



10TH GLOBAL
PHARMACEUTICAL
QUALITY SUMMIT

Next Frontier: Sustainability Agenda

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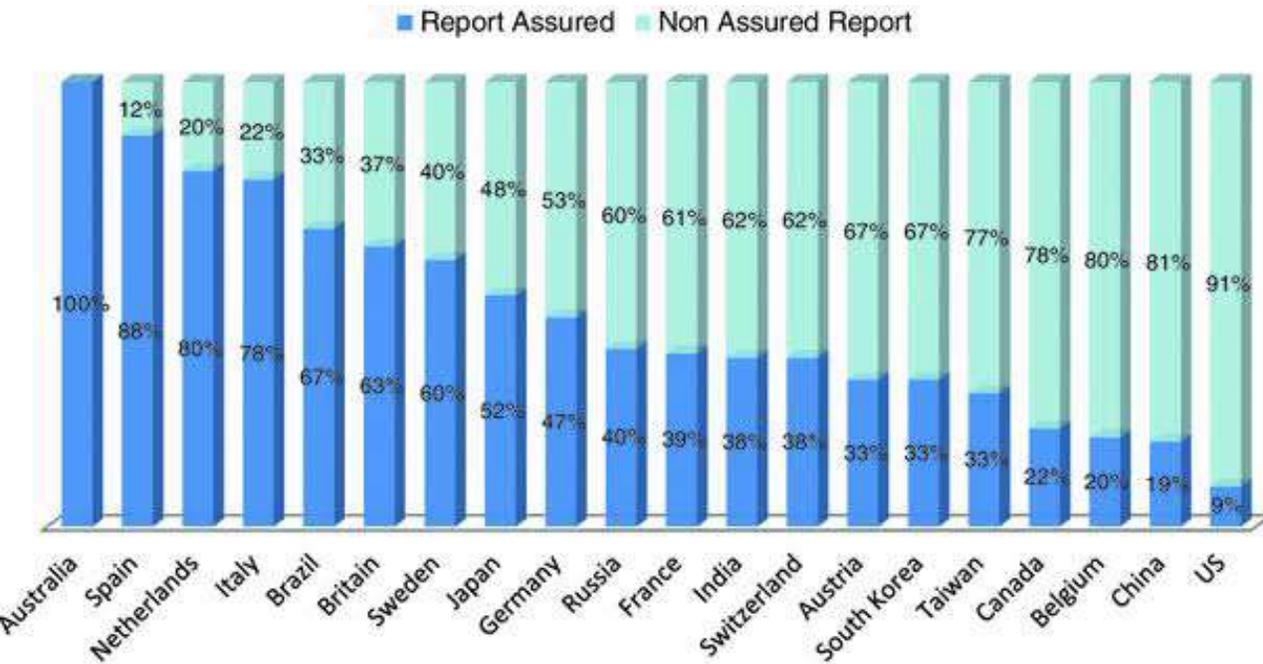
The Evolution of Sustainability in past decade

- Moved from “good” to do to “must” have
- Regulations introduced which became mandatory
- Quantum of ESG Rating agencies increased significantly
- Enthusiasm to be the “best” in Sustainability and ESG
- With above Sustainability and ESG became a key indicator and part of core agenda for Organizations, Regulators and doing Business.

Creation of an Industry Sector

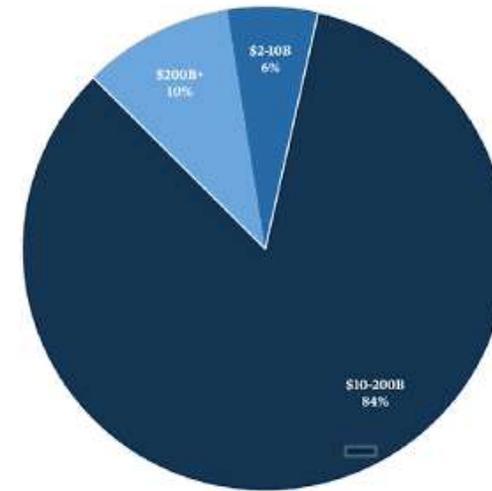
- Applications - Carbon, Water, Waste and Biodiversity: Relevance of specialist consulting stream and birth/evolution of Industry (Water, Solar, Wind, Waste Mgmt, Hydrogen, Green/Blue/Brown chemicals); Biodiversity related consulting transitioned to action on ground
- Data – Collation, Interpretation, Management, Tracking and Reporting: Birth of SaaS
- Partnership with out of box thinking generating value or R&D / Innovation: Parallel streams such as Recyclable Bottles, (Bio)Plastics, CCS, Batteries etc.
- Ratings, Certifications and Industry Forums/Consortiums: Dedicated Ratings (CDP, Ecovadis, DJSI, ISS, Nikkei, FTSE, Crisil, etc.); Neutrality certifications/assurance; Industry and Hybrid Forums (TfS, PSCI, etc.)

Sustainability Reporting

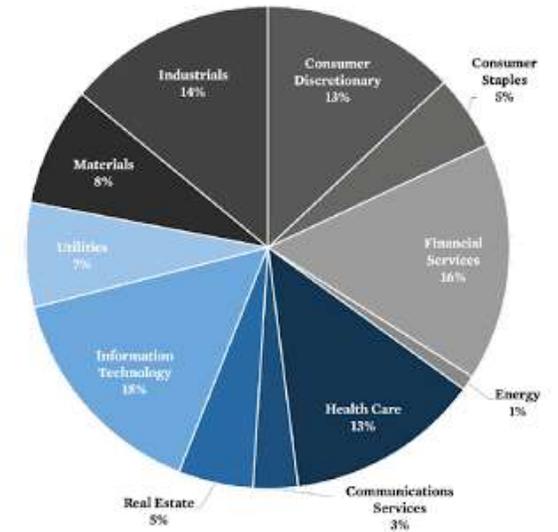


* This Figure presents just countries which have more than two organisations in the sample providing a formal sustainability report.

Percentage of sustainability reports published by large-cap companies



Our review also included a very broad scope of eleven distinct industries¹:



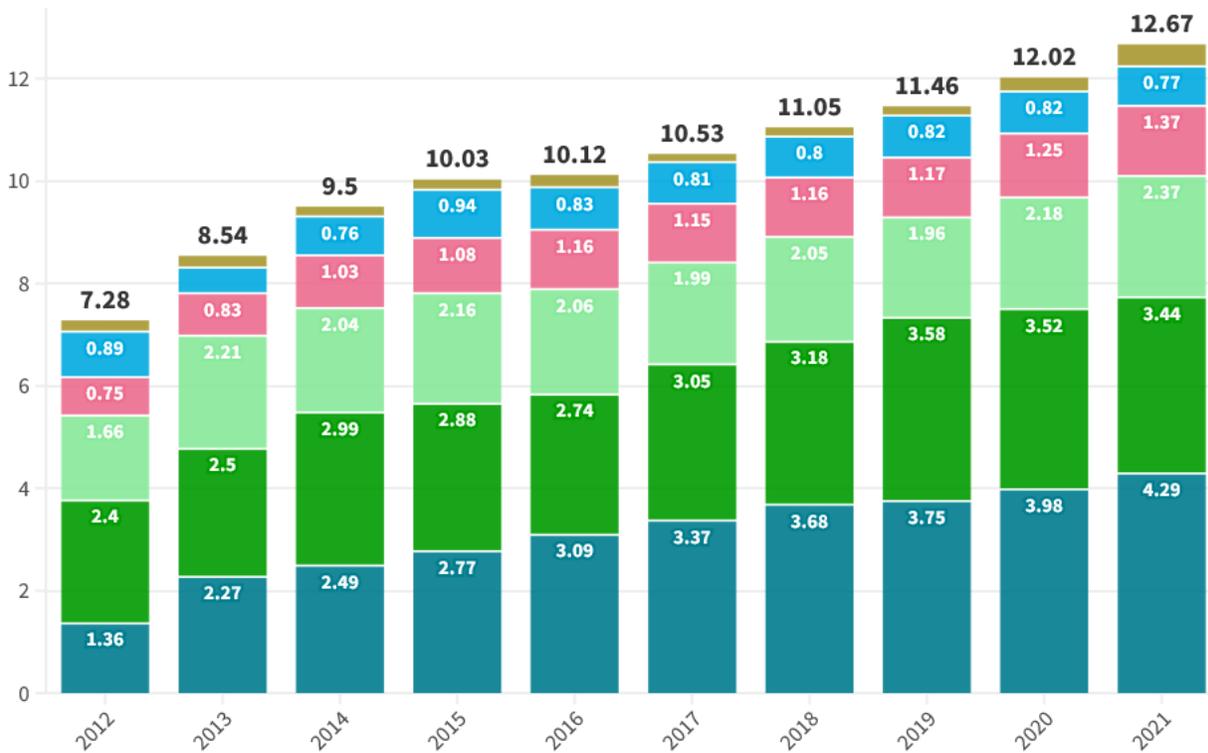
¹ Based on the Global Industry Classification Standard (GICS®)

Sustainability jobs: 42 million renewable energy jobs by 2050

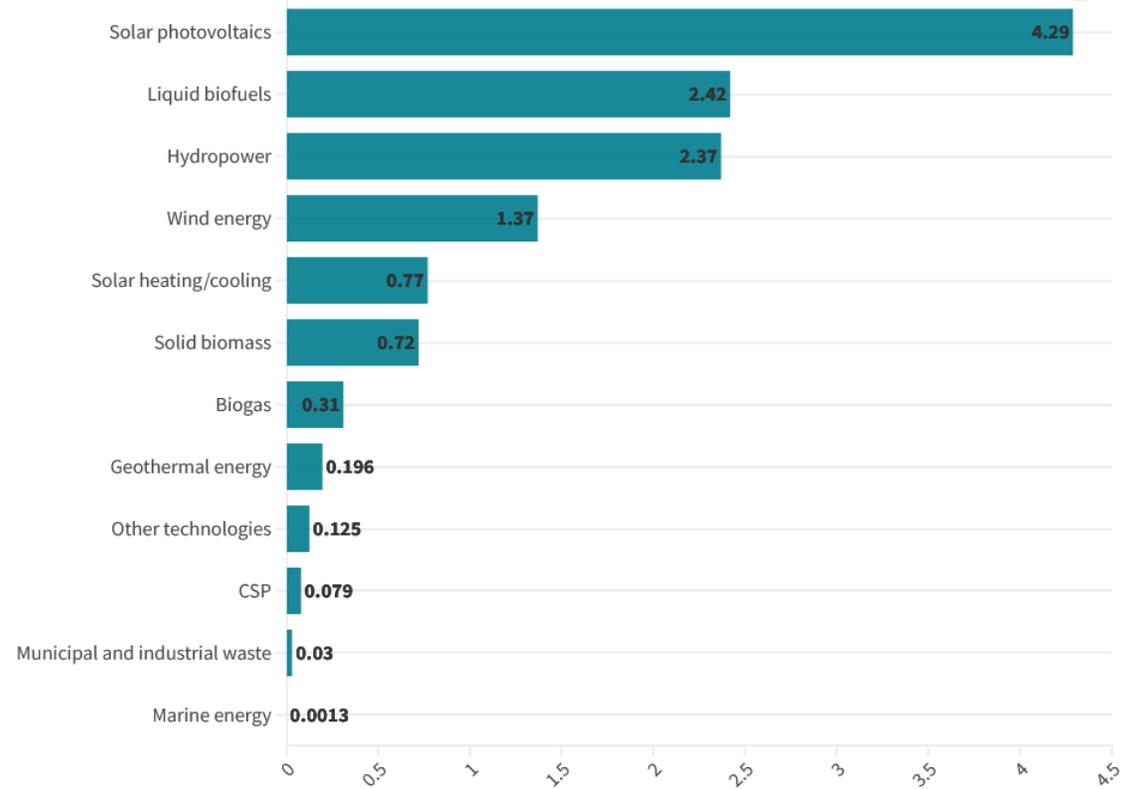


■ Solar photovoltaic ■ Bioenergy ■ Hydropower ■ Wind energy ■ Solar heating/cooling ■ Others

Million jobs



Worldwide green jobs in different sectors in 2021 (million)



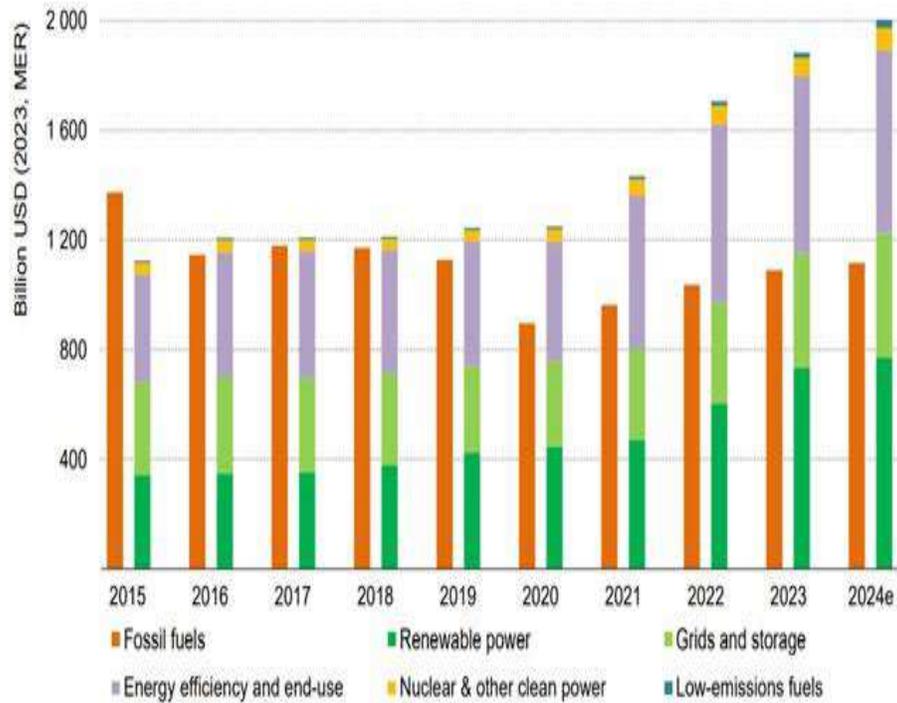
Number of renewable energy employees in leading countries in 2021 (million)



Industry Growth and Potential

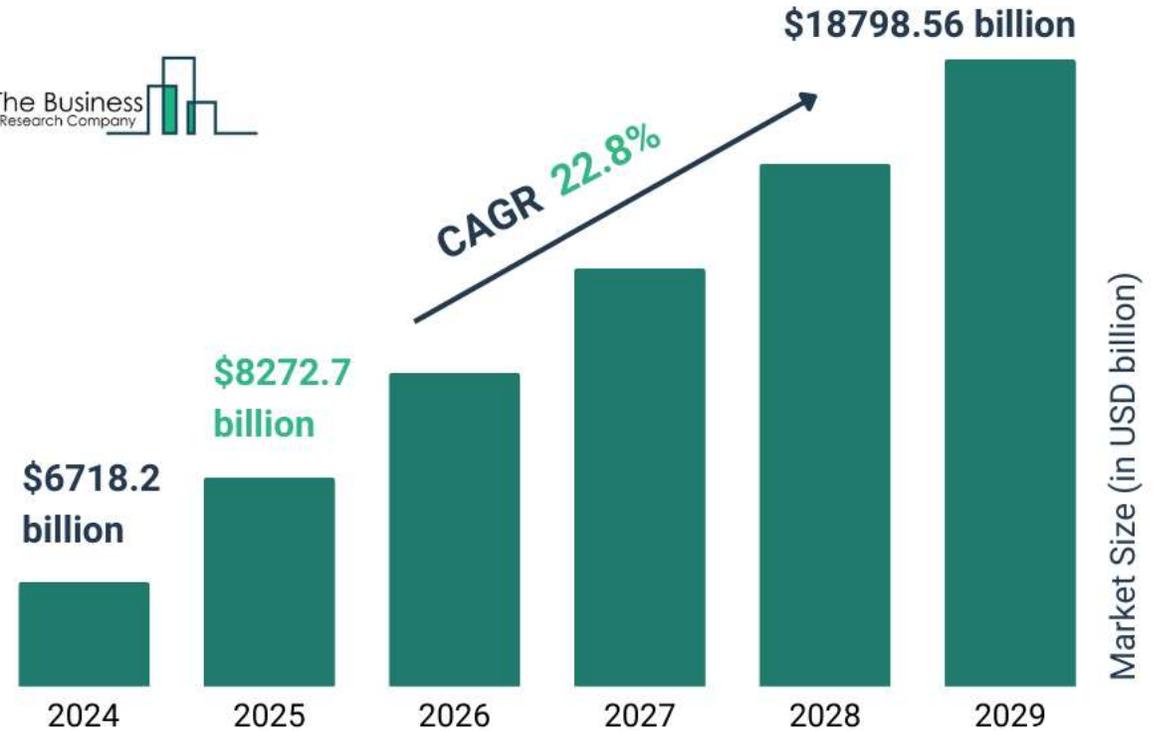
The world now invests almost twice as much in clean energy as it does in fossil fuels...

Global investment in clean energy and fossil fuels, 2015-2024e



IEA. CC BY 4.0

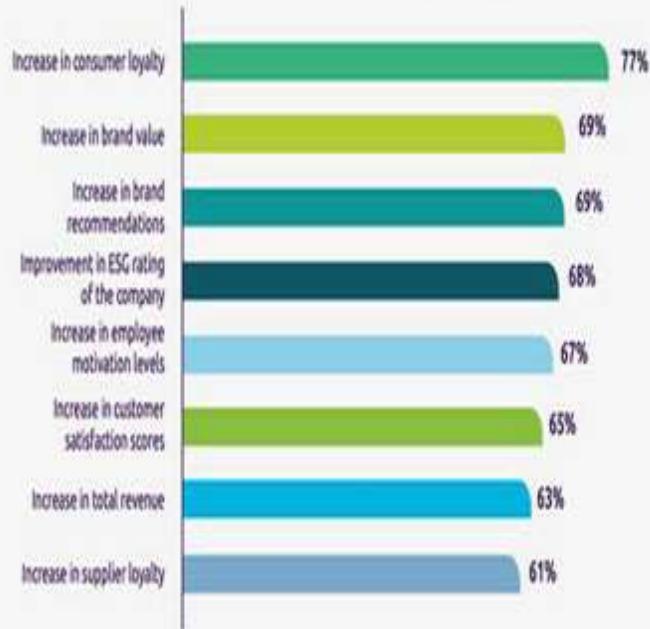
Sustainable Finance Global Market Report 2025



Asia is driving Green Tech Growth

Figure 10. Key benefits derived from sustainability initiatives

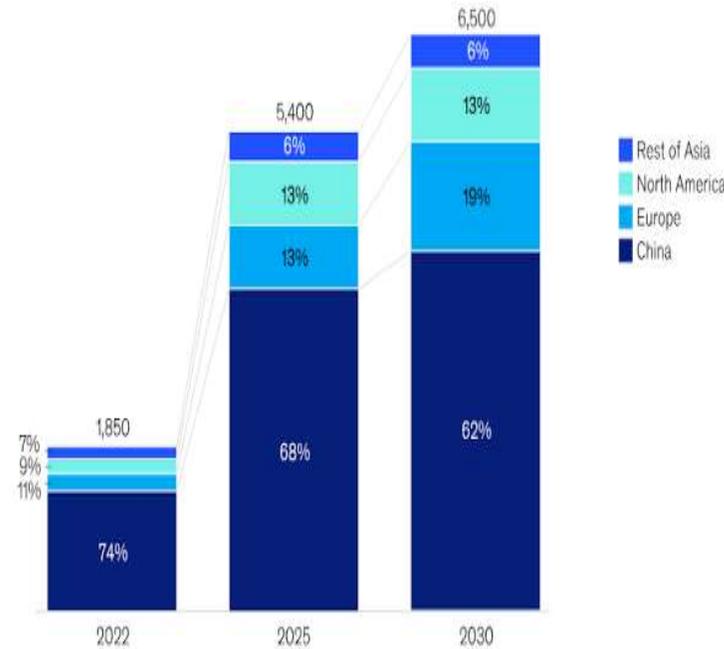
Percentage of organizations agreeing to the benefits below



Source: Caggenini Research Institute, Sustainability in Consumer Products and Retail Survey, April–May 2020, N=750 consumer products and retail organizations.

Current global battery cell capacity announcements suggest a move toward regionalization in Europe and North America.

Global announced nameplate capacity for production of Li-ion battery cells, GWh/year

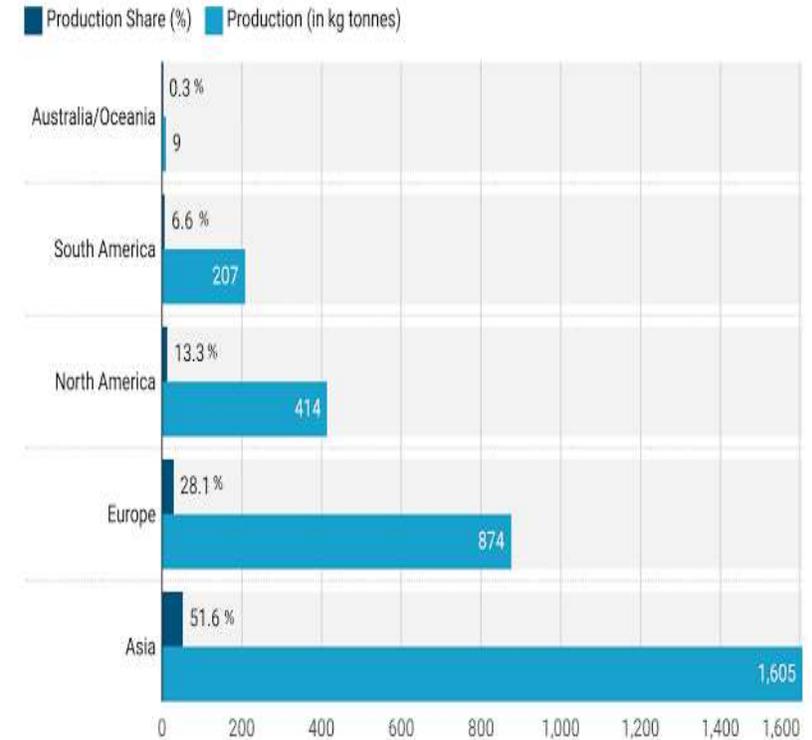


Source: McKinsey Battery Insights—supply model, team analysis, Q4, 2022

McKinsey & Company

Global Bioplastics Production Capacities - by Region

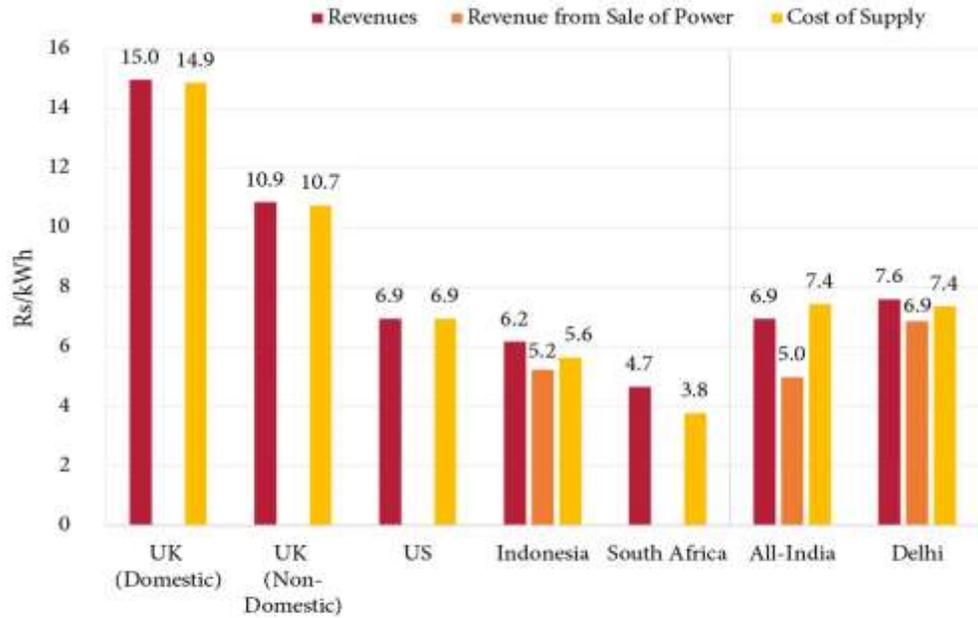
Production Share in Percentage and Production in Tonnes



(Production Share in %/Production in Tonnes)

Source: Market.us Media

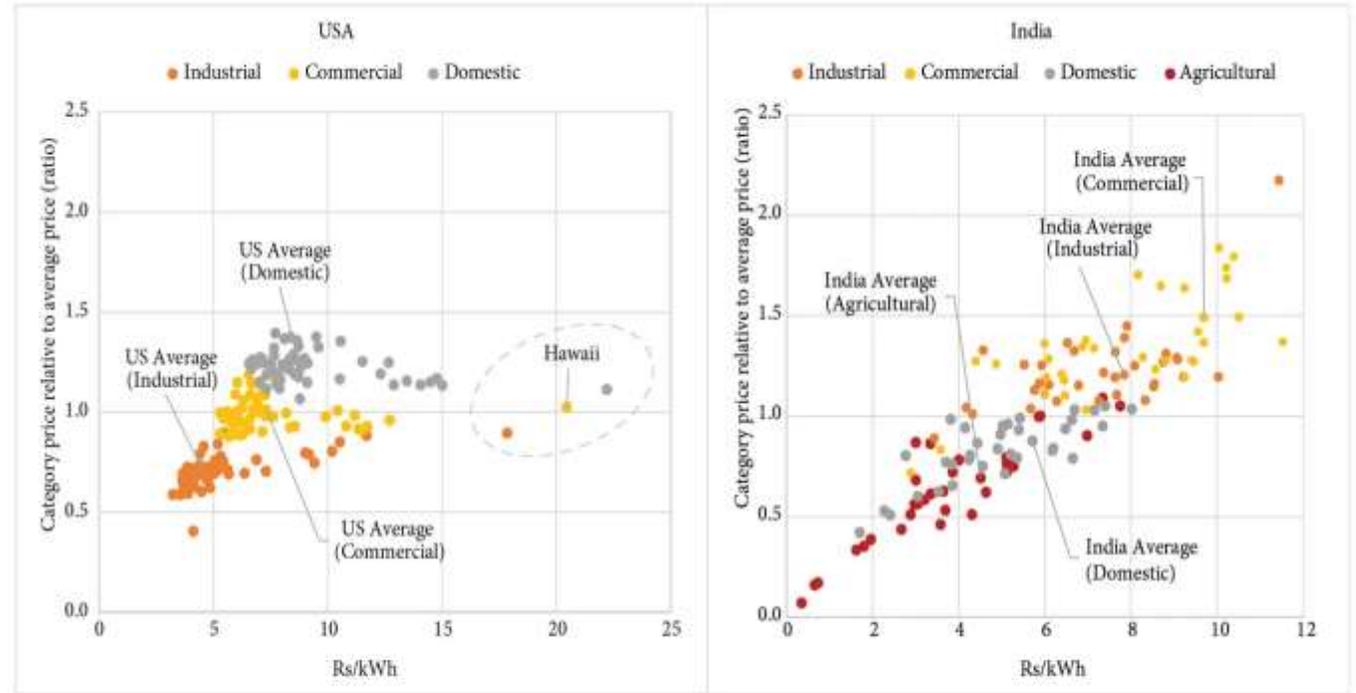
Opportunities and Global Trends in Electricity



Sources: See Appendix I.

Note:

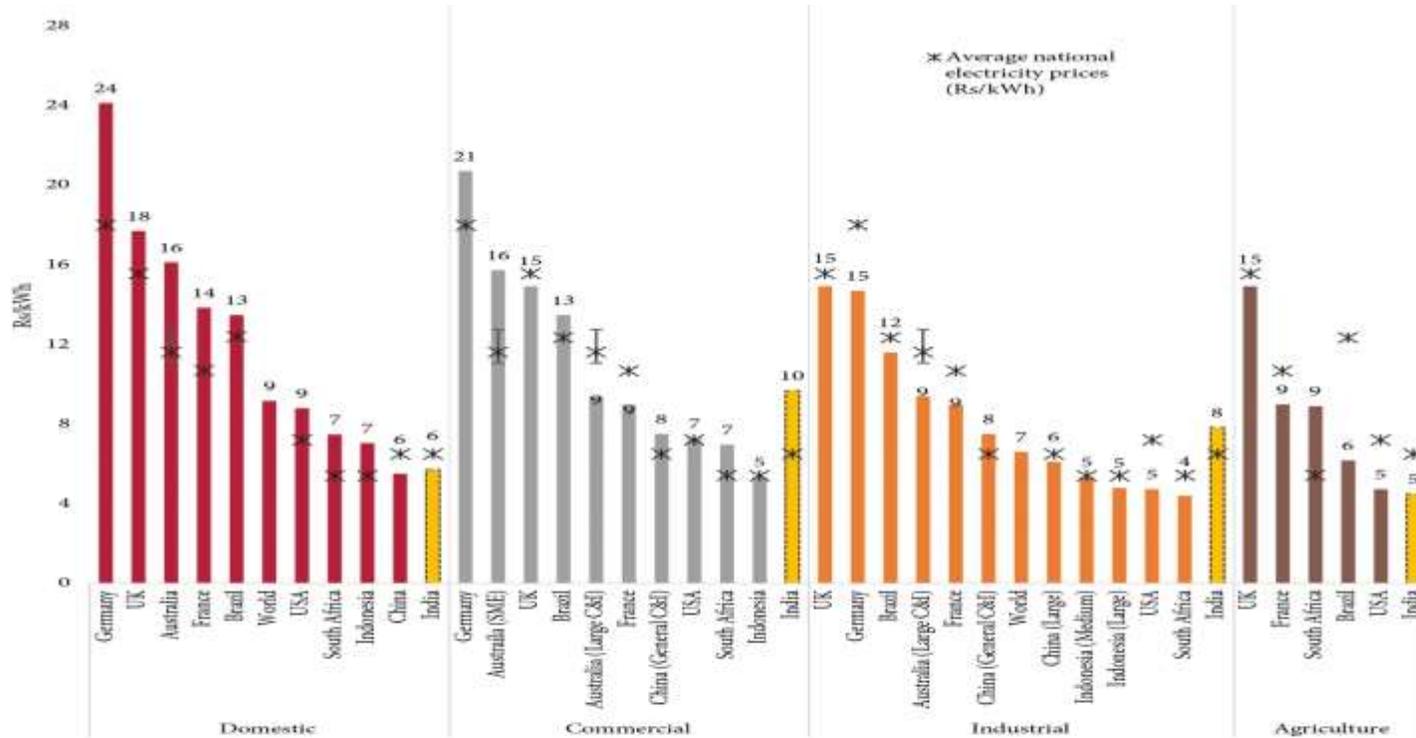
1. UK rates are for the 'Big 6' suppliers.
2. US rates are for private investor-owned utilities taken from the FERC.
3. Revenue from sales of power for India is on billed basis.



Source: EIA data and CSEP calculations.

Notes: The US data are for the 50 states, while for data for India are for 34 states and union territories.

Opportunities and Global Trends in Electricity contd...



Source: See Appendix I.

Note:

1. The star shows the average price for each country; Australia's has an error bar because data only show the prices for bulk consumers versus small (especially residential) consumers. We assume a mix of anywhere from 25%–50%.
2. South Africa's average prices reflect those who Eskom supplies directly. South Africa's domestic price also includes public lighting. Indonesia's prices are for non-subsidised consumers.
3. These are for FY2018–19 for India, and closest matching for other countries.

Even if Germany, UK, and US are expensive per unit electricity, they are commensurately high in quality of service and affordability. India's T&D losses (distinct from AT&C) are 20.6 %, worse than peers like Brazil and South Africa. In terms of affordability, India's household expenditure on electricity is 1.53% of total income, which is low only due to low levels of consumption, but consumption is only expected to grow. If household prices continue to stay artificially low, the burden on DisComs will only continue to increase, which highlights the urgency of the issue.

What do the next 10 years look like in **Industry**?

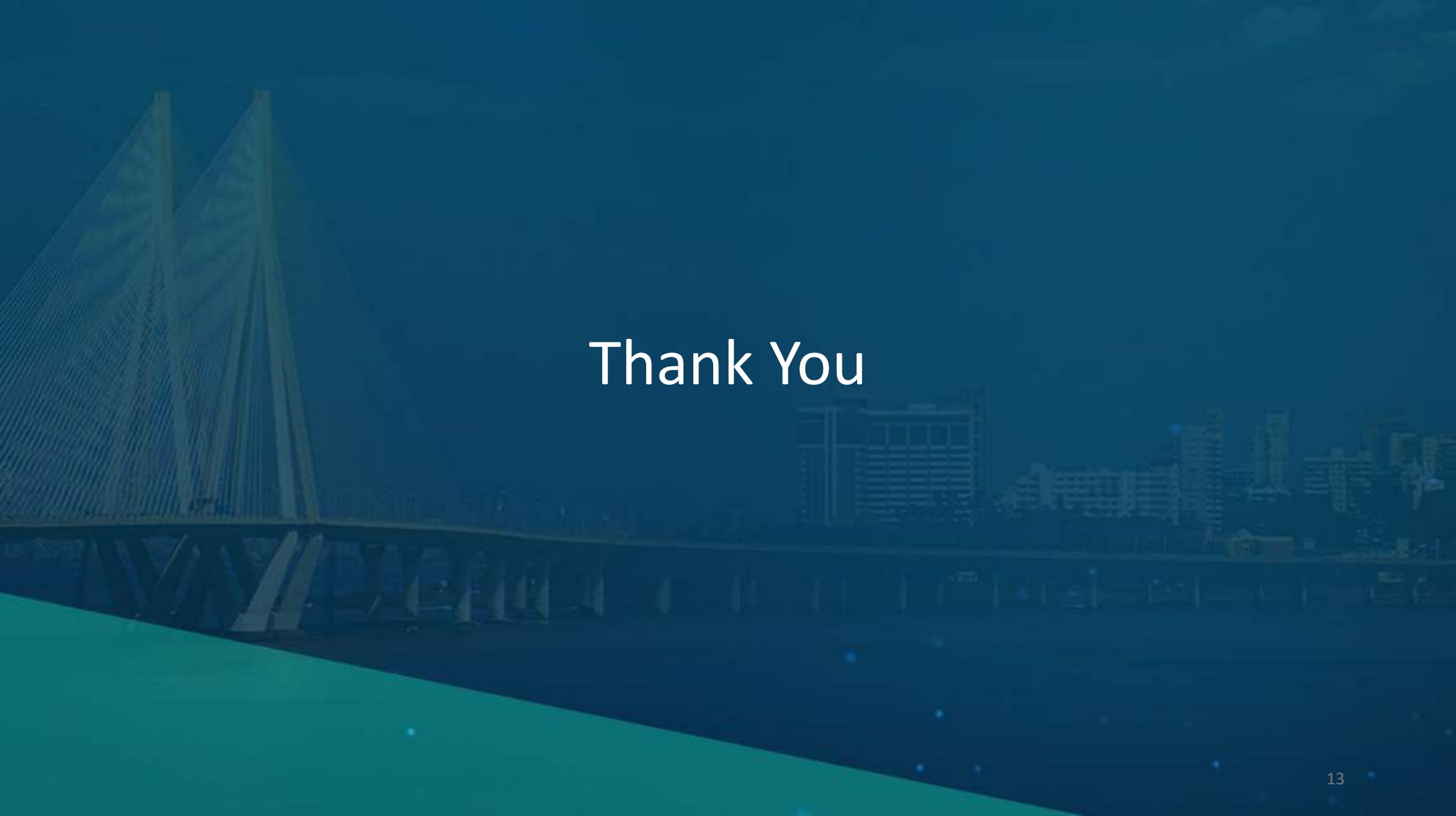
- Technology: Shift from Cleaner-Greener to abundantly available non intensive resources. Heating/Cooling technologies have an opportunity to reinvent to modular approach.
- Business models: E2E Utilities supply chain will generate new Unicorns, broaden Industry. The electricity financial/regulatory challenges will prompt portfolio diversification and consolidation across geographies.
- Public to Private Players: Utilities Supply chain gaining prominence - Transmission Grids, Local Dis-coms, Make and supply local fuel or energy (Hydrogen, Electricity).
- Efficiency Focus and Cost Competitive: Hybrid power models will restructure to transition to Utilities. The existing generators will have to evolve to be “Energy Companies” moving into Domestic (households) market disrupting price points and spoil for choices.
- Knowing the unknown: Newer challenges will come forth due to Climate, Geographical unrests, Tariff wars, Widening economic gaps adding focus on creating solutions and opportunities to address thereby disrupting, reformatting, recreating and innovations that will significantly increase value proposition.
- Chemicals, Pharma, Electronics will undergo disruptions as 90% of feedstock is coming from fossil origins. The remaining from biomass and microorganisms

What do the next 10 years look like in **Services**?

- Ratings: Will undergo tremendous consolidation as there are many platforms and innumerable services. Similar to Financial rating agencies in early 1980s.
- SaaS: Will increase and spoil enterprises with multiple choices, price of services will continue to reduce significantly. Niche and value platforms will emerge and make space in Industry.
- Partnerships: Will continue to reinvent with different permutations and synergies will be experimented by enterprises before the next set of standard working models get established.

What can we do?

- Scale brings opportunity – Look out for avenues to reduce your utility costs. The disruption in utilities will continue and increase at a larger scale
- Opportunity brings collaboration – The markets are flooded with companies trying to sell, to not miss out on opportunities do connect with peers and customers (B2B)
- Collaboration brings investment – Invest in better ROI technologies. Start small and increase
- Investment brings Growth



Thank You