

ASSESSING CLIMATE PROTECTION PERFORMANCE:  
G20 COUNTRY PROFILE

# Germany

This Country Profile assesses Germany'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>.



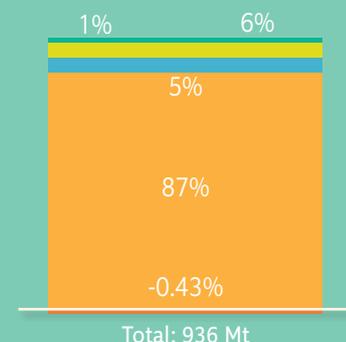
## COUNTRY CHARACTERISTICS

KEY INDICATORS*	GERMANY	G20
Population [million]	81	4,587
GDP per capita (PPP) [US\$]	34,806	14,505
Share of global GHG emissions	1.9%	74.2%
Share of global GDP	3.4%	80.3%
Share of global population	1.2%	64.7%
GHG per capita [t CO <sub>2</sub> e/cap]	11.6	7.2
Energy intensity of the economy (TPES/GDP [MJ/US\$])	4.7	6.6
Carbon intensity of energy supply (CO <sub>2</sub> /TPES [t CO <sub>2</sub> /TJ])	57.7	63.1
Carbon intensity of the economy (CO <sub>2</sub> /GDP [kg CO <sub>2</sub> /US\$])	0.26	0.42
Share of fossil fuels in primary energy supply	80.4%	83.4%
Share of coal in electricity production	46.1%	35.7%
Share of renewables in primary energy supply	10.6%	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

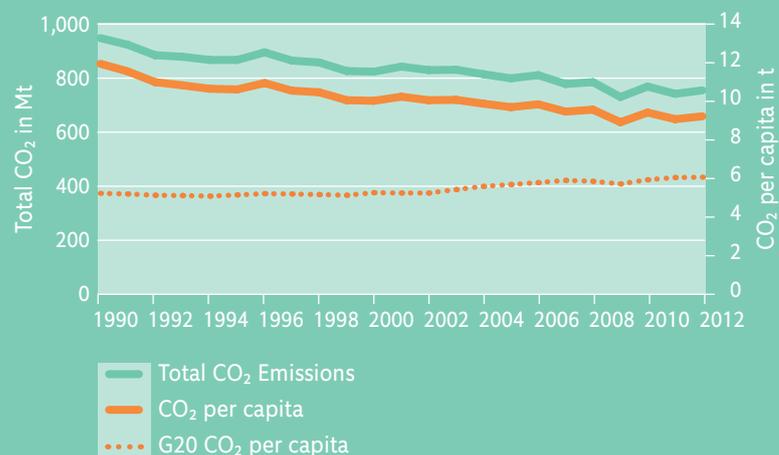
COMPOSITION OF GHG – GERMANY 2012



■ 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 – GERMANY



Source: IEA 2014

Carbon dioxide (CO<sub>2</sub>) accounts for some 87% of Germany's overall GHG emissions; emissions from land use and deforestation do not play a role. Germany's electricity sector is relatively carbon-intensive, accounting for 46% of GHG emissions, with industrial energy users accounting for the largest part of this. Germany's

greenhouse gas (GHG) emissions have declined by 25–27% since 1990, yet the country still has energy related per capita emissions of around 9t per person, which is relatively high compared with other G20 countries. Germany's CCPI evaluation of the emissions level is poor but with a slightly positive trend.

#### CCPI EVALUATION OF GERMANY'S EMISSIONS



Source: CCPI 2015

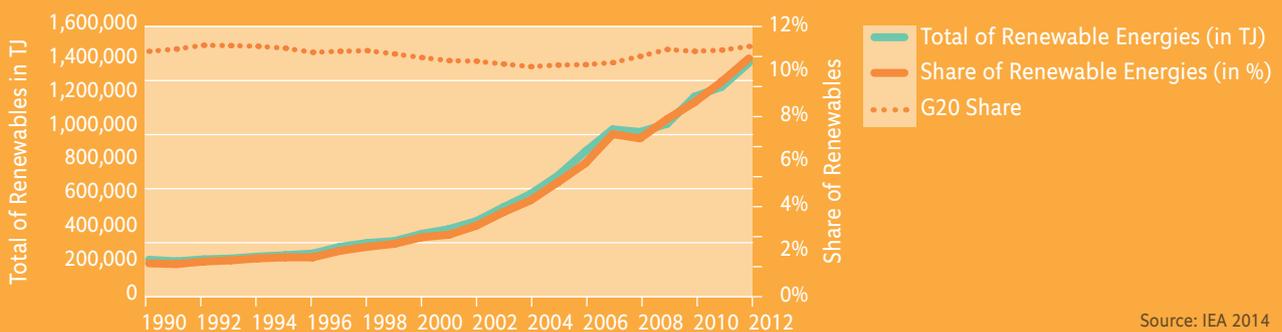
## DECARBONISATION

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

sation 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 GERMANY



Source: IEA 2014

Germany has strongly increased its share of renewables in total energy supply, through feed in tariffs, and the support and engagement of citizens. In 2014, renewable energy reached 11.3% of the primary energy supply and 27.2% of the electricity mix,

which is near the G20 average. The share of renewable energy in primary energy consumption is on course to reach 30% in 2030. The CCPI evaluates Germany as medium performer with a strong positive trend.

#### CCPI EVALUATION OF GERMANY'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

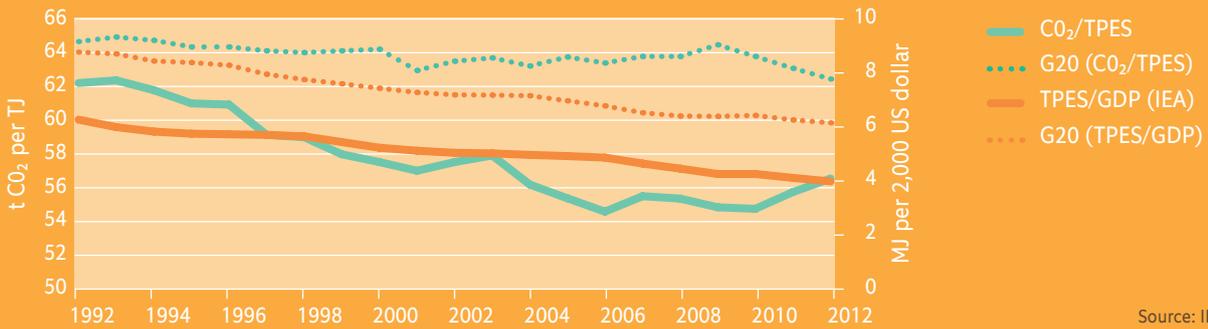
intensity. The latter are measured as CO<sub>2</sub> emissions per unit of Primary Energy Supply (CO<sub>2</sub>/TPES) and Primary Energy Supply per unit of GDP (TPES/GDP) respectively.

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 GERMANY



Source: IEA 2014

The carbon intensity of Germany's energy supply (CO<sub>2</sub>/TPES) has fallen, reflecting the increased role of renewable energy. The country's energy intensity (TPES/GDP) is also gradually falling. Both indicators

point to the start of a decoupling process. The CCPI evaluates Germany's performance regarding energy and carbon intensity as poor, but with a positive trend.

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



Source: CCPI 2015

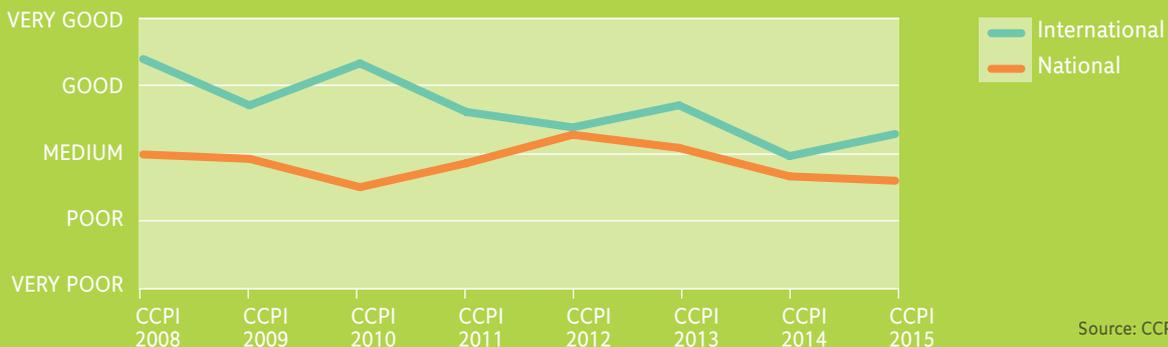
# CLIMATE POLICY PERFORMANCE

## 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.

### GERMANY'S CLIMATE POLICY



Source: CCPI 2008-2015

For many years, Germany has been a leading actor in international and EU climate policy. In recent years, Germany's climate leadership has weakened internationally, and especially at the EU level. Such weakness was one reason accounting for the recent poor performance of the EU Emissions Trading Scheme (ETS). Most recently, the country has become more active

again, and deserves credit for pushing for a decarbonisation agenda in the G7.

Nationally, the "Energiewende" is a ground-breaking effort, with an ambitious target for 80% renewables in the energy system by 2050. Nonetheless, at the moment Germany still relies on an increasing use of lignite, after deciding to phase out nuclear power.

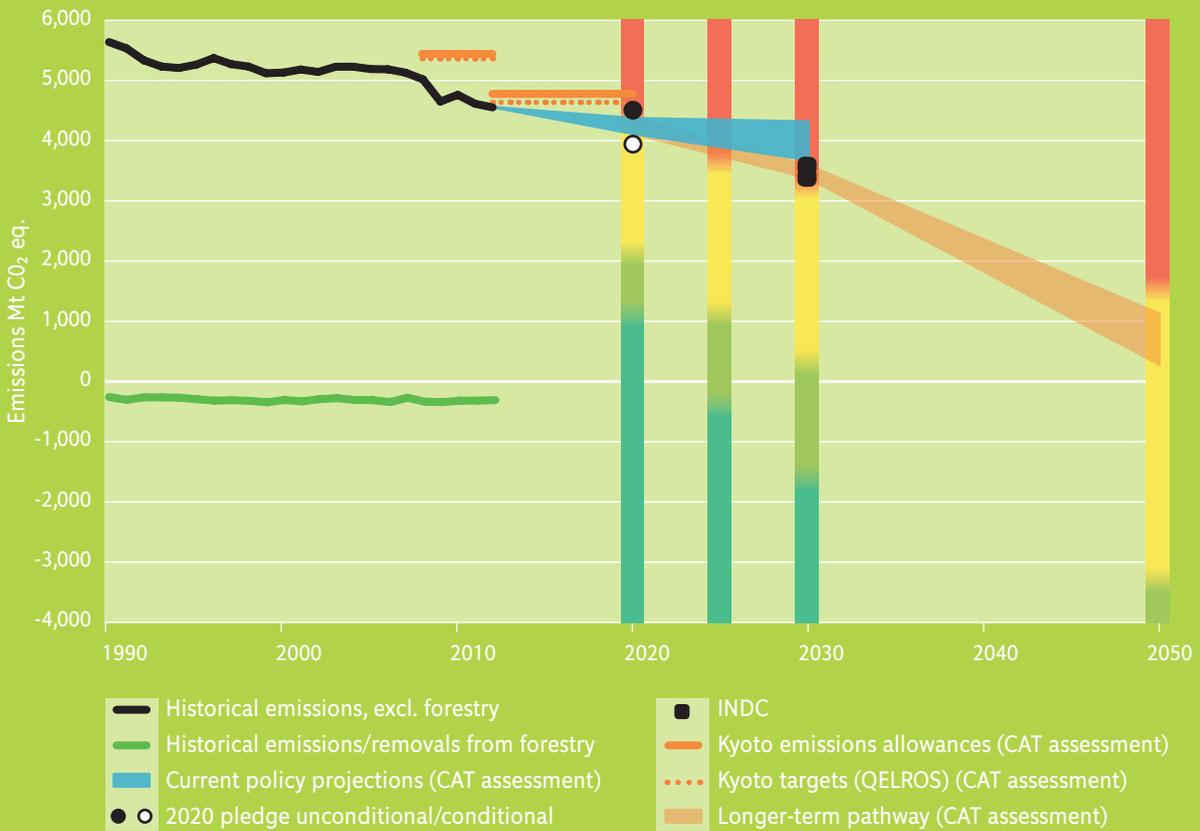
### CCPI EVALUATION OF GERMANY'S CLIMATE POLICY



Source: CCPI 2015

# COMPATIBILITY OF NATIONAL CLIMATE TARGETS WITH 2°C

As an EU member state, Germany did not submit its own Intended Nationally Determined Contribution (INDC) or emissions reduction target towards COP21.



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

Under its INDC, the EU proposed on 6 March 2015 a binding, economy-wide target to cut domestic greenhouse gas emissions by at least 40% below 1990 levels in 2030. No individual EU member state has its own INDC, but some countries, such as Germany, may have more ambitious, domestic targets.

The Climate Action Tracker (CAT) rates the EU emissions target as “medium”, meaning that the INDC is not consistent with limiting warming below 2°C. It would require other countries to make a comparably greater effort and much deeper emissions reductions.

The overall level of GHG emissions reductions proposed in the INDC is not yet sufficient to fall within the range of approaches for fair and equitable emission reductions by the EU28. Current policies are projected to reduce domestic emissions by 23–35% below 1990 levels in 2030, and so do not yet put the EU on a trajectory towards meeting either its 2030 or 2050 targets. The EU’s Emissions Trading Scheme is the bloc’s most important instrument to achieve its 2020 and 2030 emissions reduction targets. However, an accumulated surplus of emissions allowances could dilute the 40% GHG target by 7% in 2030. It is therefore important that the EU creates a robust market reserve for eliminating that surplus, to keep in line with the 40% GHG target.

CAT EVALUATION OF THE EU’S INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDC)

