

An Assessment of India's Energy Choices

Foreword

India's economy is growing rapidly, and so is its energy demand. The IEA-IEO (2015) estimates that India's aggregate energy consumption will more than double by 2040. The Government of India is committed to achieving its target of 175 GW of renewable energy in India's energy mix but has also recognized that renewable energy may not have a level playing field with fossil-fuel based energy, and there could be challenges to achieving the RE target.

The Ministry of New and Renewable Energy (MNRE) requested Shakti Sustainable Energy Foundation to provide well-researched inputs for "developing a framework that assesses the various direct, indirect, and external costs and benefits of all energy resources". In parallel, MNRE also commissioned a study to estimate the economic rate of return for various renewable energy technologies. These efforts attempt to highlight the significance of renewable energy for our future energy mix.

Based on MNRE's request, we supported 'An Assessment of India's Energy Choices'. This assessment, published as series of four reports, has been led by Climate Policy Initiative (CPI), Indian School of Business (ISB), Dr. Meeta Keswani Mehra from Jawaharlal Nehru University (JNU), and Dr. Saptarshi Mukherjee from Indian Institute of Technology (IIT Delhi). The assessment examines the paths to renewable energy penetration in India along different economic dimensions including the social costs, macroeconomic impacts, environmental impacts, financial risk, and flexibility considerations.

Most notably, the series finds that Indian wind and solar energy are now outpacing fossil fuel energy as investment opportunities, providing, on an average, 12% higher annual returns, 20% lower annual volatility, and 61% higher risk-adjusted returns than their conventional fuel based (coal and natural gas) counterparts. Investors have begun to view renewable energy as less risky than fossil fuel-based energy.

From the macroeconomic perspective, the assessment finds that renewable energy growth and economic growth in India are closely linked. Under realistic renewable energy deployment predictions out to 2042, India could add between 2 million and 4.5 million jobs in wind and solar energy sectors.

The assessment clearly shows that India's path to 175 GW of renewable energy, with the right policies guiding that path, will not only expand access to energy for Indian citizens, but will also be a boon to investors and India's economy.

We hope this series proves to be a useful resource in guiding India to its cleaner and more sustainable energy future.



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