

ASSESSING CLIMATE PROTECTION PERFORMANCE:
G20 COUNTRY PROFILE

Saudi Arabia

This Country Profile assesses Saudi Arabia'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*	SAUDI ARABIA	G20
Population [million]	28	4,587
GDP per capita (PPP) [US\$]	45,271	14,505
Share of global GHG emissions**	1.0%	74.2%
Share of global GDP	1.5%	80.3%
Share of global population	0.4%	64.7%
GHG per capita [t CO ₂ e/cap]**	17.3	7.2
Energy intensity of the economy (TPES/GDP [MJ/US\$])	6.5	6.6
Carbon intensity of energy supply (CO ₂ /TPES [t CO ₂ /TJ])	54.7	63.1
Carbon intensity of the economy (CO ₂ /GDP [kg CO ₂ /US\$])	0.36	0.42
Share of fossil fuels in primary energy supply	100%	83.4%
Share of coal in electricity production	0%	35.7%
Share of renewables in primary energy supply	0%	11.1%

*year 2012 (unless stated otherwise)

**year 2010

GDP = gross domestic product

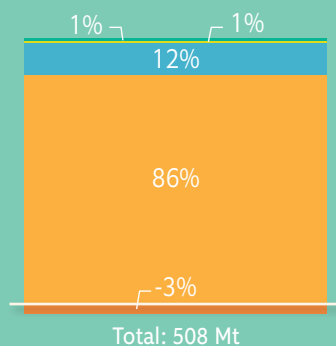
GHG = greenhouse gas emissions (net emissions including sinks from agriculture, forestry, and other land uses)

TPES = total primary energy supply

PPP = purchasing power parity in prices of 2005

EMISSIONS AND EMISSIONS TRENDS

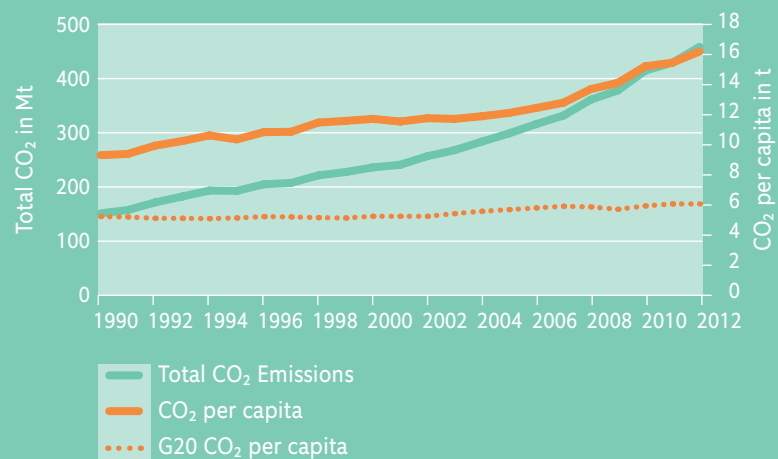
COMPOSITION OF GHG – SAUDI ARABIA 2010



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

Source: IEA 2014; **CAT 2015

ENERGY-RELATED CO₂-EMISSIONS – SAUDI ARABIA



Source: IEA 2014

Saudi Arabia is the biggest economy in the Arabian Gulf. As member of OPEC, its economy relies primarily on oil production, processing and refining. Such activities have led to very high per capita emissions of carbon dioxide (CO₂). Both, total and per capita

emissions have risen steadily. Per capita emissions are more than twice the G20 average, resulting in a very poor performance in the CCPI, and a strong negative trend.

CCPI EVALUATION OF SAUDI ARABIA'S EMISSIONS



Source: CCPI 2015

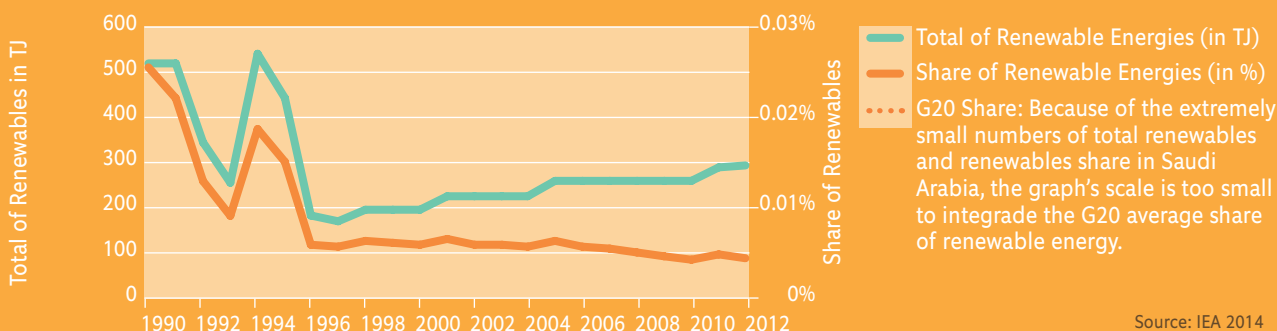
DECARBONISATION

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 SAUDI ARABIA



Source: IEA 2014

Saudi Arabia's energy production relies almost exclusively on fossil fuels. Expansion of renewable energy, especially solar energy, is planned, but there are no

firm commitments yet. Saudi Arabia has the lowest share of renewables in the G20, and is therefore ranked as very poor by the CCPI.

CCPI EVALUATION OF SAUDI ARABIA'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

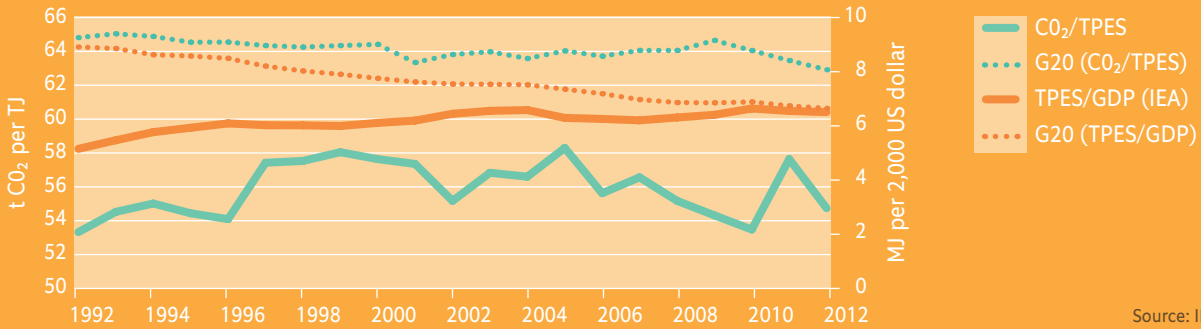
intensity. The latter are measured as CO₂ emissions per unit of Primary Energy Supply (CO₂/TPES) and Primary Energy Supply per unit of GDP (TPES/GDP) respectively.

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 SAUDI ARABIA



Source: IEA 2014

Saudi Arabia's carbon intensity of energy supply (CO₂/TPES) has been fairly constant, while the energy intensity of the economy (TPES/GDP) is slowly rising. In the CCPI, the country's level of energy and carbon

intensity is ranked poor in comparison with other G20 countries. Since the two indicators are developing in different directions, there is no clear trend.

CCPI EVALUATION OF SAUDI ARABIA'S ENERGY AND CARBON INTENSITY



Source: CCPI 2015

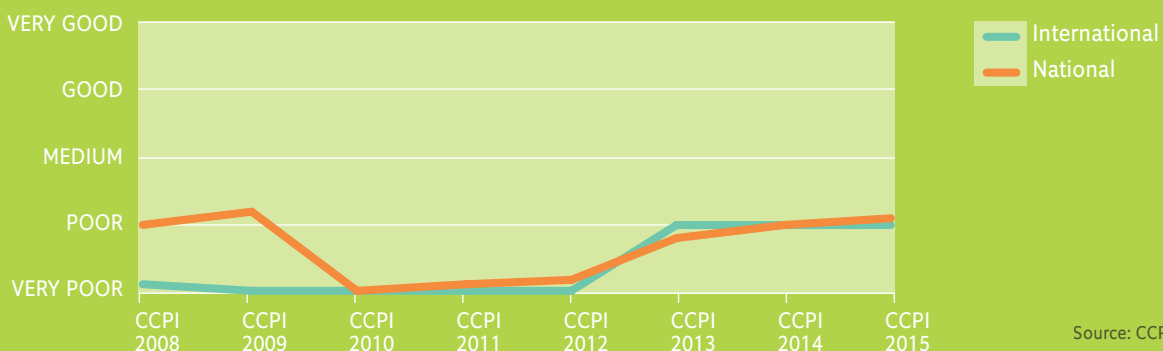
CLIMATE POLICY PERFORMANCE

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.

SAUDI ARABIA'S CLIMATE POLICY



Source: CCPI 2008-2015

In international climate diplomacy, Saudi Arabia has strongly defended its fossil fuel interests, making it a stumbling block in climate negotiations. At the national level, the country has made only limited

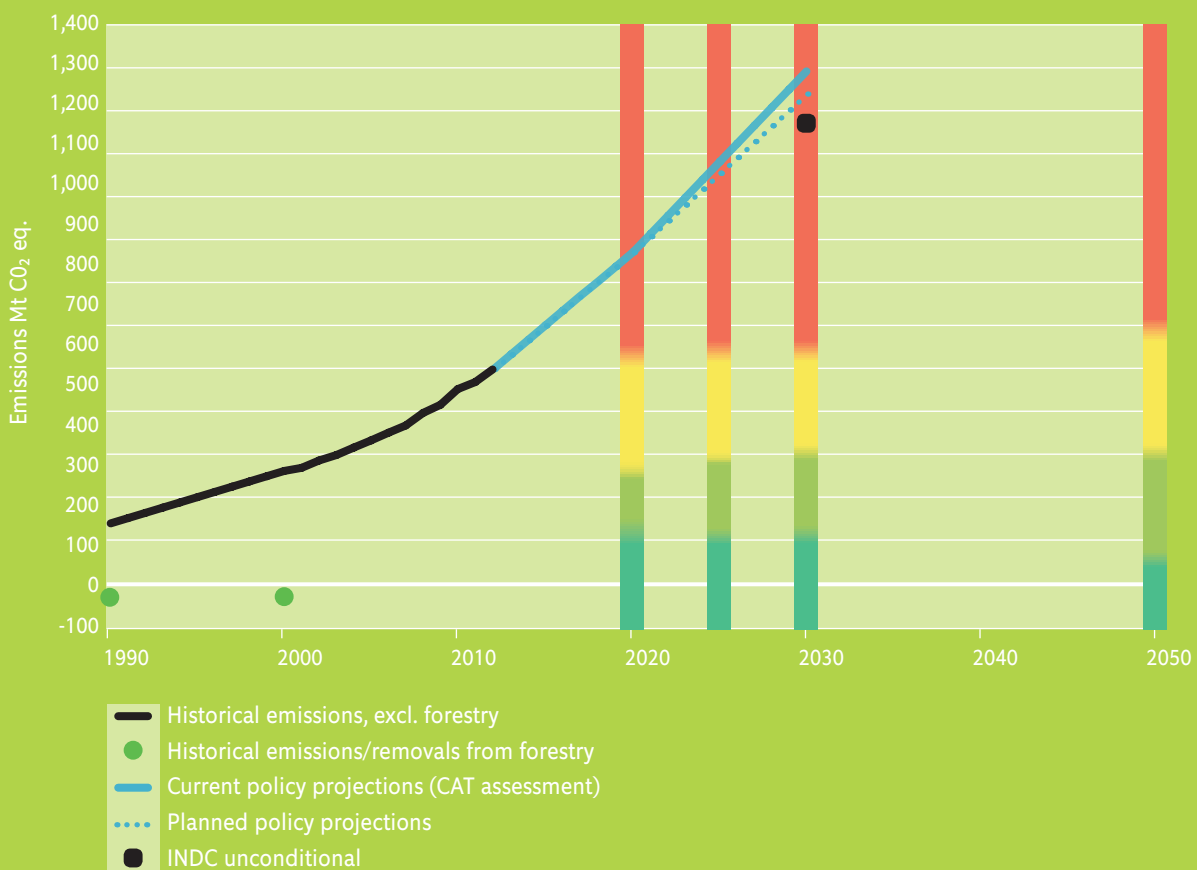
effort, such as a plan to establish a national sustainable energy program. The CCPI rates the country's climate policy performance as very poor.

CCPI EVALUATION OF SAUDI ARABIA'S CLIMATE POLICY



Source: CCPI 2015

COMPATIBILITY OF NATIONAL CLIMATE TARGETS WITH 2°C



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

On 10 November 2015, Saudi Arabia submitted its Intended Nationally Determined Contribution (INDC), seeking to reduce its emissions annually by up to 130MtCO₂e in 2030 through measures that have co-benefits in pursuing economic diversification from oil while contributing to greenhouse gas abatement and adaptation to climate change. Assuming those baseline levels, of the most recent national emissions projections, the INDC results in emissions levels at around 1,160MtCO₂e excl. LULUCF by 2030, a 132% increase above 2010 levels, or a 600% increase above 1990 levels. Based on this target, the CAT rates Saudi Arabia “inadequate”. The proposed abatement far from being enough for Saudi Arabia to contribute fairly in limiting global warming by 2°C. To do so with a minimum effort, Saudi Arabia would need to at least quadruple its proposed abatement and overall ambition.

This is highly inconsistent with the fact that Saudi Arabia is very sensitive to climate change. Average warming for 2040 in Saudi Arabia is higher than the global average and, in a 3–4°C world, three quarters of the country will suffer from excessive dryness by the end of the century (Presidency of Meteorology and Environment, 2011). Equally alarming is the fact that important planned policies aiming at diversifying the energy mix and to achieve 54 GW of renewable and 17 GW of nuclear energy by 2032 have been delayed by eight years in response to low oil prices. The delay appears also to be linked to the country’s desire to build its own renewable manufacturing business in line with its diversification strategy. Overall, we estimate this delay leads cumulatively to an additional 1 GtCO₂e emitted between 2017 and 2030 and additional emissions of 120MtCO₂e/year after 2030, representing 0.6% of the G20 emissions gap to hold global warming below 2°C.

CAT EVALUATION OF SAUDI ARABIA’S INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDC)

