



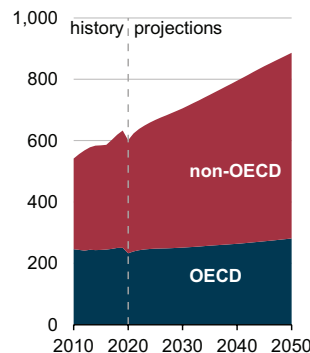
## Navigating the Future of Energy: The Growing Power Demand in Emerging Markets

Driven by rapid economic development, urbanization, and demographic growth, emerging markets are experiencing unprecedented increases in energy demand. The shift reflects both the opportunities and complexities of the energy transition amid a turbulent transition toward more sustainable energy systems. Among emerging markets, India stands out for its rapid pace of growth in energy consumption, and the country's pivotal role in shaping the future of global energy.

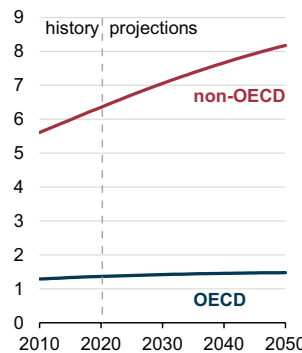
### Emerging Markets: Growing Contributors to Global Energy Trends

Low income and emerging market countries require more energy to meet the needs of their expanding cities and industries. Their accelerating economic growth drives higher consumption and investment in energy infrastructure. As a result, the rising energy needs of these emerging markets are becoming a significant force in global energy dynamics, surpassing energy consumption growth in more developed countries. According to the International Energy Agency (IEA), energy demand in countries that are not members of the Organisation for Economic Co-operation and Development (OECD) is projected to grow at an annual rate of 3-4% through the next decade compared to a more modest growth rate in OECD countries. This growth is driven by factors such as high population growth, increasing industrial activity, urbanization, and improvements in living standards.<sup>1</sup>

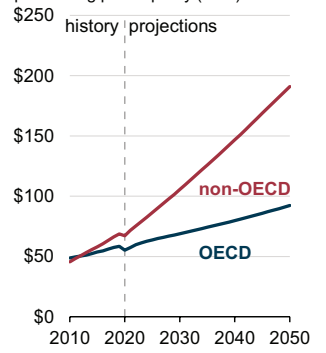
**World energy consumption**  
quadrillion British thermal units



**World population**  
billion people

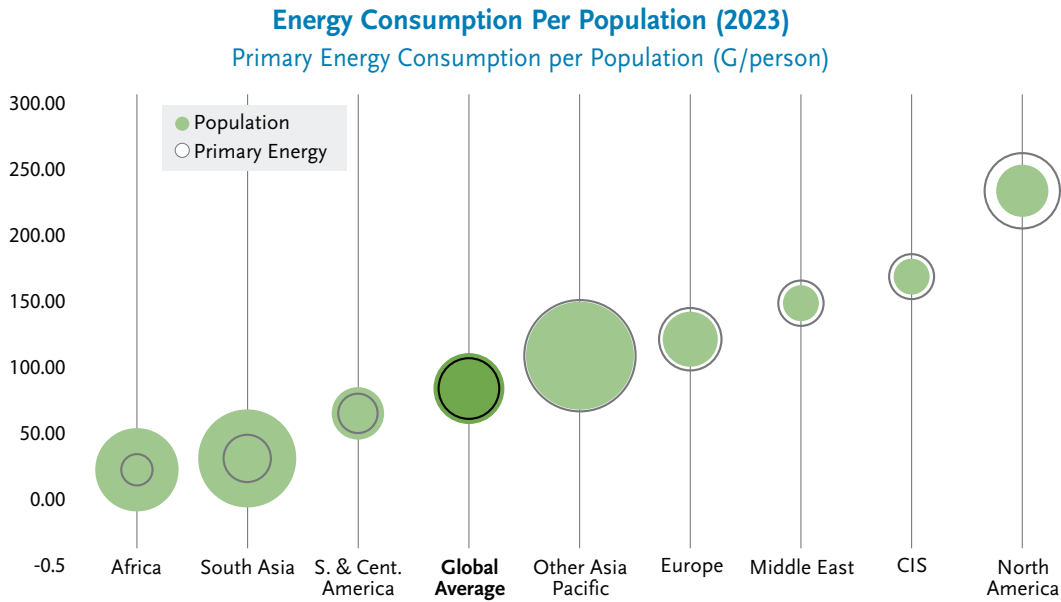


**World GDP**  
trillion 2015 dollars, purchasing power parity (PPP)



Source: U.S. Energy Information Administration, International Energy Agency

In 2023, energy consumption across the emerging world, for instance, accounted for 56% of total energy consumed and grew at twice the global average rate of 2%. The Asia Pacific region was responsible for 85% of the Global South’s demand (47% of global demand) where the economies of China, India, Indonesia, Japan, and South Korea dominated.

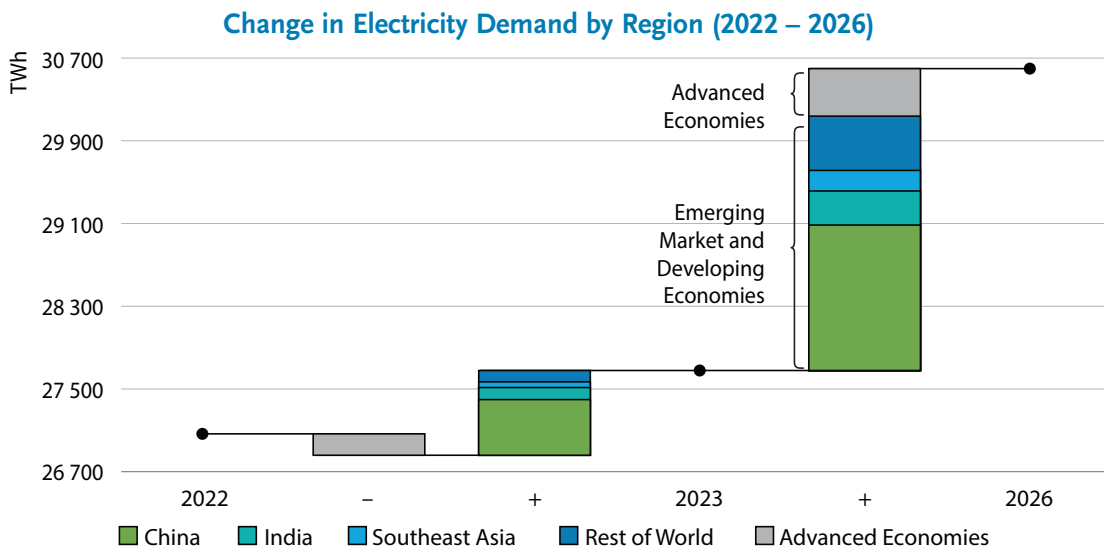


Source: Energy Institute – 2024 Statistical Review of World Energy

Despite accounting for less than 10% of the world’s energy consumption, South Asia and Africa have the potential for growth due to their large and expanding populations and historically low levels of energy access.<sup>2</sup> This scenario creates fertile ground for investment in energy infrastructure, renewable technologies, and innovative energy solutions.

### Electricity Demand: A Core Component of the Energy Shift

The rise in electricity consumption, especially in emerging markets, highlights the need for modernization of energy infrastructure. The IEA forecasts that up to 85% of additional electricity demand through 2026 will come from non-advanced economies, with China, India, and Southeast Asia leading this increase.



Source: International Energy Agency (IEA) – Electricity 2024

Modernizing electricity grids to handle increased demand and integrate higher shares of renewable energy is critical. Current grid infrastructure in many emerging markets is often outdated and unable to efficiently accommodate the growing influx of energy. Investments in grid modernization, including improvements in transmission and distribution systems, are essential to support this expanding demand and enhance grid reliability.

Transitioning to a more sustainable energy mix is crucial as it addresses environmental challenges like air pollution and greenhouse gas emissions, enhances economic growth by creating jobs, reduces reliance on costly imported fuels, and strengthens energy security. However, transitioning to a more sustainable energy mix presents several challenges. Many emerging markets still rely heavily on fossil fuels such as coal, oil, and natural gas. This reliance creates a lock-in effect, making it difficult to shift rapidly to renewable sources. The integration of variable renewable energy sources like solar and wind into existing grids poses technical and logistical challenges, requiring substantial investments in grid modernization and energy storage technologies.

**India: A Key Player in the Global Energy Transition**

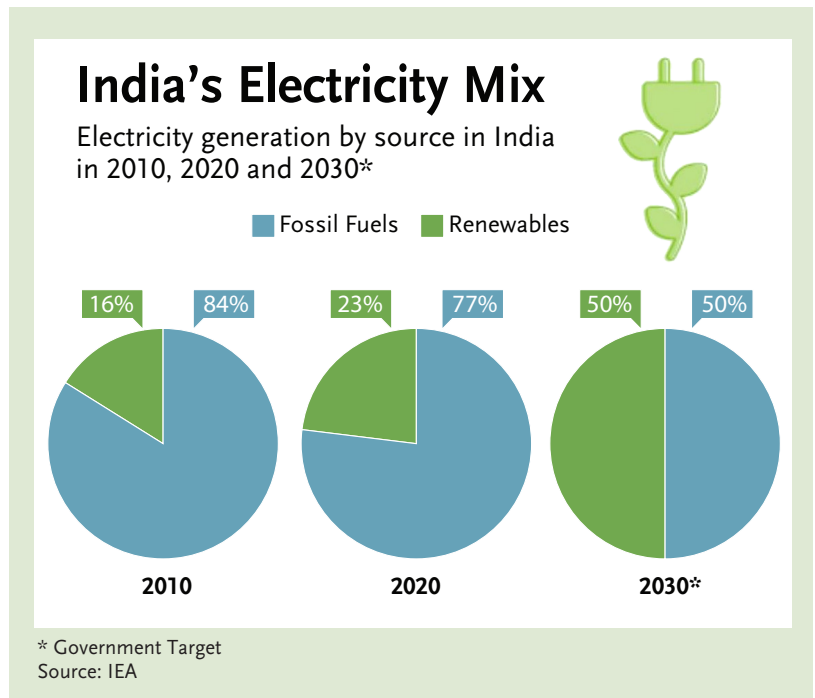
India stands out as a key player in this global energy transformation. As the world’s third-largest energy consumer after the United States and China, India is witnessing one of the most rapid increases in energy demand. This growth is underscored by recent data showing peak power demand reaching a record 250 GW in 2024. This surge is driven mainly by rising temperatures requiring increased use of air conditioning and the rapid digitalization and expansion of IT infrastructure which necessitates a reliable and continuous power supply.

The Indian government has set ambitious targets for its energy sector, aiming to achieve net zero emissions by 2070 and to derive 50% of its energy needs from renewable sources by 2030.<sup>3</sup> As of May 2024, India’s clean power capacity exceeded 200 GW, which is 40% of its 2030 target. This milestone highlights significant progress, but to meet its 2030 targets, India must double its pace of renewable energy uptake to about 17% per year. Its energy mix still relies disproportionately on coal, though several innate features underpin its transition to a cleaner grid.

India’s varied climate makes it an ideal candidate for renewable energy investments, particularly in solar and wind power. The country’s abundant sunlight and favorable wind patterns provide substantial opportunities for harnessing these resources, supporting a transition to cleaner energy.

**Challenges in Financing India’s Energy Transition**

The dual objectives of increasing grid capacity while transitioning to clean energy in India presents several challenges. Firstly, securing robust financing is crucial, often requiring involvement from reputable sponsors to effectively manage highly leveraged balance sheets. It is estimated that India needs about \$10 trillion by 2070 for its energy transition. Access to domestic financing becomes particularly critical, especially when international market access is closed. Additionally, consistent government policy is essential to provide a stable investment environment and delays in regulatory approvals can hinder progress. At the project level, developing and deploying advanced technologies for renewable energy, such as solar and wind, will require upgrading the existing grid infrastructure to handle intermittent renewable energy sources.



Execution risks escalate as projects grow more complex, such as with pumped storage solutions; and improving the creditworthiness of offtakers – state electricity distribution companies (discoms) have a history of overdue payables – remains a pressing issue. Addressing these challenges is key to successfully financing and implementing India’s energy growth and clean energy transition.

### Investments in India’s Energy Sector

India has achieved record levels of renewable energy investments, with \$14.5 billion invested in the 2021-22 financial year, marking a 125% increase from the previous year. As of June 2024, India’s installed renewable energy capacity exceeds 203.19 GW, including large hydro. The country ranks fourth globally in renewable power capacity additions, fourth in wind power capacity, and fifth in solar power capacity. Looking ahead, India aims to achieve 500 GW of non-fossil fuel-based energy by 2030. These investments have significantly boosted India’s renewable energy capacity, contributing to its goal of reducing carbon emissions and achieving a sustainable energy future.

India’s energy transition presents a myriad of investment opportunities. Key areas of interest include:

1. **Renewable Energy Projects:** Solar and wind energy projects offer significant potential due to their scalability and declining costs. India’s supportive government policies significantly bolster renewable energy investments. Subsidies for local manufacturers and trade barriers on imports from China support local renewable market development. Long-term Power Purchase Agreements (PPAs) with “must run” status ensure stable revenue streams for projects. The Late Payment Scheme (LPS) has improved collections from state discoms, addressing cashflow issues. These policies collectively create a favorable environment for renewable energy development and investment.
2. **Energy Storage Solutions:** As the share of intermittent renewable energy sources increases, investing in energy storage solutions becomes critical. Technologies such as lithium-ion batteries, pumped hydro storage, and advanced energy storage systems are essential for balancing supply and demand and ensuring grid stability. Consideration of raw material and component manufacturers serving the Indian market expands our investment universe and provides opportunities for diversification.
3. **Grid Modernization:** Upgrading India’s electric grid infrastructure is a major investment opportunity. Modernizing the grid to handle increased renewable energy capacity, improve reliability, and reduce transmission losses is crucial for supporting the country’s growing energy needs. Aside from the few private discoms, investment opportunities are available in the transmission and distribution equipment and construction and engineering industries.
4. **Energy Efficiency Technologies:** Investing in technologies that enhance energy efficiency across various sectors, including industrial processes, buildings, and transportation, can yield high returns. Innovations such as smart grids, energy management systems, and efficient lighting solutions offer promising investment avenues.
5. **Electric Vehicles (EVs):** The transition to electric mobility is gaining momentum in India, driven by government policies, and increasing consumer demand. Investing in EV infrastructure, including charging stations and battery manufacturing, aligns with the broader goals of reducing emissions and improving energy efficiency. Further, India has fostered a growing EV ecosystem, particularly with two- and three-wheel vehicles. Growth of EVs in India will be driven by domestic production rather than relying on imports.

The growing energy demand in emerging markets, particularly in India, reflects a complex interplay of economic growth and evolving energy needs. While India’s energy transition presents both significant challenges and opportunities, the focus remains on addressing infrastructure demands, diversifying energy sources, and managing the impacts of increased consumption. Despite regulatory, technological, and logistical challenges, investment opportunities across the energy ecosystem within and serving India are growing. Investors and companies alike will need to navigate complicated dynamics carefully as they contribute to shaping a sustainable global energy future. ■



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Ms. Kurland is an Analyst with the Sustainable Investment Group where she leads the development and implementation of TCW's sustainable investment research framework. Prior to joining TCW, she was a Project Manager of Portfolio Monitoring at Malk Partners, a boutique consultancy that advises private equity and debt clients on ESG due diligence and portfolio management. Prior to Malk Partners, she was an Associate in the CEO's office at the Global Impact Investing Network, where she developed the organization's strategy to grow the impact investing industry. She earned a BA in Political Science, French, and Economics from New York University and a Master's of International Business with concentrations in International Finance and Development Economics from the Fletcher School at Tufts University. Ms. Kurland holds the Fundamentals of Sustainability Accounting (FSA) credential from the IFRS Foundation.

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## Footnote References

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- 1 World Energy Outlook 2023. [Link](#)
- 2 Energy Institute – 2024 Statistical Review of World Energy. [Link](#)
- 3 India Ministry of Power. [Link](#) & [Link](#)

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