



Renewable Energy Insights

FUTUREScape : THE CUSTOMER EXPERIENCE COMPANY

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Renewable energy

INTRODUCTION

India could be one of the most exciting power markets, especially with respect to renewable energy.

THIS REPORT IS BASED ON INDIA'S TOP COMPANIES FOR SUSTAINABILITY AND CSR
A 5 YEAR STUDY OF TOP 200 INDIAN COMPANIES

Insights |

There is a build up in e-mobility, green financing and setting up of infrastructure for renewable energy based products.

Automotive companies are launching or gearing up to launch hybrid and/or electric vehicles.

Battery providers such as Exide are ramping up production of batteries for e-vehicles.

Tyre manufacturers like CEAT are customizing tyres for electric vehicles.

Banks are tying up for e-vehicle financing.

Tata Power and NTPC are establishing the infrastructure for electric vehicle charging stations.

As part of green financing, banks continued to lend to renewable energy-based projects as part of their priority lending. Axis Bank and YES Bank issued Green Bonds in the year. The proceeds will be utilized to finance and/or refinance environment-friendly projects. IndusInd Bank has committed to financing renewable energy of 2,000 MW over 5 years.

Energy and utilities companies are ramping up their renewable energy capacities, and utility companies are offering renewable energy as part of their product portfolio, which forms up to 30% of their total generation capacity. Separately, Power Grid is developing a Green Energy Corridor to address transmission of renewable energy and to integrate it into the national grid.

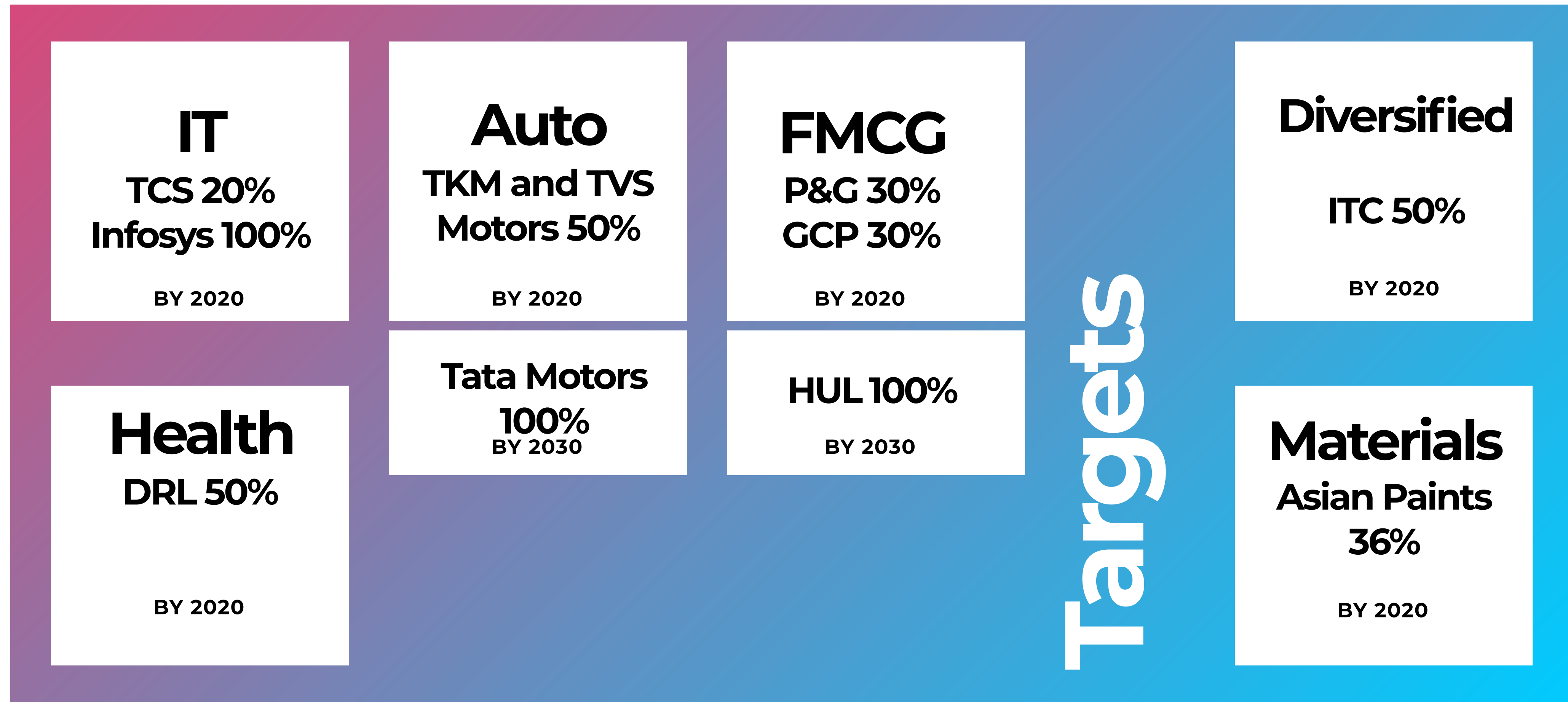
01

Renewable energy consumption is increasing across industries

Industry	Renewable energy as % of energy consumed		Targets
	2015-16	2016-17	
IT	3%-26%	7%-44%	TCS: 20% by 2020; Infosys: 100%
Automotive	6%-20%	10%-38%	Tata Motors: 100% by 2030 TKM and TVS Motors: 50% by 2020
Consumer Staples	15%-48%	20%-29%	GCP: 30% by 2020 HUL: 100% by 2030
Diversified	~33%-49%	30%-41%	ITC: 50% by 2020
Healthcare	NA; DRL: 13%	4.5%-12%	DRL: 25% by 2020
Materials	5%-8%	7%-22%	Asian Paints: 36% by 2020

Bajaj Auto sources around 60% of its energy requirements from renewable sources (mostly solar). Some companies target to increase share of renewable energy utilized in their business to 20%-50% of total energy utilized by 2020. Tata Motors and Hindustan Unilever Limited aim to move completely to renewable energy by 2030.

Renewable energy targets



02

Captive renewable energy capacity range has increased

There were many new installations, mostly solar, during 2016-17 which came into operation.

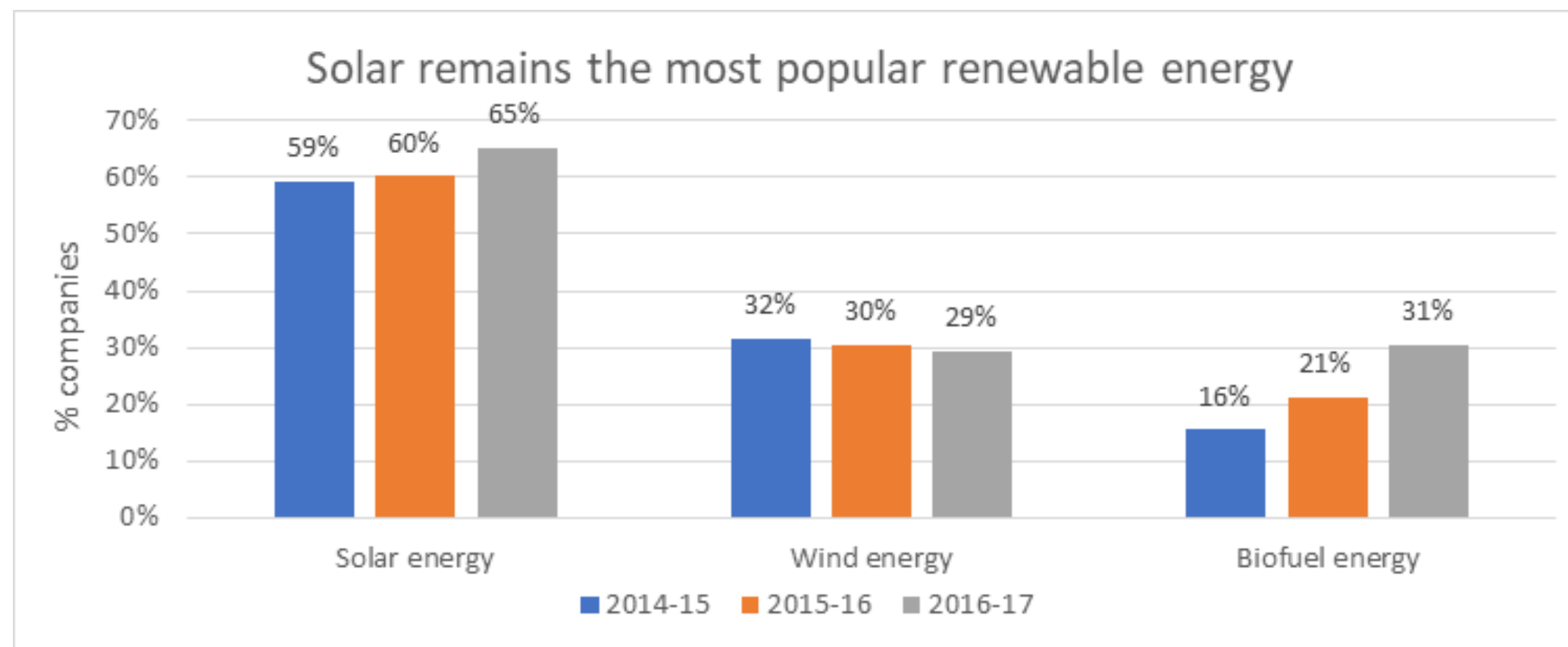
- NLC India envisages an addition of 4000 MW solar generation capacity in different states and 200 MW of wind-based power generation by 2025.
- Indian Oil plans to increase its installed grid-connected renewable energy capacity to 260 MW by 2020.

Industry	Captive renewable energy capacity	
	2015-16	2016-17
Automotive	110KWp-4.2MW	1.5MW-21.9MW
Diversified	35KW-16.5MW	50KW-27MW
Healthcare	100KW-140KW	100KWh-30MW
Energy	25KW-75MW	60KWp-188MW
IT	40KW-2MW	10KW-15.3MW
Telecom	0.8MW-4.5MW	25KW-17.5MWp

03

Solar continues to be the most preferred renewable energy source across industries

It leads the second most popular renewable energy source by a wide margin in most cases. In Materials sector, many companies have shared plans to add significant solar capacities in the near term. Hindustan Zinc plans to add 100MW of captive solar energy capacity in near future.



04

Biofuel has emerged as the second most preferred renewable energy source

Biofuel has emerged as the second most preferred renewable energy source in many industries during 2016-17, as against only Consumer Staples 2015-16. Biofuel resonates addresses multiple challenges of rising carbon emissions, dependence on imported crude oil, solid waste management, and supporting the people at the bottom of the pyramid. The Indian government has made several policy level interventions for biofuels in the past two years and in May 2018 the cabinet has approved the National Policy on Biofuels. Energy industry is likely to witness increased use of biofuel since now companies have been mandated to use 5-10 percent of biomass pellets alongside coal for power generation in thermal power plants across the country. Indian Oil Corporation, BPC India, an engineering firm, and others, have identified ten locations for setting up second-generation ethanol plants.

Sector	Significant renewable energy sources used (per cent companies studied)			
	Solar	Wind	Biofuel	WHR
Capital goods	69 per cent		31 per cent	
Consumer Staples	67 per cent		53 per cent	
Energy	70 per cent	60 per cent		70 per cent
Healthcare	80 per cent		60 per cent	
Materials	73 per cent			60 per cent
Utilities	83 per cent		42 per cent	
Telecom	80 per cent	80 per cent		
IT	78 per cent	22 per cent	22 per cent	
Financials	41 per cent	6 per cent		
Auto	89 per cent	56 per cent		

Biomass use

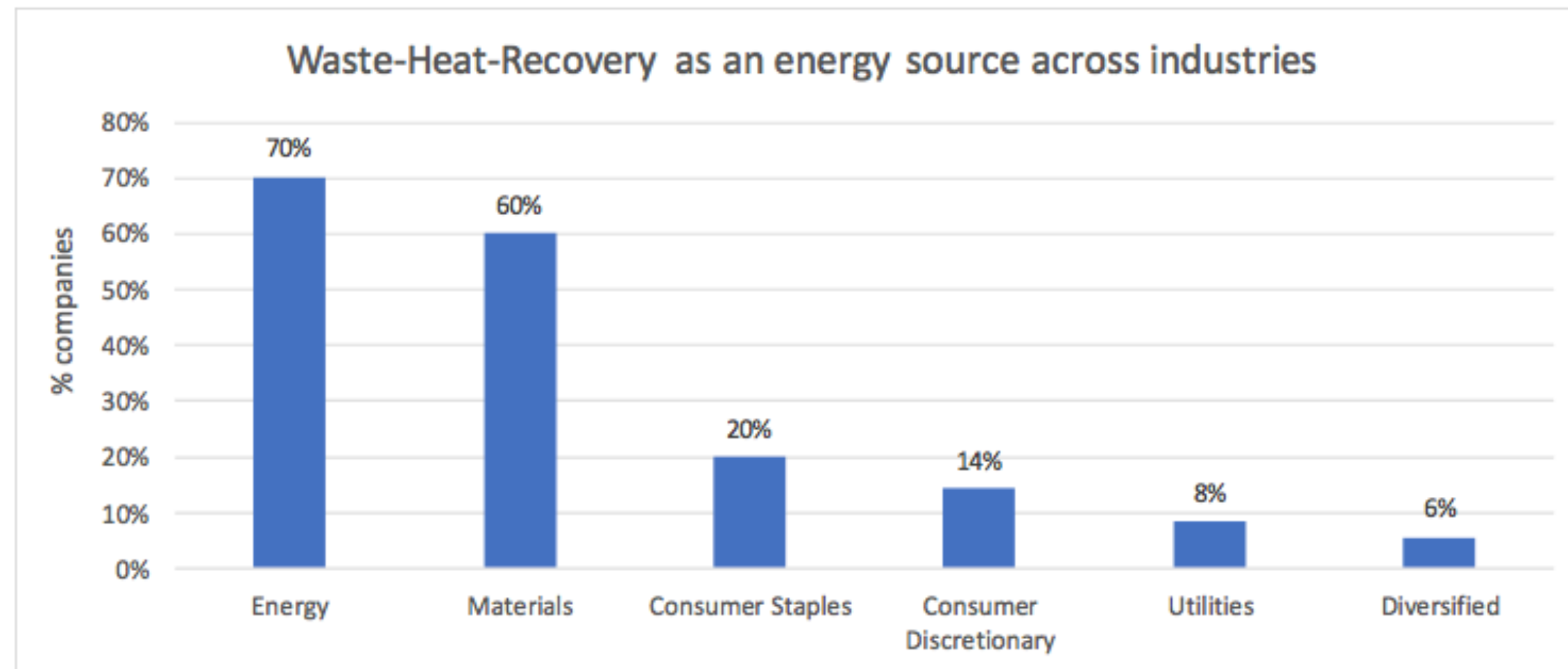
Ambuja Cements Farmer Producer Organizations (FPOs) in Ropar, Rabriyawas, Darlaghat, Chandrapur and Kodinar have partnered with Ambuja Cement for the use of biomass as an alternative fuel resource (AFR). Under the project, the company procures biomass directly from the FPOs. Farmer groups are paid to provide bio-wastes like sugarcane trash, cotton stalk, wheat straw and other crop residues which are then used to replace conventional fuels in company kilns. It also prevents pollution as farmers do not burn the crop residue.

DRL, Sun Pharmaceuticals and Cipla uses agriculture waste/biomass briquette based fired boilers.

KPTL has used alternative fuels for its Biomass Plants like Eucalyptus, Juli Flora, Peddystraw, Fenu Greek, Lentid of Orange & Black Lentid etc. in order to ensure the availability of Biomass in various seasons throughout the year.

05

Waste heat recovery (WHR) is a popular renewable energy source in Energy and Materials industries.



Waste heat is common to nearly every type of manufacturing process and companies harness this for their energy requirement. It has huge potential to contribute to the energy requirement of a company. WHR forms 50% of energy requirements at some units of Coromandel International and at Chambal Fertilizers, 182MW of power comes from waste heat out of 200MW power consumed.

Waste heat recovery

UltraTech Cements, with an aggregate capacity of about 59 MW, has emerged as a waste heat recovery systems leader in India's cement sector.

JSW Steel utilizes nearly 99% of the waste gas to generate electricity and steam, and significantly reduced GHGs which otherwise would have potentially added to the global warming.

Vedanta owned Sesa Iron Ore and Sterlite Copper have installed Waste Heat Recovery boilers with a total capacity of 95 MW.

05

Renewable energy in logistics and Supply chain still a long way away

Coca-Cola India is promoting the use of renewables, especially biofuels, across its bottling units. Biomass now accounts for 48% of primary energy at bottling units from 39% earlier.

EID Parry (India): “The farmers are engaged with the Company in a number of initiatives, including use of solar powered pump sets.”

GCP: “We recommend our suppliers to use renewable sources of energy wherever possible.”

Renewable energy in logistics: Only three companies stated in their reports that they utilize renewable energy in their logistics. Coca-Cola India’s commercial vehicles in Delhi have moved to CNG. APSEZ prefers electric bikes over petrol bikes for various port activities. At Tata Power, electric vehicles are used for transport within plant premises.

Renewable energy in supply chain: Only few companies, mostly consumer staples, shared their renewable energy programs for their supply chain. Separately, Tata Motors encourages its supply chain to use renewable energy and Energy companies are solarizing their retail outlets wherever possible.

06

Renewable energy forms significant part of CSR projects

% COMPANIES THAT FUND RENEWABLE ENERGY BASED CSR PROJECTS

Energy	60%
IT	44%
Other industrials	43%
Materials	40%
Telecom	40%
Consumer Staples	33%
Financials & Other Financials	29%
Utilities	25%
Capital goods	19%
Consumer Discretionary	17%
Diversified	11%
Healthcare	10%

Community programs were mainly for electrification (mostly solar) and biogas-based cooking units. Energy sector leads with majority companies contributing CSR funds for these projects. Interestingly, at the aggregate level more service companies spend on renewable energy than manufacturing companies.

- 27% of Manufacturing companies spend on renewable energy based CSR projects
- 38% of Services companies spend on renewable energy based CSR projects

Overall 31% of India's top 200 companies spend on renewable energy based CSR projects

Renewable energy in CSR projects

Cummins India has developed a 25 kWe genset which uses locally available agricultural waste viz. rice husk (renewable) for meeting remote rural electrification requirements.

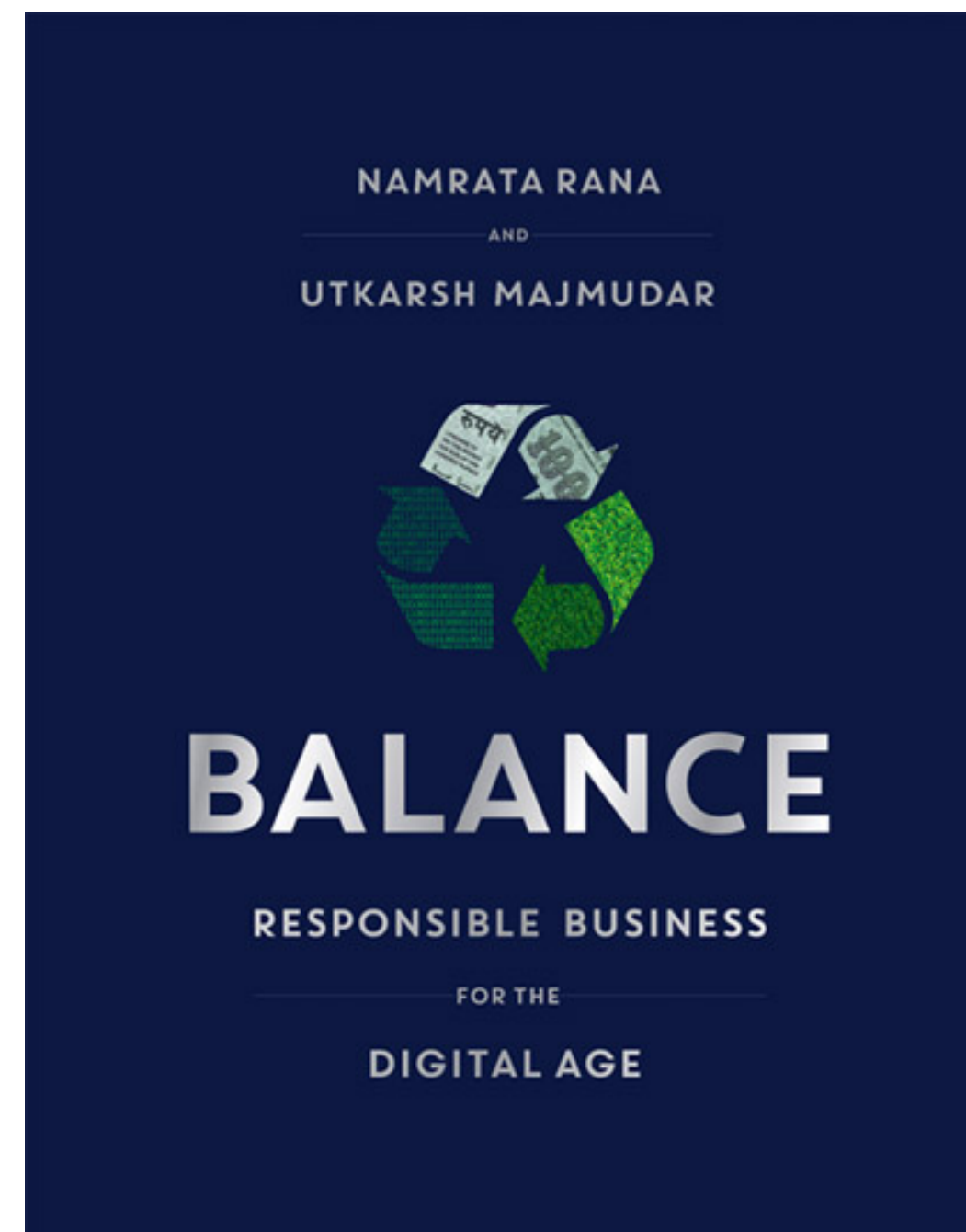
GCP is creating renewable energy ecosystems in parts of rural India and making local youth more aware about the potential of renewable energy to meet their energy needs.

Hindalco Industries has installed 2 solar operated 24×7 drinking water supply at Samri and 40 solar street lights at Gare Palma Mines.

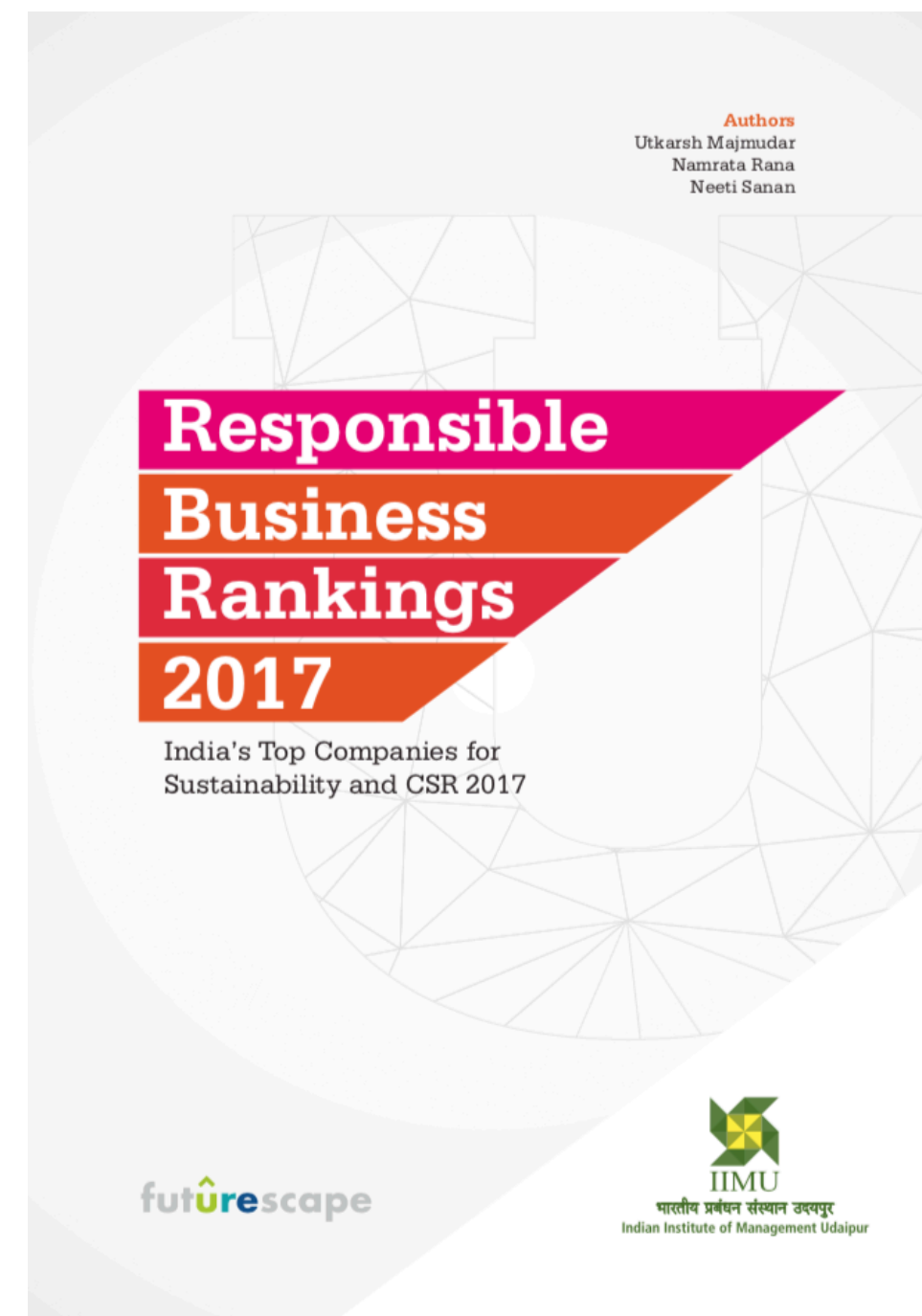
Jindal Stainless has taken the Solar Photovoltaic Irrigation Project to three villages.

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BOOK



REPORTS



SECTOR INSIGHTS

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