

# India's renewable energy revolution: A multi-trillion-dollar economic transformation ahead

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Our nation, India, is currently standing at a crucial junction where the potential of renewable energy promises a transformative impact on its economy. Mirroring the success of China in leveraging clean energy to drive economic growth, India’s energy transition could be one of the largest economic opportunities in recent decades, estimated to be a multi-trillion-dollar sector.

India’s commitment to clean energy is rapidly becoming evident in significant investments across renewables, grid infrastructure, energy storage, and electric mobility. Let’s delve into how this transformation will shape India's economy over the next decade.

## Investment and Growth

India has witnessed exponential growth in electricity demand, surpassing major global economies. With a projected \$250 billion annual investment, akin to China, India is set to significantly boost its clean energy sector. By 2030, it aims to commission 500 GW of renewable energy capacity, contributing over 40% of its incremental electricity generation. This ambitious target places India at the forefront of the clean energy transition, offering vast opportunities for investment and economic growth.

In China, clean energy investments rose 40% year-on-year to \$890 billion in 2023, fueling economic growth despite a sluggish real estate sector. India is poised to follow this trend, with clean energy investments becoming a critical driver of its GDP growth. If India aligns itself similarly, the sector could add 10 percent to the country’s GDP while significantly influencing the industrial growth, job creation, and energy security.

## Sector Performance and Job Creation

The clean energy sector has been a major driver of economic growth globally, creating millions of jobs and attracting substantial investments. India, with its massive workforce and burgeoning energy needs, is expected to witness a similar trend. It is forecasted that by the year 2030, over 1.3 million jobs would be created in the renewable energy space. It will be driven by growth in solar, wind, and bioenergy. Additionally, investments in grid infrastructure, energy storage, and electric vehicles (EVs) will further amplify job creation.

## Industrial Growth and Energy Transition

India’s journey toward a cleaner energy future is marked by significant investments in power transmission, renewables, and EVs. Over the next decade, the country needs to double its installed power capacity to meet rising demand. This growth will be facilitated by a robust expansion in grid infrastructure, valued at \$30 billion by 2030. India has already added 180,000 kilometers of transmission lines in the past decade, and ongoing government prioritization of grid expansion will support rapid renewable energy deployment.

The renewable energy sector is transitioning India’s energy mix, currently dominated by coal. The country has installed 67 GW of solar capacity and expects to add another 13 GW this year. Wind power capacity, the fourth-largest globally, is set to grow by 60% to 71 GW by 2030. Renewable energy will not only alleviate environmental concerns but also enhance India’s energy security and trade balances by reducing its net energy import bill, currently about 3% of GDP.

## Electric Transportation and Clean Energy Innovation

India's electric transportation sector is on the cusp of a significant transformation. The country’s burgeoning two-wheeler market is shifting towards electric vehicles, with penetration growing from 1.2% in 2021 to 5.2% currently. Government incentives, rising incomes, and expanding charging infrastructure will continue to fuel this growth. Moreover, as battery storage technology becomes more affordable, akin to the solar industry a decade ago, India will witness a surge in energy storage projects.

## Conclusion

India's clean energy transformation offers a compelling opportunity for investment and economic growth, potentially making the sector one of the largest economic opportunities in the past few decades. With ambitious renewable targets, significant investments in grid infrastructure, and a burgeoning electric transportation sector, India is set to reshape its economy while addressing pressing environmental challenges. The government, private sector, and Indian population are collectively driving this transformation, positioning the country for a sustainable and prosperous future.