16% HTM IRR	40% Exit IRR	10% EBITDA margin		10% EBITDA margin	
Risks	Financing O&M	Overruns Force majeure	Execution Working capital	Commodity prices Orderbook	Commodity prices Working capital	Inventory obsolescence Orderbook
Mitigants	Mature Credit + Secondary Market 97-98% EBITDA	Claims Mechanism Deemed Availability (under TSA)	Capabilities Contracts with Leading Developers	Hedging Large Capex Pipeline	Lower Lead Time Contracts with Leading Developers	Stable Sector Large Capex Pipeline

Approximate returns and margins



Unlocking Value through Cap Rate Compression

Long life of a power transmission project enables financial reengineering and serves as an IRR protection mechanism



Capitalizing on the Opportunity

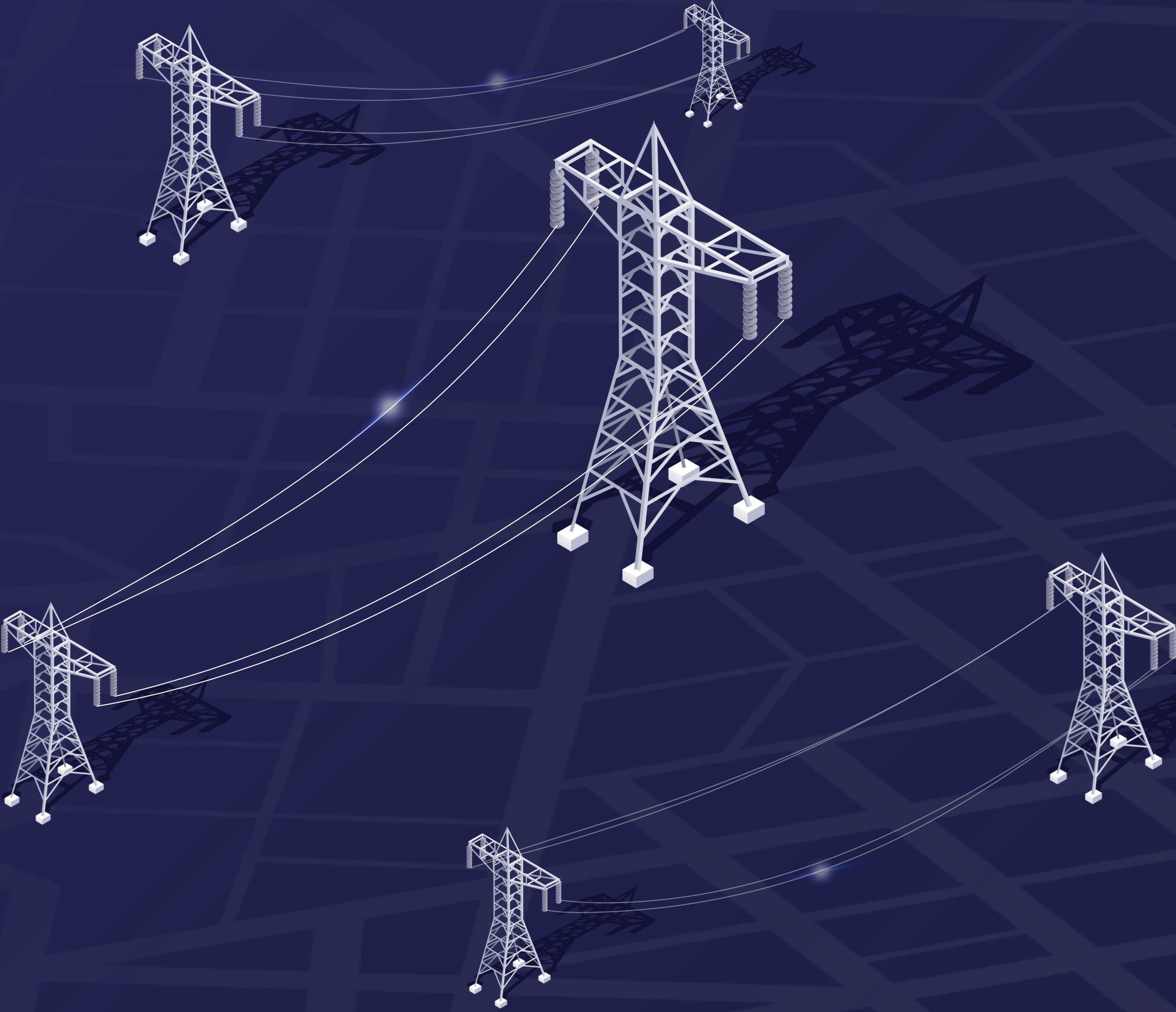


Key Strategies Shaping India's Power Transmission

Market players are strategically evolving to capitalise on the unprecedented growth opportunity



Market Mapping



Value Chain

An efficient transmission operating system comprises of seamless integration amongst EPC players, developers and OEMs

Tower manufacturer								
Transformer								
Cables & conductors								
Switchgear								
EPC								
Developer								
InvIT								

Recent Deals in Power Transmission

Market participants have been raising capital in anticipation of the upcoming capex pipeline

	Aug'24	Aug'24	Aug'24	Jul'24	Jul'24	Jun'24	Mar'24	Mar'24
Target		 						
Deal Type	Pref Issue	JV	OFS	QIP	QIP	QIP	JV	M&A
Deal Size	667	2,000	1,800	8,300	1,250	500	4,200	178
Investors	 	 	Multiple Investors	 	Multiple Investors	Multiple Investors		
Remarks	Towards repayment of debt and expansion	Co-Development of under construction assets	KKR sold 17.3% unit stake in IndiGrid	Transmission capex, deleveraging, smart meters	EPC works for transmission projects, AMI solutions and data centers	Growth capex, deleveraging, M&A	India's maiden transmission development platform	Acquisition of manufacturing and EPC capabilities
Growth Capex								








Recent Deals in Power Transmission

Market participants have been raising capital in anticipation of the upcoming capex pipeline

	Nov'23	Nov'23	Sep'23	Dec'22	Nov'22	Aug'22	Apr'21	Jan'20
Target		Khargone TL 		Rajgarh TL 				
Deal Type	QIP	M&A	Rights	Forward SPA	PE Sale	QIP	IPO	PE
Deal Size	1,000	1,500	200	430	115	82	968	1,000
Investors	Multiple Investors		Multiple Investors		Nalanda Capital	Multiple Investors	Multiple Investors	
Remarks	Working capital	Acquired operational asset from Sterlite Power	Growth capex, working capital	Forward purchase agreement with G R Infra Ltd	Nalanda India fund exits post Investment in FY14	Towards repayment of debt, working capital	Exit for investors like Blackrock, Smallcap World Fund	Growth capex for setting up power transmission projects
Growth Capex								








Key Emerging Players in the Transmission Sector

Massive capex pipeline is resulting in rapid scaling up by existing as well as new players

Companies	Description	Scale	Market Cap	Order Book	Revenue FY24	EBITDA FY24	Net Debt FY24	Rating	Shareholding	Key Highlights
 APAR Tomorrow's solutions today	EPC/ Manufacturing of TL, cables, conductors, specialty oils, telecom solutions	Turnkey: 165+ Conductors: 2L MT	40,000	8,300	16,153	10%	-	ICRA A+	Promoters: 58% FII: 12% DII: 18%	Apar's order book in cable & conductor business crosses INR 8,300 Cr
 APRAVA	Thermal, solar and wind generation, power transmission and smart metering assets	Generation: 3.2 GW Tx: 1,000 MVA Smart Meters: 4.7 Mn	N/A	N/A	5,581 (FY23)	29%	5,366 (FY23)	IND AA+	CLP: 50% CDPQ: 50%	Won 4 th ISTS TBCB of TPC INR ~2,200 Cr in Apr'24, other projects (TPC INR ~2,000 Cr)
 BAJEL	Turnkey EPC for transmission & distribution	TL Cumm: 7,900 ckm Tx Cumm: 2,000 MVA Mfg Cumm: 33K MT	2,940	3,598 2,267*	1,169	1%	-	CRISIL A1	Bajaj Electricals: 63% FII & DII: 8%	Won TL orders from PGCIL worth INR 587 Cr in Jul'24
 GRIL	EPC & Infra Co focused on roads, railways, metro, optic fibers, airports and transmission	Roads: 3,200 km Mfg: 1.4L MT	16,026	14,975 300*	7,788	18%	3,063	CRISIL AA	Promoter: 75% FII: 1% DII: 21%	Won 3 rd ISTS TBCB project of TPC INR 800 Cr in Aug'24, other projects recently won (TPC INR ~1,000 Cr)
 KALPA-TARU	Turnkey EPC solutions for T&D, buildings & factories, water supply & irrigation, railways, oil & gas pipelines, urban mobility, highways, airports	TL: 1,794 ckm Mfg: 2.4L MT	22,638	57,195 20,597*	19,626	9%	2,878	CRISIL AA	Promoter: 36% FII: 10% DII: 46%	Divested stake in a transmission asset to Apraava energy in Feb'23, Order inflows cross INR 7,000 Cr in Jul'24
 KEC KEC INTERNATIONAL LIMITED	Turnkey EPC in transmission & distribution, railways, civil, urban infra, renewables, oil & gas pipelines, cables	TL: 4,300 ckm Tx: 4,500 MVA Mfg: 3.2L MT	25,176	32,715 16,685*	17,813	5%	3,712	ICRA A+	RPG: 52% FII:13% DII:25%	Secured 1st order for transmission conductors in Mar'24 Divested stake in transmission asset to Adani in Feb'19 Orders cross INR 7,600 Cr in Jul'24
 meil	EPC & Infra Co - hydrocarbons, electric vehicles, transportation, power and irrigation	N/A	N/A	1,87,000	31,766 (FY23)	18%	- (FY23)	CRISIL A1+	Promoter: 100%	Recently won 4 InSTS and 2 ISTS projects

Key Emerging Players in the Transmission Sector

Massive capex pipeline is resulting in rapid scaling up by existing as well as new players

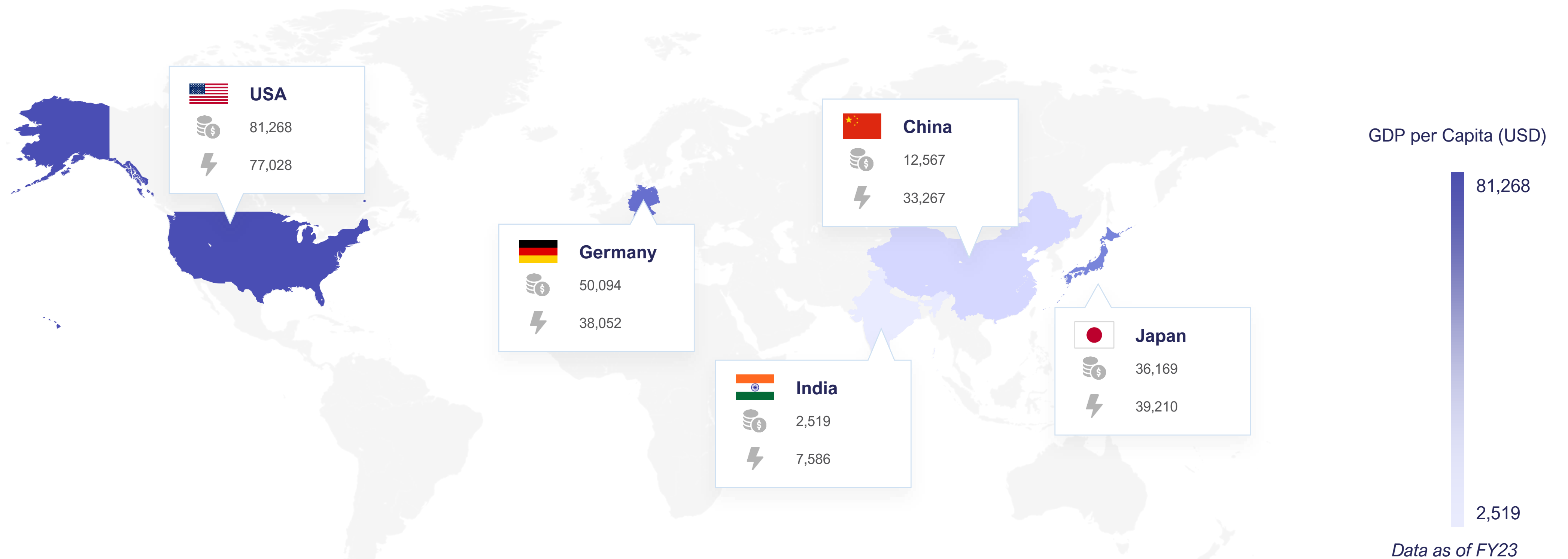
Companies	Description	Scale	Market Cap	Order Book	Revenue FY24	EBITDA FY24	Net Debt FY24	Rating	Shareholding	Key Highlights
 MONTECARLO Born to Achieve	Construction of roads, railways, transmission projects, mining and quarrying, smart meters	Ongoing projects: 62	N/A	12,000	4,897	489	1,500	CRISIL AA-	Promoter: 100%	Placed a bid for TBCB project in May'24 Awarded 3 smart meters projects by 2024
 ReNew POWER	Power generation, energy as a service, manufacturing of solar cells, modules, power transmission	Generation: 15.6 GW Tx: 5,000 MVA	N/A	N/A	8,112	85%	58,212	IND A+	Promoter: 4% CPPIB: 30% ADIA: 23% JERA: 11%	COD for 1st ISTS project in Nov'23 Targeting 50 GW by FY30
 SALASAR Building a stronger future	EPC, fabrication, manufacturing, contractual galvanization, Sectors: telecom, power, renewables, smart city	TL: 885+ ckm Capacity: 1L+ MT Rail electrification: 695+ km	3,500	2,460	1,208	10%	319	IVR A	Promoter: 57%	Awarded 7 T&D projects of INR ~1,000 Cr by TANGEDCO in Mar'24 Acquired EMC in Mar'24
 SKIPPER Limited	Transmission tower manufacturing and EPC line construction	Tower Mfg: 2.1L MT Polymer Mfg: 43K MT	4,740	5,844 3,448*	3,282	10%	442	Acuite A	Promoter: 66% FII & DII: 4%	Rights Issue of INR 200 Cr in Sep'23
 TATA POWER	New-age energy solutions, generation, renewables, power transmission and distribution India's largest vertically integrated power company	Generation: 20.2 GW TL: 6,688 ckm Customers: 12.5 Mn	1,41,665	15,640	61,449	21%	40,328	CRISIL AA+	Tata: 47% FII: 10% DII: 15%	Planned capex INR 20K Cr in FY25, Won 2nd ISTS TBCB Project of TPC INR ~2,500 Cr in Aug'24, other projects (TPC INR ~2,000 Cr)
 TECHNO ELECTRIC & ENGINEERING CO. LTD.	Turnkey EPC for power generation, transmission, and distributions and data centres	# Projects: 450	18,389	9,101 4,889 *	1,502	14%	-	ICRA AA	Promoter: 62% FII: 8% DII: 25%	JV with Indigrd, Norfund and BII to develop 3 ISTS projects in Aug'24 QIP of INR 1,250 Cr in Jul'24 Won 2 ISTS TBCB Projects of TPC INR ~700 Cr in Apr'24, Jul'24
 torrent POWER	Integrated power utility in power generation, transmission, distribution, manufacturing and supply of power cables	Generation: 4.3 GW Customers: 4.1 Mn	89,635	N/A	27,183	18%	11,166	CRISIL AA+	Promoter: 54% FII: 8% DII: 20%	Won 1st ISTS TBCB Project of TPC INR ~1,500 Cr in Jun'24 Board approved private placement of INR 8K Cr in May'24

Global Outlook

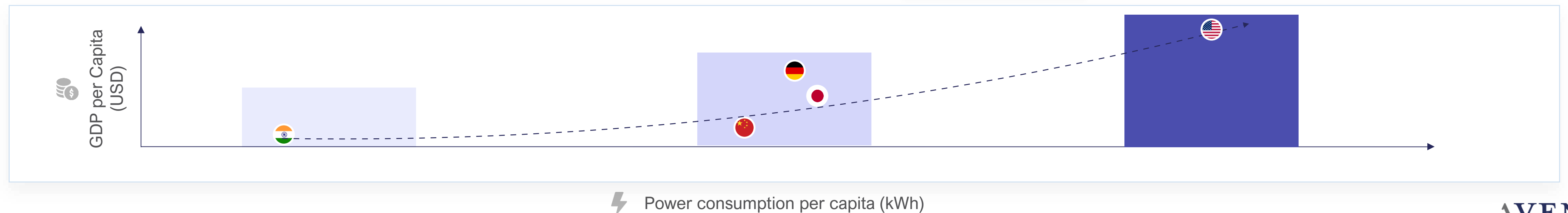


India's Journey to Become a Developed Nation by 2047

Roadmap to development through estimated capex of INR 110 Lakh Cr



To become a developed nation (~USA) by 2047, India would need to achieve 10x power capacity, resulting in transmission capex of **INR ~110 Lakh Cr**



Global Investors

Private Equity Investors, SWFs, Pension Funds




DFIs



Strategics



Recent Global Deals in Power Transmission

	Aug'24	Aug'24	May'24	May'24	Mar'24	Feb'24	Dec'23	Dec'23
Target								
Deal Type	PE	Private placement	PE	M&A	PE	PE	PE exit	PE
Deal Size	570	1,081	890	2,500	3,500	500	N/A	1,200
Investors								
Remarks	Develop the connector grid from New south wales to victoria (Australia)	Development of transmission assets in Germany	Developing a clean energy transmission project	Strategic acquisition in USA	Strategic partnership for clean energy transition in USA	Investment in Brazilian transmission sector	Strategic exit for Blackstone in USA	To accelerate US clean energy transition
Growth Capex								

Recent Global Deals in Power Transmission

	Dec'22	Nov'22	Sep'22	Jul'22	May'22	Nov'21	May'21	Sep'20
Target								
Deal Type	PE	M&A	Rights	M&A	M&A	M&A	PE Sale	JV
Deal Size	220	7,800	2,000	3,190	292	392	968	178
Investors						 		 
Remarks	Verene energia, CDPQ's LATAM platform	Enhance Hitachi's global market positioning	Support UK's renewable energy infrastructure	Follow-On power transmission investment by TEPCO in Germany	Creating of CDPQ transmission platform in LATAM	Towards repayment of Debt, working capital	Exit for investors like Blackrock, Smallcap World Fund	Repayment of debt, working capital & growth capex
Growth Capex								


About
AVENER




Investment Banking | Infrastructure & Real Assets

Leading financial advisors in the Infrastructure & Real Assets space in India

Renowned experts in Indian Infrastructure and Real Assets space

70+
 Platform, equity, M&A and debt transaction closures by the team till date

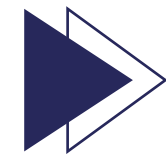
\$ 15 Bn+
 Total fund raising by the team till date

25+
 Among the largest teams in the country dedicated towards the Infra space

Policy Formulation
 Part of committees of various regulatory bodies

Transaction Footprint in FY24

18
 Total deals
\$ 4.6 Bn
 Total deal value



06
 M&A/
 Private Equity
 Value: \$ 1.3 Bn

04
 Project
 Finance
 Value: \$ 1.4 Bn

08
 Refinancing/
 Structured Debt
 Value: \$ 1.9 Bn

Accolades

-  Ranked 5th in M&A & 7th in PE in YTD24
-  Ranked 8th in PE in 2021 & 2019
-  Ranked among the Top 10 advisors for Asia & Australia by Finance Asia in 2023
-  Ranked among the Top 25 bookrunners in Asia by Thomson Reuters in 2019

Key Clientele - Leaders of Respective Sectors



Avener's Connects

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