

ASSESSING CLIMATE PROTECTION PERFORMANCE:  
G20 COUNTRY PROFILE

# Turkey

This Country Profile assesses Turkey'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)<sup>i</sup> and Climate Action Tracker (CAT)<sup>ii</sup>.



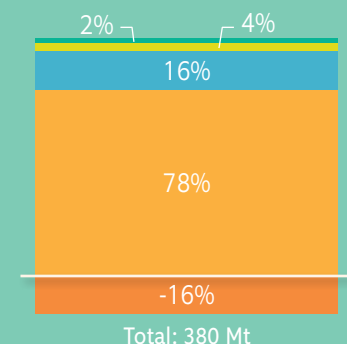
## COUNTRY CHARACTERISTICS

| KEY INDICATORS*   | TURKEY | G20    |
|---|--------|--------|
| Population [million]  | 74     | 4,587  |
| GDP per capita (PPP) [US\$]   | 13,557 | 14,505 |
| Share of global GHG emissions   | 0.8%   | 74.2%  |
| Share of global GDP   | 1.2%   | 80.3%  |
| Share of global population  | 1.1%   | 64.7%  |
| GHG per capita [t CO <sub>2</sub> e/cap]  | 5.1    | 7.2    |
| Energy intensity of the economy (TPES/GDP [MJ/US\$])                              | 4.8    | 6.6    |
| Carbon intensity of energy supply (CO <sub>2</sub> /TPES [t CO <sub>2</sub> /TJ]) | 61.8   | 63.1   |
| Carbon intensity of the economy (CO <sub>2</sub> /GDP [kg CO <sub>2</sub> /US\$]) | 0.3    | 0.42   |
| Share of fossil fuels in primary energy supply                                    | 89.4%  | 83.4%  |
| Share of coal in electricity production   | 28.4%  | 35.7%  |
| Share of renewables in primary energy supply                                      | 10.4%  | 11.1%  |

\*year 2012 (unless stated otherwise)  
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

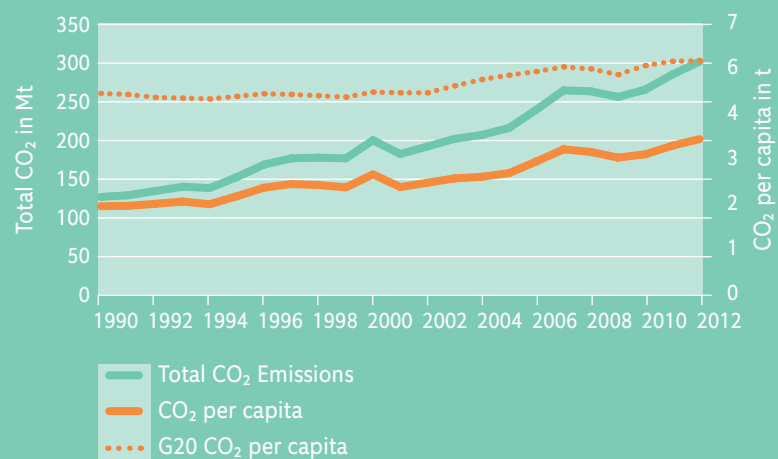
COMPOSITION OF GHG – TURKEY 2012



■ F-Gases  
■ N<sub>2</sub>O\*\*  
■ CH<sub>4</sub>\*\*  
■ CO<sub>2</sub>\*\*  
■ CO<sub>2</sub> from LULUCF\*  
 \* from Energy & Industry  
 \*\* including LULUCF

Source: UNFCCC 2015

ENERGY-RELATED CO<sub>2</sub>-EMISSIONS – TURKEY



Source: IEA 2014

Carbon dioxide (CO<sub>2</sub>) accounts for some 78% of all greenhouse gas emissions. Turkey has negative emissions from the land use and forest sector. Energy-related CO<sub>2</sub> emissions have increased, but per capita

emissions are still below the G20 average. The country's emissions level is rated by the CCPI as good in comparison with other G20 countries, with a negative trend.

#### CCPI EVALUATION OF TURKEY'S EMISSIONS



Source: CCPI 2015

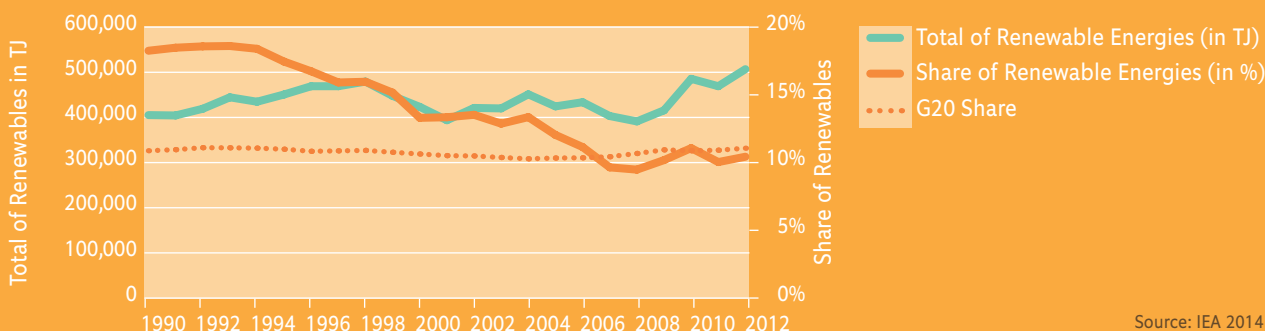
## DECARBONISATION

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 intensity<sup>iii</sup>.

## RENEWABLE ENERGY

### RENEWABLE ENERGY IN TURKEY



Source: IEA 2014

In the past five years, Turkey has reversed an earlier trend of stagnating absolute renewable energy production and a falling share in total energy supply.

Both indicators are now rising. The CCPI ranks Turkey's renewable energy as medium with a positive trend.

#### CCPI EVALUATION OF TURKEY'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

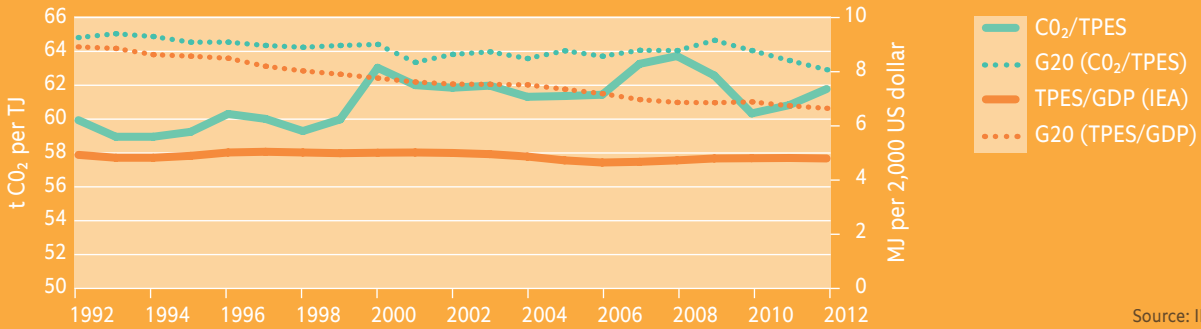
intensity. The latter are measured as CO<sub>2</sub> emissions per unit of Primary Energy Supply (CO<sub>2</sub>/TPES) and Primary Energy Supply per unit of GDP (TPES/GDP) respectively.

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](http://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](http://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 TURKEY



Source: IEA 2014

The carbon intensity of Turkey's energy supply (CO<sub>2</sub>/TPES) is slowly increasing but still below G20 average. The energy intensity of the country's economy (TPES/GDP) is unchanged, and below the G20 aver-

age. The level of energy and carbon intensity is rated as poor by the CCPI. The indicators do not show a clear trend.

### CCPI EVALUATION OF TURKEY'S ENERGY AND CARBON INTENSITY



Source: CCPI 2015

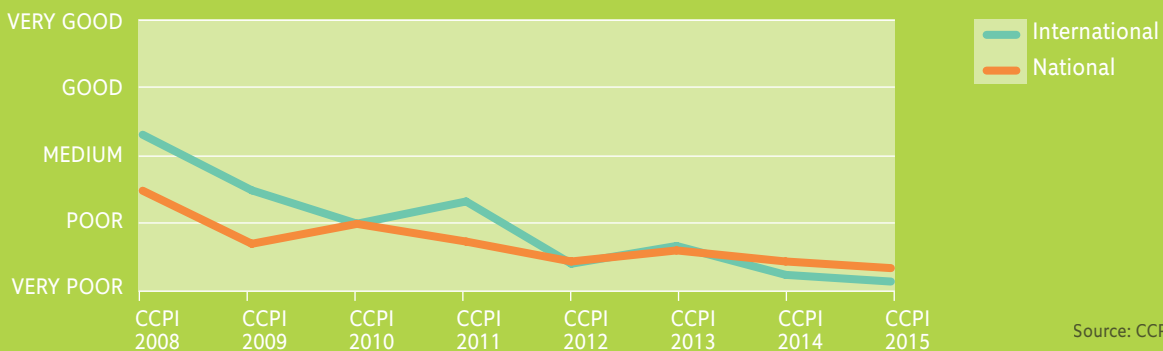
## CLIMATE POLICY PERFORMANCE

### 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.

#### TURKEY'S CLIMATE POLICY



Source: CCPI 2008-2015

Turkey's climate policy performance has deteriorated, both nationally and internationally from medium to very poor, in the CCPI ranking. Country experts criticise very poor implementation of exist-

ing policies; promotion of coal-fired power plants; and an unsupportive or even destructive role in international negotiations.

### CCPI EVALUATION OF TURKEY'S CLIMATE POLICY



Source: CCPI 2015

## COMPATIBILITY OF NATIONAL CLIMATE TARGETS WITH 2°C



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

Turkey submitted its Intended National Determined Contribution (INDC) on 30 September 2015. The INDC included a target to reduce net greenhouse gas (GHG) emissions, including Land Use, Land Use Change and Forestry (LULUCF), by up to 21% below business as usual (BAU) levels in 2030. Excluding LULUCF emissions, this target is equivalent to a 389% increase in GHG emissions over 1990 levels, or a 110% increase over 2012 levels. By comparison, under Turkey's BAU, emissions are expected to increase by 512% over 1990 levels, or 162% over 2012 levels. CAT rates this target "inadequate", since it is not in line with interpretations of a "fair" approach to reach a 2°C pathway. To make a fair contribution to keeping global average warming below 2°C, Turkey would need to double, or even triple, its post-2020 target, in terms of its percentage reduction in net GHG emissions below BAU levels in 2030.

According to CAT analysis, Turkey's current policies can already achieve around a third of the reductions proposed INDC. If the INDC's energy sector pledges were implemented, Turkey would achieve more than two thirds of its INDC target. The lion's share of emissions abatement in Turkey in 2030 depends on its capability to fully exploit its hydro potential, which on its own can achieve more than a third of the reductions required in the INDC target.

CAT assessment shows that Turkey has both to boost its ambition to limit global warming, and set out a plan with detailed measures to achieve its INDC target in 2030.

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

