

# Energy consumption and emissions in the CUIRJG countries and role of PAT in India

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## Abstract

Global warming and a rise in carbon dioxide emissions has caused countries to revisit their dependence on fossil fuels. In the last two decades, carbon dioxide emissions have been rising, most of which comes from the consumption of fossil fuels. In order to ensure that countries take steps to reverse the alarming trend, the Paris Agreement came into effect in 2016. Out of all the countries that ratified the Agreement, the share of China, USA, India, Russian Federation, Japan and Germany or the CUIRJG countries has been the highest in total fossil fuel consumption and emissions. The paper evaluates the trends energy consumption, energy intensity, carbon dioxide emissions and rate of growth of carbon dioxide emissions in these six countries. Empirical results show that growth of carbon dioxide emissions has been declining, and a rise in energy intensity has led to a fall in growth of carbon dioxide emissions at an increasing rate. Specifically for the Indian case, the focus is on the Perform-Achieve-Trade policy whose objective is to promote energy efficiency in high energy consuming industries and sectors through market based industries.

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## 1. Introduction

Global warming, exacerbated by carbon dioxide (CO<sub>2</sub>) emissions has raised concerns about how countries meet their development goals and how steps need to be taken to move towards a more energy efficient world. It is of utmost importance because the world is still primarily dependent on fossil fuels to meet its energy requirements. Data shows that between the years 2000 to 2015, globally fossil fuel consumption as a percentage of total energy remained more than 80% (World Development Indicators, World Bank), where fossil fuels comprise of coal, oil, petroleum and natural gas products. Carbon dioxide emissions have also registered an increasing trend in this time period, though there are differences depending on the type of fuel considered. Emissions from solid fuel has been the highest, where solid fuel refers to coal as an energy source. This is followed by emissions from liquid fuel, where liquid fuel comprises of petroleum derived fuels. Finally, emissions from gaseous fuels are the lowest and has remained almost constant, where gaseous fuels refer to natural gas as an energy source.

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