

ASSESSING CLIMATE PROTECTION PERFORMANCE:
G20 COUNTRY PROFILE

India

This Country Profile assesses India's past and present actions to help mitigate climate change, and its Intended Nationally Determined Contribution (INDC) towards future global action. The profile summarises the respective findings of the Climate Change Performance Index (CCPI)ⁱ and Climate Action Tracker (CAT)ⁱⁱ.



COUNTRY CHARACTERISTICS

KEY INDICATORS*	INDIA	G20
Population [million]	1,236	4,587
GDP per capita (PPP) [US\$]	4,502	14,505
Share of global GHG emissions**	5.7%	74.2%
Share of global GDP	6.7%	80.3%
Share of global population	17.6%	64.7%
GHG per capita [t CO ₂ e/cap]**	1.9	7.2
Energy intensity of the economy (TPES/GDP [MJ/US\$])	6.0	6.6
Carbon intensity of energy supply (CO ₂ /TPES [t CO ₂ /TJ])	59.2	63.1
Carbon intensity of the economy (CO ₂ /GDP [kg CO ₂ /US\$])	0.35	0.42
Share of fossil fuels in primary energy supply	73.6%	83.4%
Share of coal in electricity production	71.1%	35.7%
Share of renewables in primary energy supply	25.2%	11.1%

*year 2012 (unless stated otherwise)

**year 2010

GDP = gross domestic product

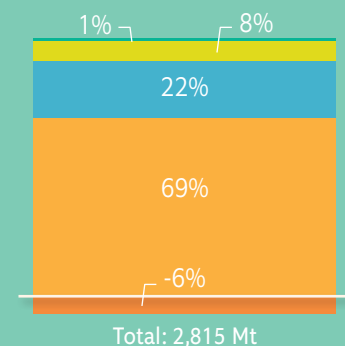
GHG = greenhouse gas emissions (net emissions including sinks from agriculture, forestry, and other land uses)

TPES = total primary energy supply

PPP = purchasing power parity in prices of 2005

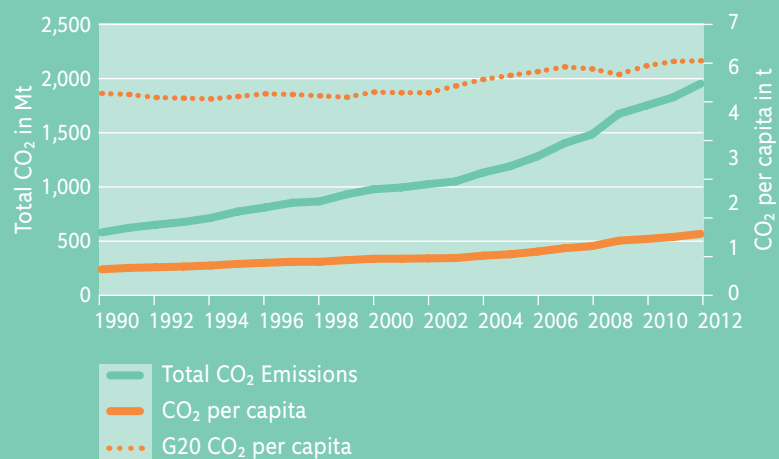
EMISSIONS AND EMISSIONS TRENDS

COMPOSITION OF GHG – INDIA 2010



■ F-Gases
■ N₂O
■ CH₄
■ CO₂ incl. LULUCF*
■ CO₂ from LULUCF**
* from Energy, Industry & other

ENERGY-RELATED CO₂-EMISSIONS – INDIA



Source: IEA 2014; **CAT 2015

Source: IEA 2014

In India, carbon dioxide (CO₂) emissions account for about two thirds of total greenhouse gas (GHG) emissions, while methane (CH₄) accounts for about one fifth. Energy-related CO₂ emissions more than doubled between 1990 and 2012. The country has

very low per capita emissions compared with other G20 countries, and therefore has a good ranking under the CCPI evaluation. The rapid growth in emissions contributes towards a strong negative trend.

CCPI EVALUATION OF INDIA'S EMISSIONS



Source: CCPI 2015

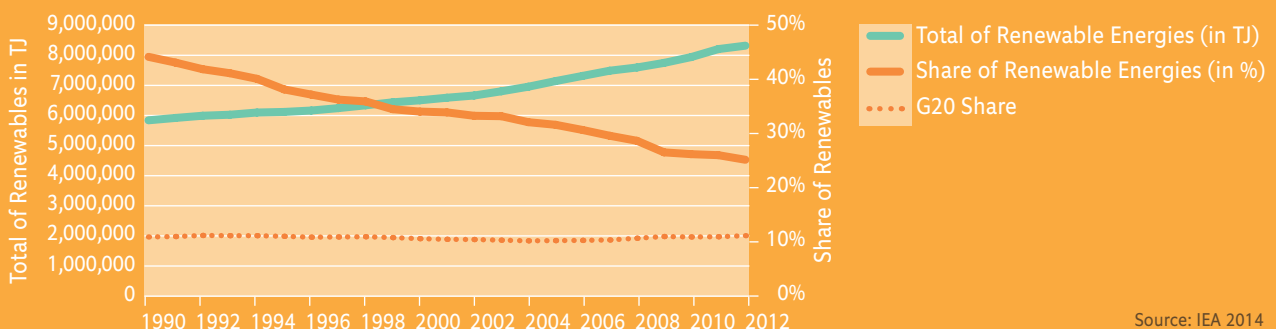
DECARBONISATION

Decarbonisation of the global economy will be a crucial element for staying below the 2°C threshold. Two important steps towards achieving such decar-

bonisation are a shift from fossil fuels to renewable energy sources, and a reduction in carbon and energy intensityⁱⁱⁱ.

RENEWABLE ENERGY

RENEWABLE ENERGY IN INDIA



Source: IEA 2014

India's absolute production of renewable energy is rising. It has a high share in the country's total energy supply, at more than 10% above the G20 average. This share is falling, however, while fossil energy

sources are growing. The CCPI ranks India's level of renewable energy as good, reflecting the high share. The rising absolute renewable energy production contributes a positive trend.

CCPI EVALUATION OF INDIA'S RENEWABLE ENERGY



Source: CCPI 2015

ENERGY- AND CARBON INTENSITY

The measurement of carbon and energy intensity uses macroeconomic data. A country's progress towards decarbonisation is indicated by decoupling of its GDP growth from growth in carbon and energy

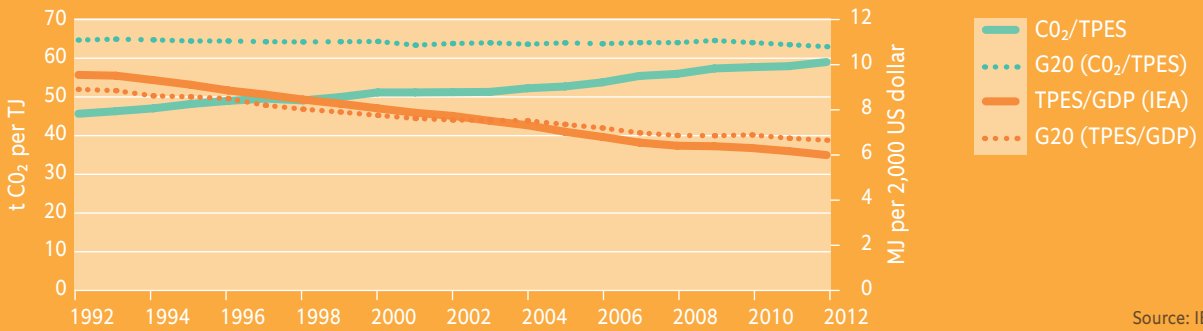
intensity. The latter are measured as CO₂ emissions per unit of Primary Energy Supply (CO₂/TPES) and Primary Energy Supply per unit of GDP (TPES/GDP) respectively.

i Climate Change Performance Index is jointly published by Germanwatch and Climate Action Network Europe, a coalition of over 120 member organizations. The Index is 80% based on objective indicators of emissions trend and level, renewable energies and energy efficiency and 20% on national and international climate policy assessments by more than 300 experts from the respective countries. www.germanwatch.org/en/ccpi

ii Climate Action Tracker is an independent scientific analysis produced by four research organizations: Climate Analytics, Ecofys, the Potsdam Institute for Climate Impact Studies and the NewClimate Institute. www.climateactiontracker.org

iii Another indicator is energy efficiency. However, energy efficiency is complex to measure, requiring a sector by sector analysis, where comparable data sources across G20 countries are not available at present.

ENERGY- AND CARBON INTENSITY IN INDIA



Source: IEA 2014

India's carbon intensity of energy supply (CO₂/TPES) is increasing, and the energy intensity of its economy (TPES/GDP) falling. Both indicators and trends are

close to the G20 average. The CCPI evaluation of India's level of energy and carbon intensity is relatively poor, with no clear trend.

CCPI EVALUATION OF INDIA'S ENERGY AND CARBON INTENSITY



Source: CCPI 2015

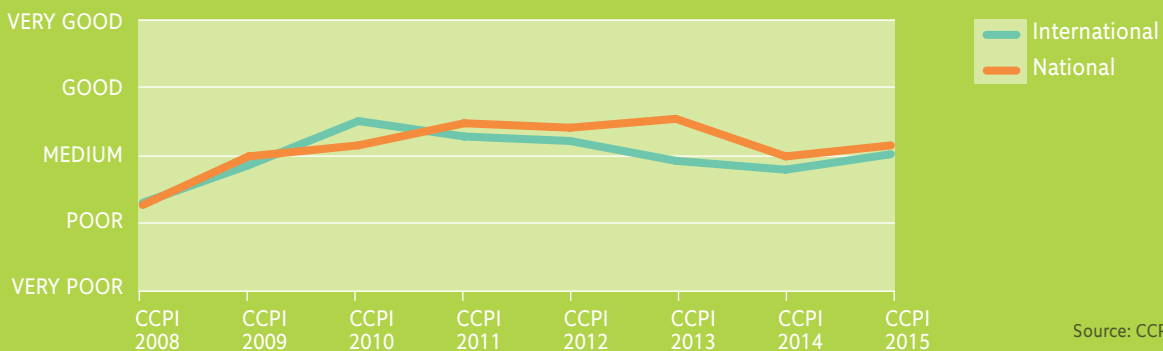
CLIMATE POLICY PERFORMANCE

EVALUATION OF RECENT CLIMATE POLICY

The CCPI evaluates a country's performance in national and international climate policy through feedback from national energy and climate experts.

The experts assess the country's performance in international negotiations, national policy making and in the implementation of climate policies.

INDIA'S CLIMATE POLICY



Source: CCPI 2008-2015

Indian experts acknowledge the country's ability to reach its domestic and international climate policy targets. Some note that the targets could be more

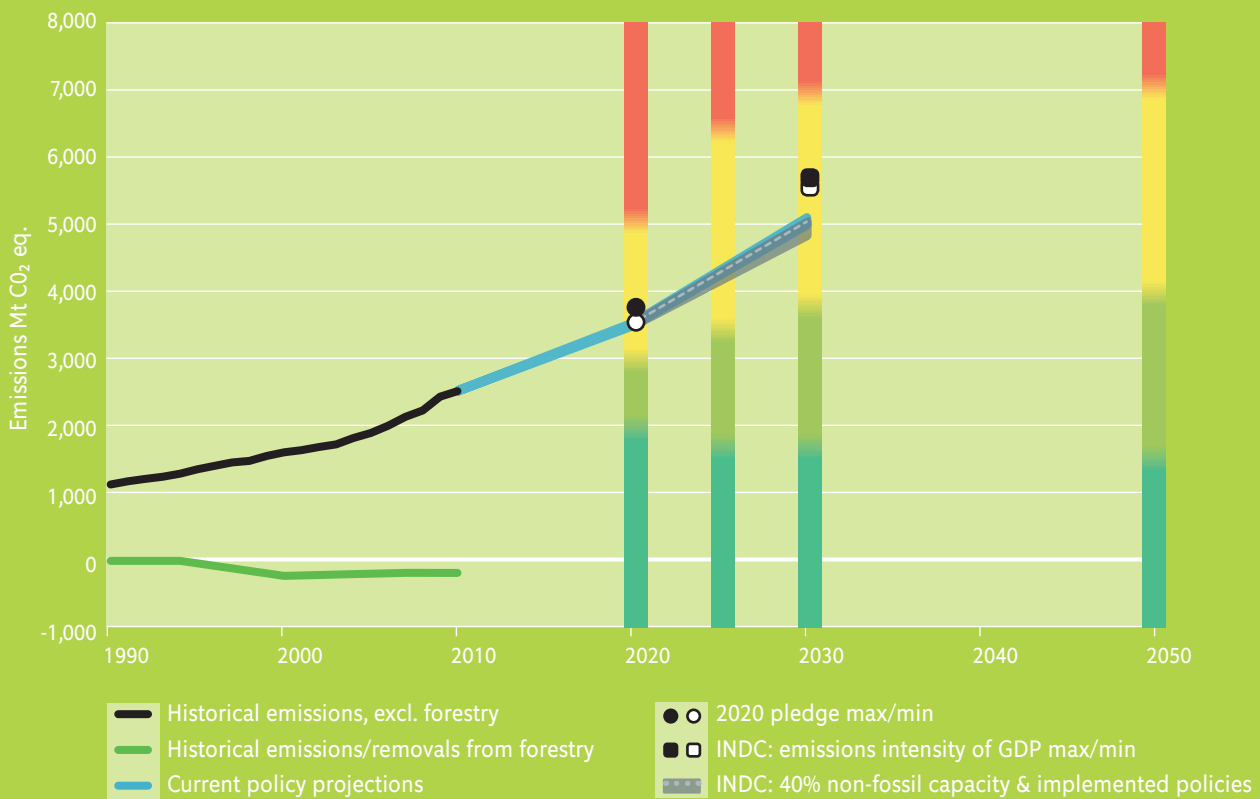
ambitious. Their overall evaluation of India's climate policy performance is good.

CCPI EVALUATION OF INDIA'S CLIMATE POLICY



Source: CCPI 2015

COMPATIBILITY OF NATIONAL CLIMATE TARGETS WITH 2°C



Source: © www.climateactiontracker.org/Climate Analytics/Ecofys/ NewClimate/PIK

India's Intended Nationally Determined Contribution, submitted 1 October 2015, (INDC) includes several targets. First, the INDC aims to lower the emissions intensity of GDP by 33–35% by 2030 below 2005 levels. That compares with an existing 2020 pledge to cut the emissions intensity of GDP by 20–25% by 2020, also below 2005 levels. Second, India's INDC aims to increase the share of non fossil fuels in installed power generating capacity, to 40% in 2030. That is equivalent to 26–30% of electricity generation in 2030. Third, the INDC aims to create by 2030 an additional, cumulative carbon sink of 2.5–3 billion tonnes of carbon dioxide equivalent, by increasing national forest and tree cover.

CAT rates the Indian INDC as "medium", meaning that their INDC is only consistent with limiting warming below 2°C, if other countries would make a comparably greater effort and much deeper reductions.

With currently implemented policies, including a target to install some 175 GW of renewable power generating capacity by 2022, CAT projects the share of non-fossil fuels in power generation capacity will already reach 36% in 2030, corresponding to a 24% share of electricity generation. Depending on the way India plans to achieve its 40% non-fossil target (whether through renewable energy or nuclear power, or a combination of both), it is estimated that this would result in emissions savings of 58–155 Mt CO₂e, in 2030, or 1–3% below current policy projections. Achieving this in 2030 would see India exceed its INDC intensity target by a wide margin, at 41–44% below 2005 levels. If the non-fossil target were dominant in the INDC implementation, therefore, absolute emissions would be lower, but the target would still be rated "medium".

CAT EVALUATION OF INDIA'S INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDC)

