

## BROWN TO GREEN:

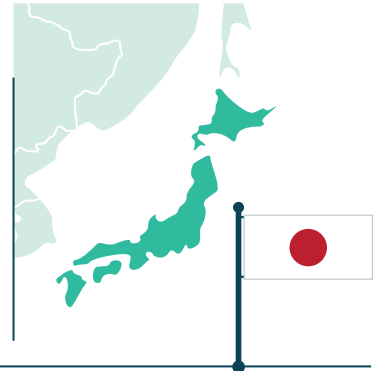
### THE G20 TRANSITION TO A LOW-CARBON ECONOMY | 2018

# JAPAN

GREENHOUSE GAS (GHG) EMISSIONS  
(INCL. FORESTRY) PER CAPITA  
(tCO<sub>2</sub>e/capita)



Data from 2015 | Source: PRIMAP 2018



#### The gap:

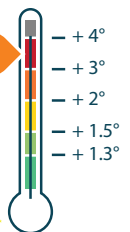
Is Japan on track to stay below the Paris Agreement temperature limit?

Based on implemented policies, Japan's **GHG emissions** are projected to decrease to between 1,079 and 1,155 MtCO<sub>2</sub>e in 2030 (excl. forestry). This emission pathway is not compatible with the Paris Agreement.<sup>1</sup>

Japan's **NDC** is not consistent with the Paris Agreement's temperature limit but would lead to a warming of between 3°C and 4°C.<sup>2</sup>

Japan's sectoral **policies** are falling short of being consistent with the Paris Agreement, especially with respect to coal in the power sector, but the country's ambitious policy for electrified vehicles is promising.<sup>3</sup>

Current NDC<sup>2</sup>



Source: CAT 2018

#### Recent developments:

What has happened since the Paris conference?



Energy targets under the New Strategic Energy Plan remain unchanged resulting in high reliance on nuclear and coal.



The government revised its feed-in tariff scheme to achieve a more balanced growth of renewable energy. This resulted in the approval of an increasing number of biomass projects, mainly co-firing imported biomass with coal.

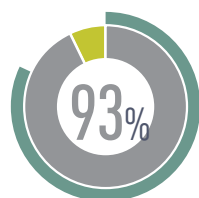


Revised building energy efficiency standards entered into force in 2017. New non-residential buildings >2,000m<sup>2</sup> in floor area must meet these; from 2020 onward the plan is that all new builds (including residential) must meet these.

#### Brown and green performance:

Where does Japan lead or lag compared to G20 countries?

SHARE OF FOSSIL FUELS  
IN ENERGY SUPPLY



G20 average: 82%

Data from 2017 | Source: Enerdata 2018

TRANSPORT EMISSIONS PER CAPITA  
(tCO<sub>2</sub>/capita)



G20 average

Data from 2017 | Source: Enerdata 2018

SHARE OF GREEN PUBLIC POWER  
FINANCE

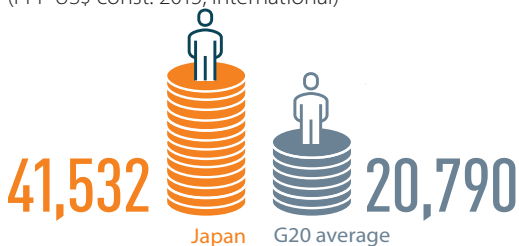
(2013-2015 annual average)



G20 average: 10%

Source: Oil Change International 2017

This country profile is part of the **Brown to Green 2018** report. The full report and other G20 country profiles can be downloaded at: <http://www.climate-transparency.org/g20-climate-performance/g20report2018>

BACKGROUND INDICATORS:  
JAPANGDP PER CAPITA<sup>4</sup>  
(PPP US\$ const. 2015, international)

Source: World Bank 2017

HUMAN DEVELOPMENT INDEX<sup>5</sup>

0.91



Data from 2017 | Source: UNDP 2018

JAPAN'S EXPOSURE TO CLIMATE IMPACTS<sup>6</sup>

This indicator shows the extent to which human society and its supporting sectors are affected by the future changing climate conditions based on an approximately 2°C scenario. This sectoral exposure will be even higher given that the efforts depicted in current NDCs will lead to an approximately 3°C scenario.



## FOOD



Projected climate impacts on cereal yields



Projected increase of food demand due to population growth



## WATER



Projected climate impacts on annual run-off



Projected climate impacts on annual groundwater recharge



## HEALTH



Projected climate impacts on a spread of malnutrition and diarrhoeal diseases



Projected climate impacts on spread of vector-borne diseases

ECOSYSTEM  
SERVICE

Projected climate impacts on biomes occupying the countries



Projected climate impacts on marine biodiversity



## HUMAN HABITAT



Projected climate impacts on frequency of high temperature periods



Projected climate impacts on frequency and severity of floods



## INFRASTRUCTURE



Projected climate impacts on hydropower generation capacity



Proportion of coastline impacted by sea level rise

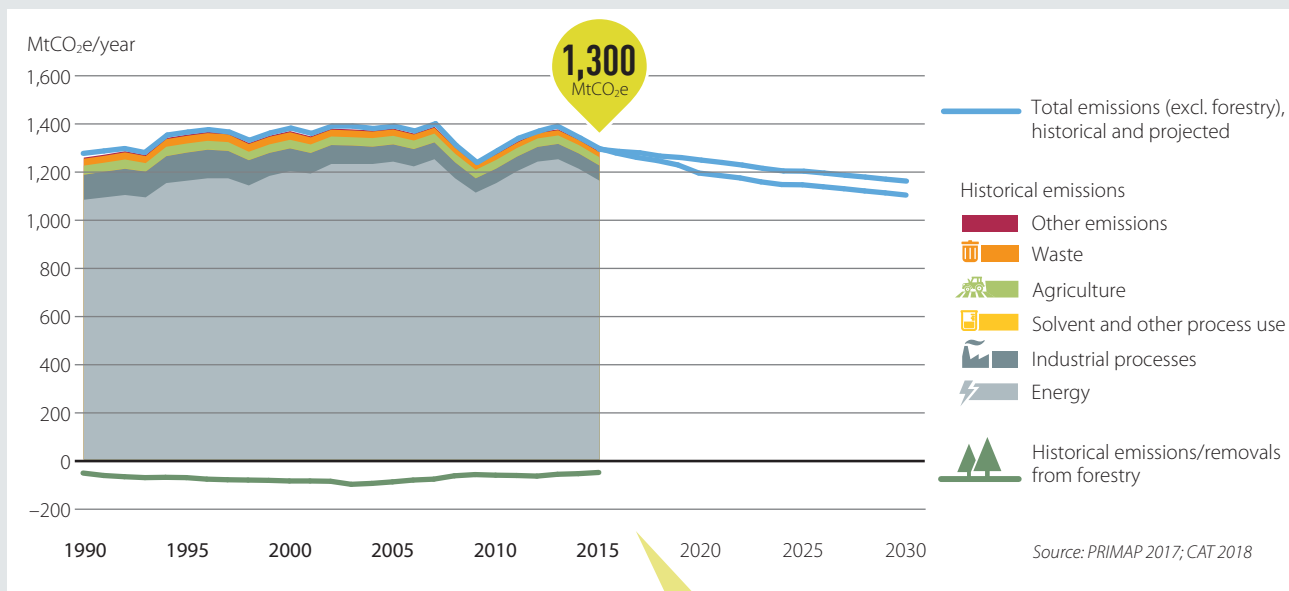


Own composition based on ND-GAIN 2017 (based on data for 2016)

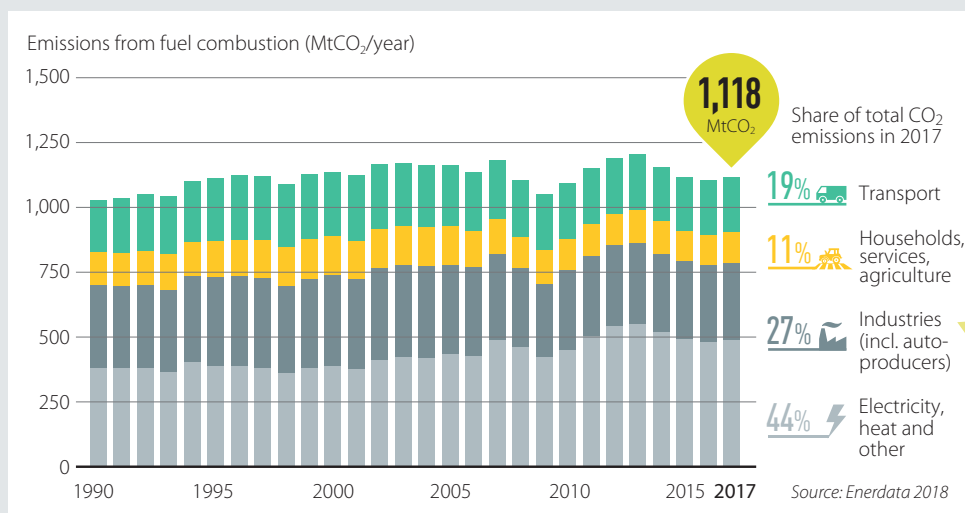


## GREENHOUSE GAS (GHG) EMISSIONS

JAPAN

TOTAL GHG EMISSIONS ACROSS SECTORS<sup>7</sup>CCPI PERFORMANCE RATING OF GHG EMISSIONS PER CAPITA<sup>8</sup>

Japan's emissions have increased by 2% between 1990 and 2015 but are expected to decrease towards 2030. The energy sector contributes most to overall emissions.

ENERGY-RELATED CO<sub>2</sub> EMISSIONS<sup>9</sup>

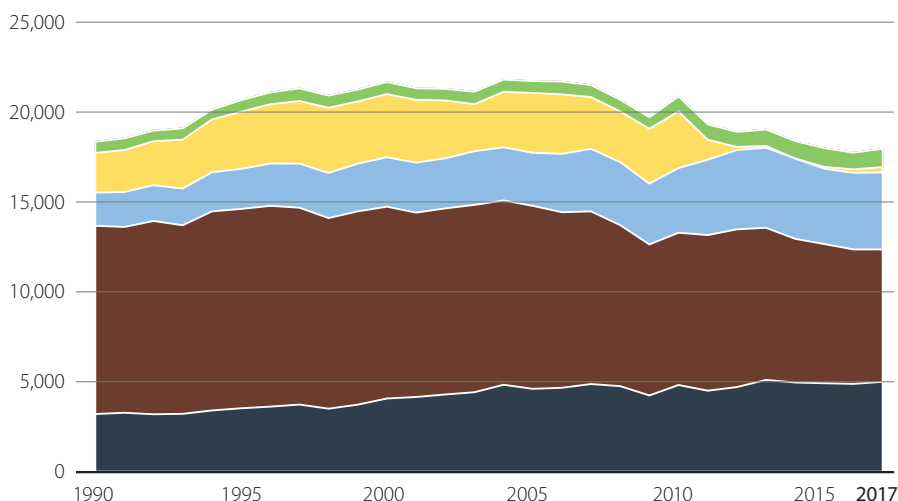
The largest contributor for overall GHG emissions are CO<sub>2</sub> emissions from energy, which showed a slight downward trend in Japan since 2012 but increased again in 2017. The emissions mostly come from electricity and heat, transport and industries.

## DECARBONISATION

## JAPAN

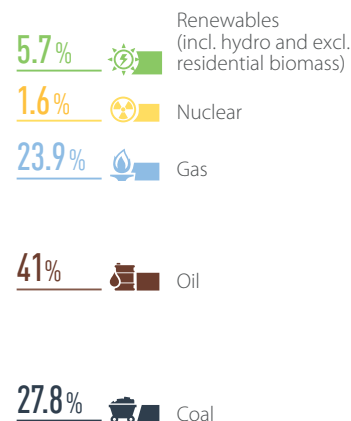
### ENERGY MIX<sup>10</sup>

Total primary energy supply (PJ)



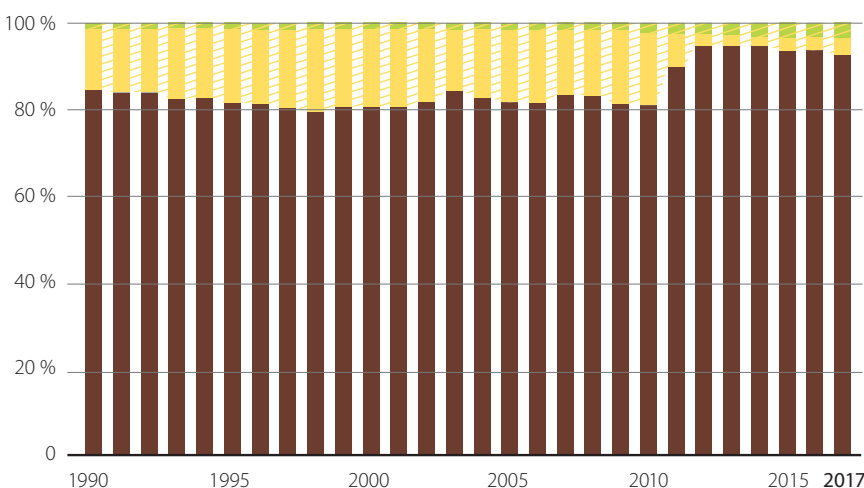
Source: Enerdata 2018

Share in 2017

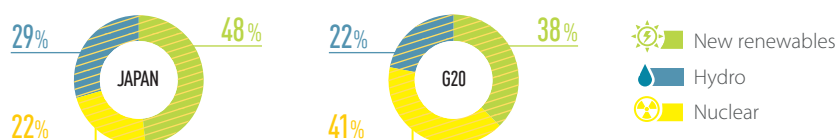


### SHARE OF FOSSIL FUELS AND 'ZERO-CARBON' FUELS IN ENERGY SUPPLY<sup>11</sup>

Share of fossil, 'zero-carbon', new renewables and others in energy supply (%)

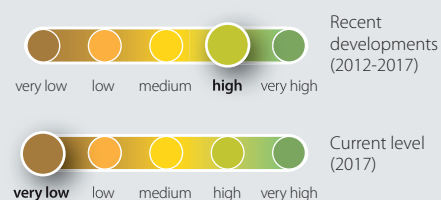


#### 'ZERO-CARBON' SHARES



Source: Enerdata 2018

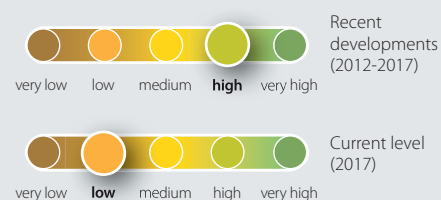
### PERFORMANCE RATING OF SHARE OF FOSSIL FUELS<sup>12</sup>



Source: own evaluation

Zero-carbon fuels include nuclear, hydropower, new renewables. Their share in Japan's energy mix dropped rapidly after the 2011 Fukushima disaster and at 7% is below the G20 average (14%).

### PERFORMANCE RATING OF SHARE OF ZERO-CARBON TECHNOLOGY<sup>12</sup>

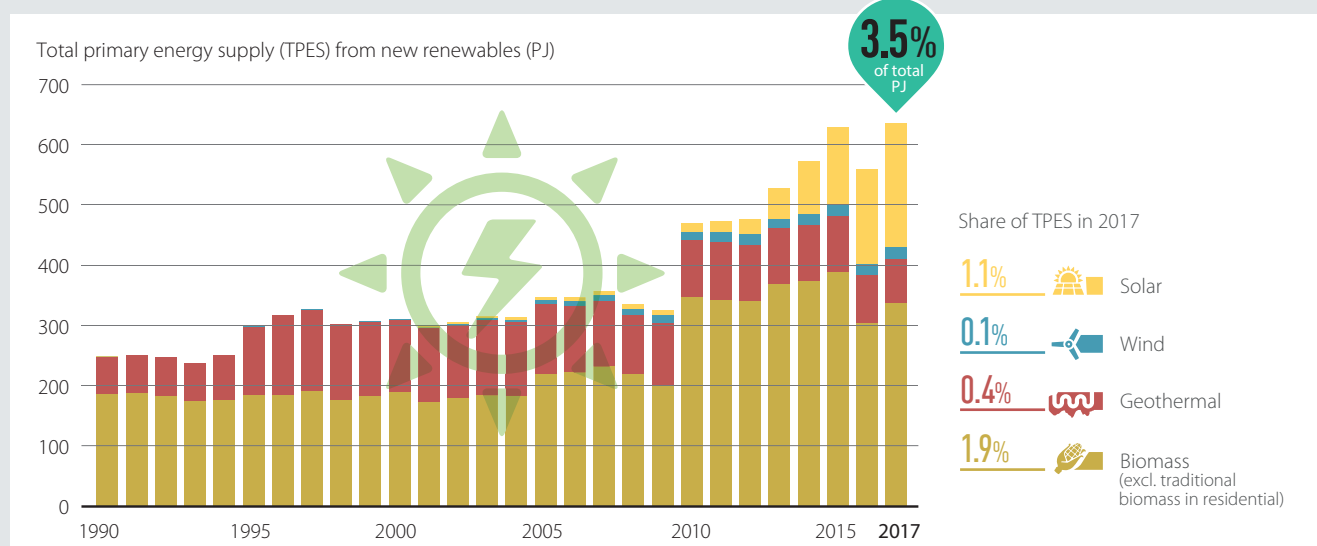


Source: own evaluation



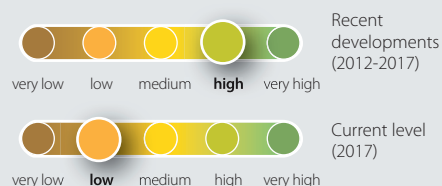
## DECARBONISATION

## JAPAN

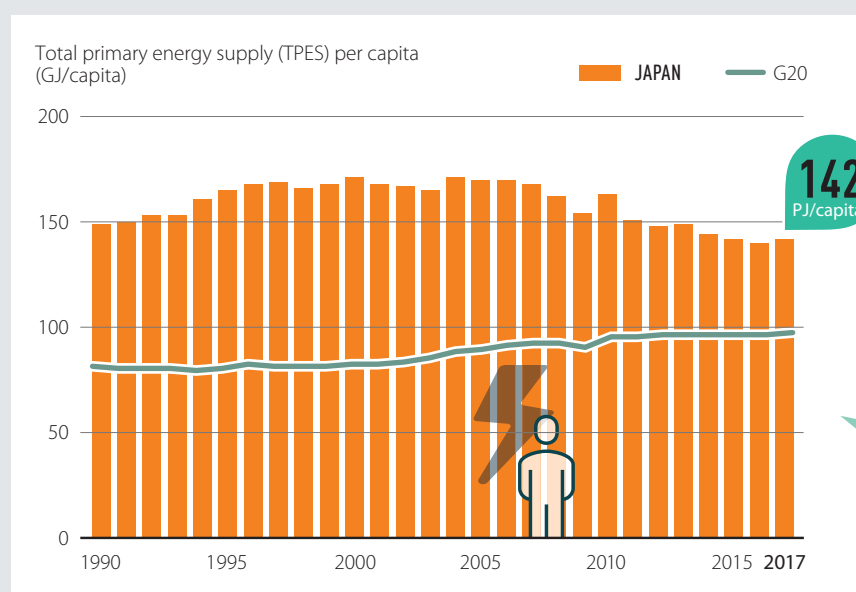
NEW RENEWABLES<sup>13</sup>

Source: Enerdata 2018

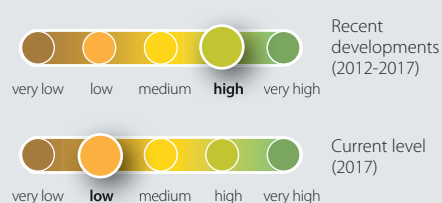
"New renewables" excludes unsustainable renewable sources such as large hydropower. The amount of energy supplied from new renewable sources has increased by 34% (2012–2017), due to the increase of solar energy, but at 3.5% remains below the G20 average (5%). The highest share in new renewable sources is from biomass.

PERFORMANCE RATING OF NEW RENEWABLES<sup>12</sup>

Source: own evaluation

ENERGY USE PER CAPITA<sup>14</sup>

Source: Enerdata 2018

PERFORMANCE RATING OF ENERGY USE PER CAPITA<sup>12</sup>

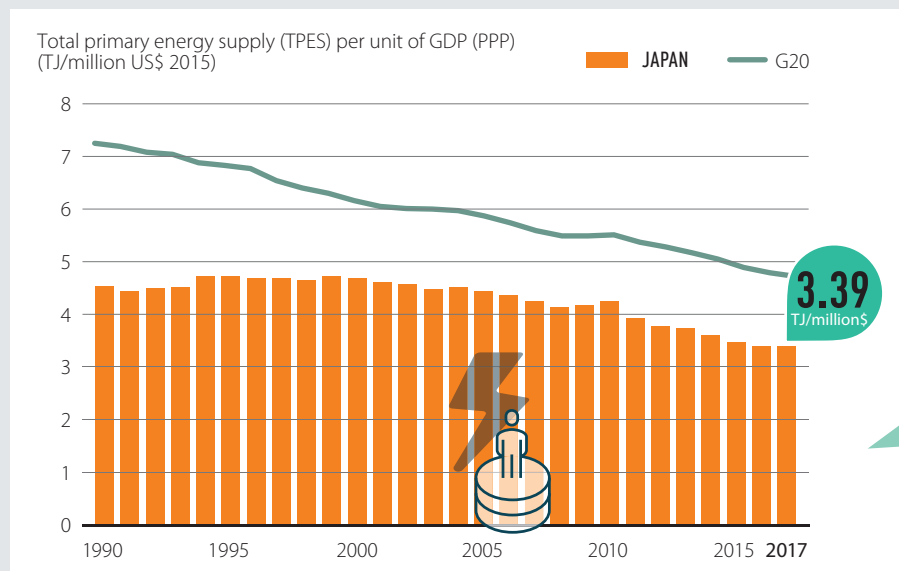
Source: own evaluation

Energy use per capita in Japan is well above G20 average but decreased by 4% between 2012 and 2017, compared to a slight increase in the G20 (1%).



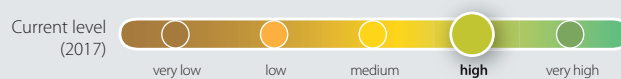
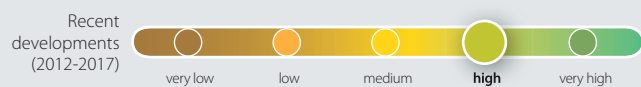
## DECARBONISATION

## JAPAN

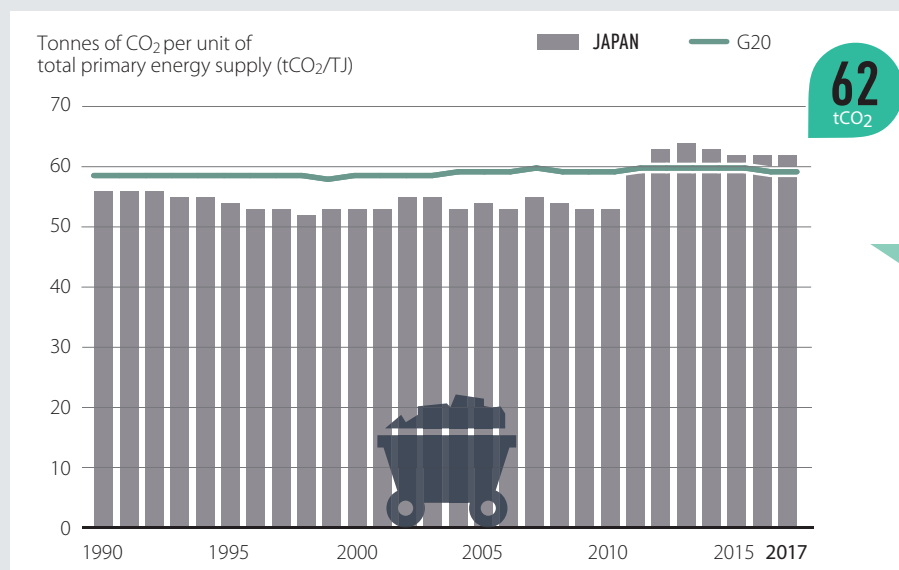
ENERGY INTENSITY OF THE ECONOMY<sup>15</sup>

This indicator quantifies how much energy is used for each unit of GDP. Japan's energy intensity is below G20 average and is decreasing at the same rate as the G20 average (-11% from 2012 to 2017).

Source: Enerdata 2018

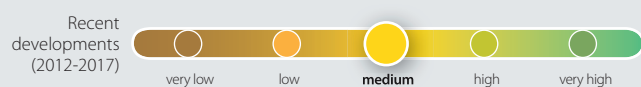
PERFORMANCE RATING OF ENERGY INTENSITY<sup>12</sup>

Source: own evaluation

CARBON INTENSITY OF THE ENERGY SECTOR<sup>16</sup>

The carbon intensity of Japan's energy sector jumped above the G20 average in 2011, when nuclear was replaced by gas and coal because of the Fukushima accident. The carbon intensity decreased only slightly by 1% from 2012 to 2017.

Source: Enerdata 2018

PERFORMANCE RATING OF CARBON INTENSITY<sup>12</sup>

Source: own evaluation

# DECARBONISATION

## JAPAN

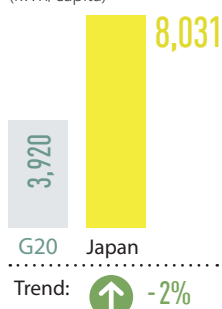
### SECTOR-SPECIFIC INDICATORS

Legend for trend: negative positive

The trend number shows developments over the past five years, where data is available

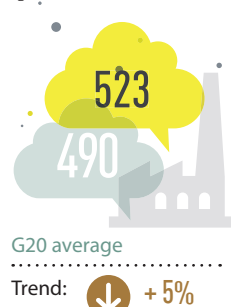
#### POWER SECTOR

ELECTRICITY DEMAND PER CAPITA  
(kWh/capita)



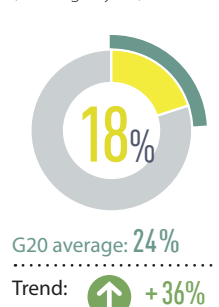
Data from 2017  
Source: Enerdata 2018

EMISSIONS INTENSITY OF THE POWER SECTOR  
(gCO<sub>2</sub>/kWh)



Data from 2016  
Source: Enerdata 2018

SHARE OF RENEWABLES IN POWER GENERATION  
(incl. large hydro)



Data from 2017  
Source: Enerdata 2018

SHARE OF POPULATION WITH ACCESS TO ELECTRICITY



Data from 2016  
Source: World Bank 2018

SHARE OF POPULATION WITH BIOMASS DEPENDENCY



Data from 2014  
Source: IEA 2016

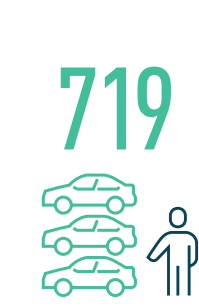
#### TRANSPORT SECTOR

TRANSPORT EMISSIONS PER CAPITA  
(tCO<sub>2</sub>/capita)



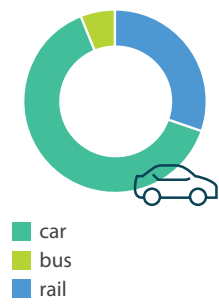
Data from 2017  
Source: Enerdata 2018

MOTORISATION RATE  
(Vehicles per 1000 inhabitants)



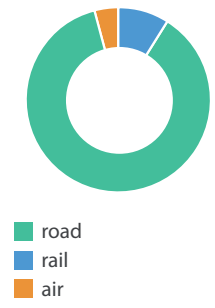
Data from 2016 | Source: Agora Verkehrswende 2018

PASSENGER TRANSPORT  
(modal split in % of passenger-km)



Data from 2009 | Source: Agora Verkehrswende 2018

FREIGHT TRANSPORT  
(modal split in % of tonne-km)



Data from 2015 | Source: Agora Verkehrswende 2018

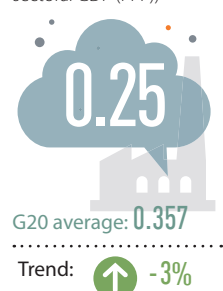
MARKET SHARE OF ELECTRIC VEHICLES IN NEW CAR SALES (%)



Data from 2017  
Source: IEA 2018

#### INDUSTRY SECTOR

INDUSTRY EMISSIONS INTENSITY  
(tCO<sub>2</sub>e/thousand US\$2015 sectoral GDP (PPP))



Data from 2015  
Source: PRIMAP 2018

#### BUILDING SECTOR

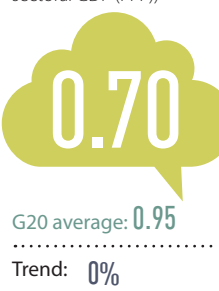
BUILDING EMISSIONS PER CAPITA  
(tCO<sub>2</sub>/capita)



Data from 2016  
Source: Enerdata 2018

#### AGRICULTURE SECTOR

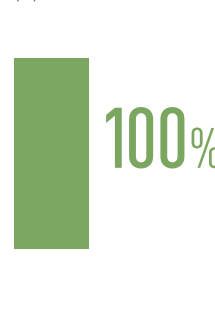
AGRICULTURE EMISSIONS INTENSITY  
(tCO<sub>2</sub>e/thousand US\$2015 sectoral GDP (PPP))



Data from 2015  
Source: PRIMAP 2018

#### FOREST SECTOR

FOREST AREA COMPARED TO 1990 LEVEL (%)

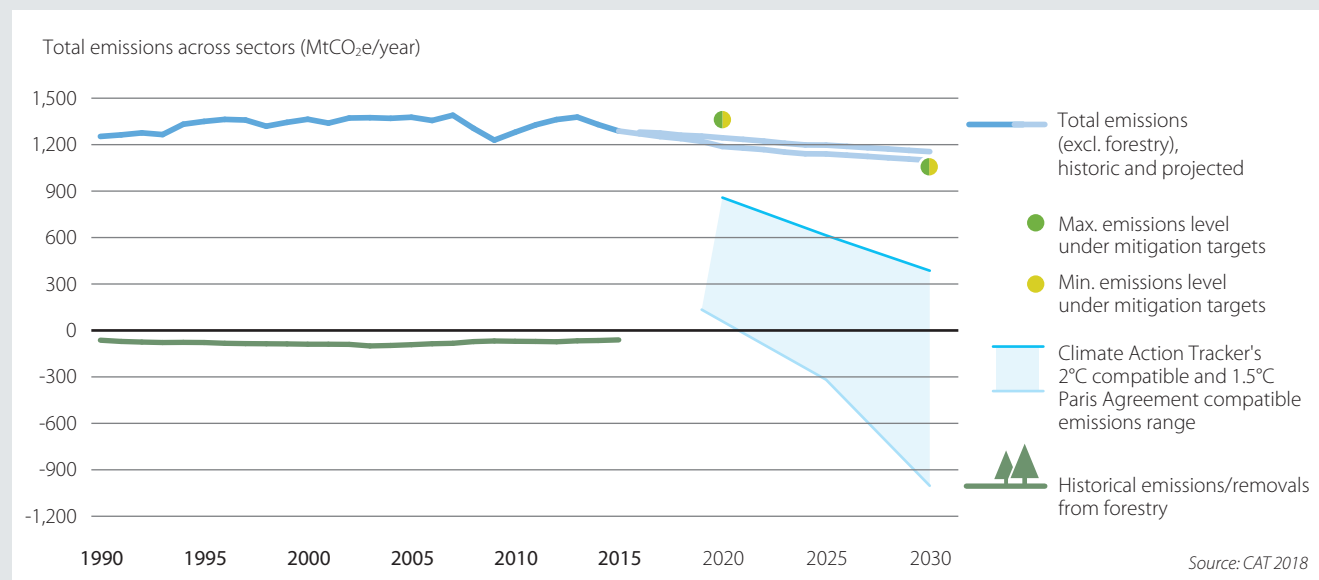


Data from 2015  
Source: PRIMAP 2018

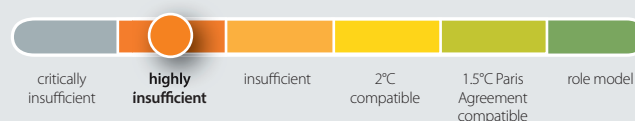


## CLIMATE POLICY

## JAPAN

COMPATIBILITY OF CLIMATE TARGETS WITH THE PARIS AGREEMENT<sup>2</sup>

The CAT rates Japan's NDC target "highly insufficient" meaning that if all countries were to adopt this level of ambition, global warming would likely exceed 3°C to 4°C in the 21st century. Under current policies, Japan will overachieve its 2020 pledge but will not achieve its NDC targets. Japan's coal plant construction plans, which could add 17 GW of coal power, remain a concern and pose a serious risk to the government's future mitigation efforts.

CLIMATE ACTION TRACKER (CAT) EVALUATION OF NDC<sup>2</sup>

## NATIONALLY DETERMINED CONTRIBUTION (NDC)

## MITIGATION

<b>Targets</b>	<p><b>Overall targets</b> 26% of emission reductions by fiscal year (FY) 2030 compared to FY 2013 (25.4% reduction compared to FY 2005)</p> <p><b>Coverage</b> 100% of emissions covered (all sectors and gases)</p> <p><b>Sectoral targets</b> <b>Energy:</b> Renewable energy comprises approximately 22% to 24% of Japan's total power generation in 2030</p>
<b>Actions</b>	Actions specified (sectors: industry, transport, energy, waste, agriculture, land use and forestry)

## ADAPTATION

<b>Targets</b>	Not mentioned
<b>Actions</b>	Not mentioned

## FINANCE

<b>Conditionality</b>	Not applicable
<b>Investment needs</b>	Not specified
<b>Actions</b>	Not mentioned
<b>International market mechanisms</b>	Accumulated emission reductions or removals by 2030 through markets to be undertaken within the government's annual budget are estimated to range from 50 million to 100 million tCO <sub>2</sub>

Source: own compilation based on UNFCCC 2018





CLIMATE POLICY

JAPAN

POLICY EVALUATION<sup>17</sup>

The ratings evaluate a selection of policies that are essential pre-conditions for the longer-term transformation required to meet the 1.5°C limit. They do not represent a complete picture of what is necessary.

Legend:

low

No action

medium

Some action

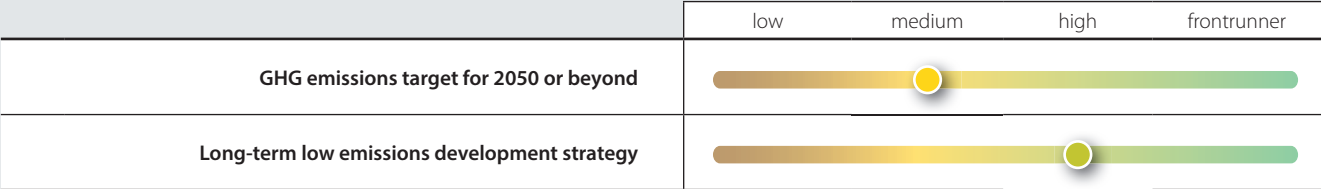
high

Significant action and a long-term vision

frontrunner

Significant action, and a long-term vision that is compatible with 1.5°C

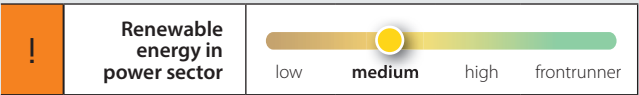
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most important measures based on share of emissions and political relevance

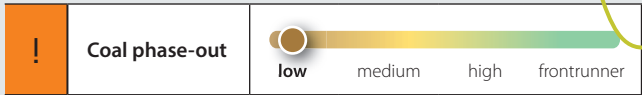
The Plan for Global Warming Countermeasures aims to reduce GHG emissions by 80% by 2050, and establishes sectoral sub-targets until 2030 and policy measures. The plan will be revised every three

years, and a ministerial decision-making body chaired by the Prime Minister supervises its implementation.

POWER

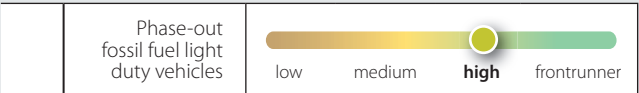


Japan aims to increase the share of renewables in the electricity mix to between 22% and 24% by 2030. So far, the government has not adopted a 2050 renewables target.



Under the current 2030 Strategic Energy Plan, Japan plans to reduce its coal power to 26% of the electricity mix.

TRANSPORT



Japan aims for a 50% to 70% share of electric vehicles in total domestic vehicles sales by 2030. In 2018, the government announced that Japan would be selling only electric passenger vehicles by 2050, and that emissions of all passenger vehicles would be reduced by 90% against the 2010 level. Tax breaks and subsidies for eco vehicles are available.

BUILDINGS



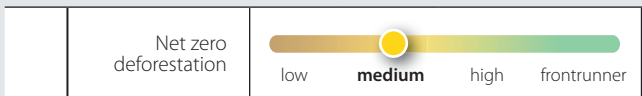
According to the 2016 Zero-Energy Houses Roadmap, Japan aims to have net-zero emissions in new public buildings by 2020, and in all new buildings by 2030.

INDUSTRY



The government has established energy efficiency benchmarks for steel, electricity, cement, paper and pulp, oil refineries and the chemical industry. The benchmarks are set at the level of the top 10% to 20% most energy-efficient industry sites. There is no target to have all new industry installations complying with low-carbon best available technologies.

FORESTS



Japan announced the introduction of a Forest Environmental Tax (tentative name) from 2024. The tax revenue will be used for forest management to contribute to achieving Japan's NDC. There is no specific target for increasing forest area.

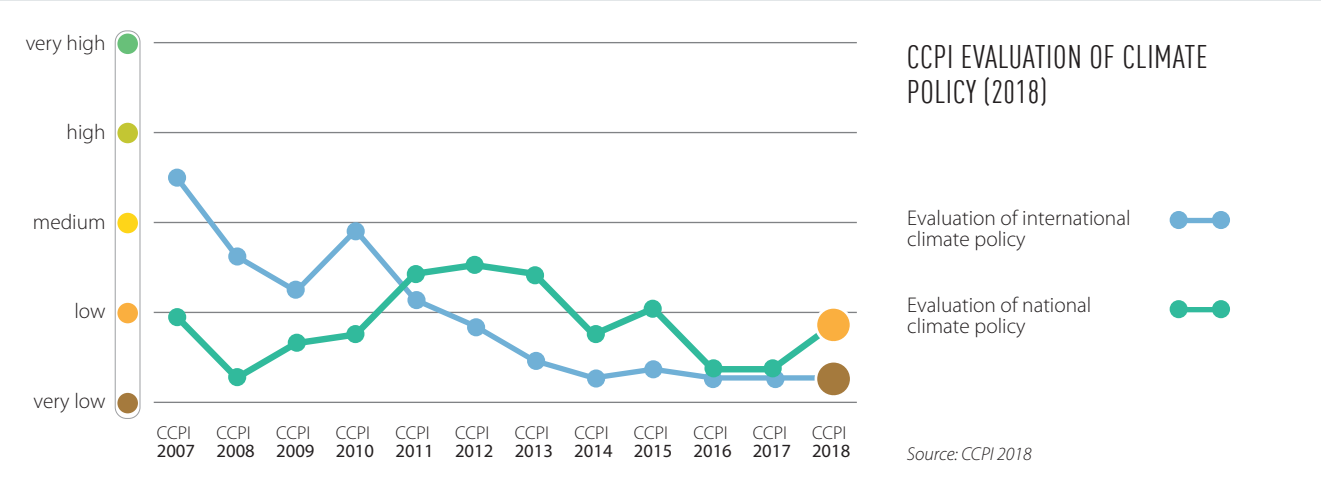
Source: own evaluation

CLIMATE POLICY

JAPAN

CCPI EXPERTS' POLICY EVALUATION<sup>18</sup>

Experts note the introduction of a carbon tax but highlight that effective tax rates are too low. They also criticise the very weak 2030 mitigation targets and caution that Japan's plans to build new coal-fired plants could jeopardise the achievement of these targets. National performance is therefore ranked low. Japan's experts rate its international performance as very low, as Japan is losing influence on the international scale and does not put climate on the agenda in non-formal negotiations.



JUST TRANSITION<sup>19</sup>

Prior to the Fukushima Daiichi nuclear disaster in March 2011, Japan was on course to reduce its reliance on oil power generation (imported), and was aiming to increase the role of nuclear power. The disaster prompted the government to shut down nuclear reactors, pending stricter safety upgrades, and to turn to coal and natural gas. This trend is set to continue to 2030, with the

expectation that more coal power plants will be commissioned. At this time, the Japanese government does not appear to have a public stance on a just transition for workers or affected communities.





## FINANCING THE TRANSITION

## JAPAN

## FINANCIAL POLICIES AND REGULATIONS

Through policy and regulation governments can overcome challenges to mobilising green finance, including: real and perceived risks, insufficient returns on investment, capacity and information gaps.

APPROACHES TO IMPLEMENTING THE RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)<sup>20</sup>

This indicator establishes the degree of government engagement with the recommendations of the G20 Financial Stability Board's Task Force on Climate-Related Financial Disclosure.

No formal engagement with TCFD	Political and regulatory engagement	Formal engagement with private sector	Publication of guidance and action plans	Encoding into law
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

Source: CISEL 2018

Japan's Ministry of Economy, Trade and Industry (METI) created a Study Group on Long-term Investment (Investment evaluating Environment, Social and Governance Factors and Intangible Assets) towards Sustainable Growth in 2016. In 2017, this group published guidance for companies and investors that aims to support the disclosure of corporate information, including on sustainability.

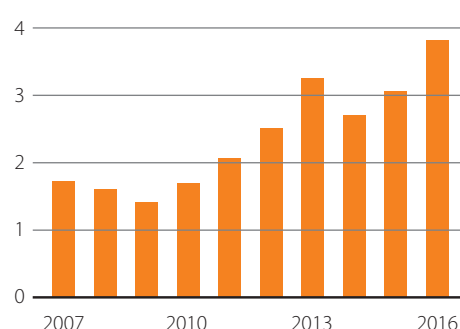
## FISCAL POLICY LEVERS

Fiscal policy levers raise public revenues and direct public resources. Critically, they can shift investment decisions and consumer behaviour towards low-carbon, climate-resilient activities by reflecting externalities in prices.

## FOSSIL FUEL SUBSIDIES

In 2016, Japan provided US\$3.8bn in fossil fuel subsidies (from US\$1.7bn in 2007). Between 2007 and 2016, subsidies were lower (US\$0.0005) than the G20 average (US\$0.003) per unit of GDP. Subsidies were provided through direct budget support and tax exemptions, primarily targeting general services infrastructure (73%). The largest subsidy is oil stockpiling by the government in case of a major oil supply disruption (US\$922.6m in 2016).

Fossil fuel subsidies (US\$ billions)



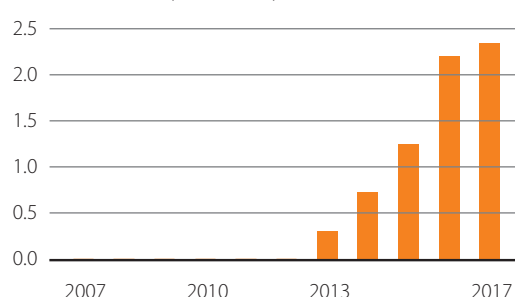
Source: OECD/IEA 2018



## CARBON REVENUES

Japan's 2012 national carbon tax covers 68% of domestic emissions and generated US\$2.3bn in 2017. Japan's 2010-11 subnational emissions trading schemes (it is considering a national scheme) do not have complete revenue estimates. Emissions are priced at between US\$3/tCO<sub>2</sub> and US\$14/tCO<sub>2</sub>. From 2013 to 2017, carbon revenues were lower (US\$0.0003) than the G20 average (US\$0.0005) per unit of GDP.

Carbon revenues (US\$ billions)



Estimates only available from 2013.

Source: I4CE 2018



FINANCING THE TRANSITION

JAPAN

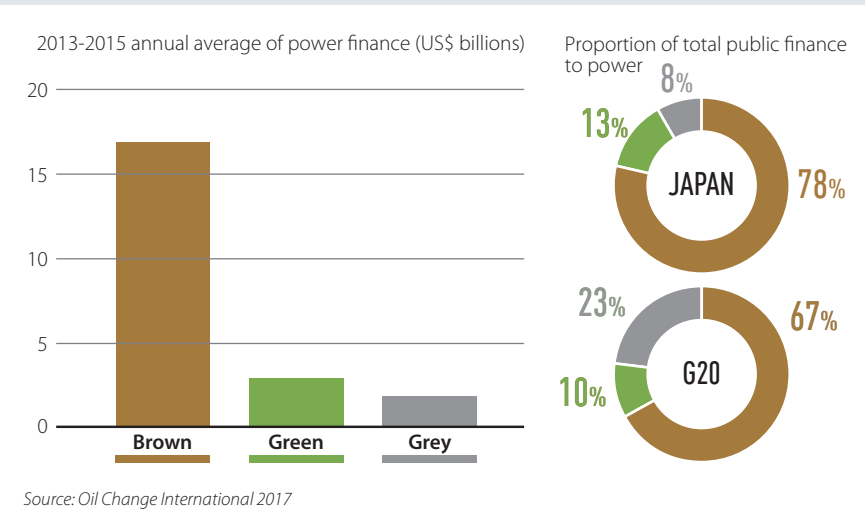
PUBLIC FINANCE

Governments steer investments through their public finance institutions including via development banks, both at home and overseas, and green investment banks. Developed G20 countries also have an obligation to provide finance to developing countries and public sources are a key aspect of these obligations under the UNFCCC.

NATIONAL AND INTERNATIONAL PUBLIC FINANCE IN THE POWER SECTOR<sup>21</sup>

From 2013 to 2015, Japan's public finance institutions spent an annual average of US\$16.8bn brown, US\$2.9bn green and US\$1.8bn grey financing in the power sector, domestically and internationally. The largest transactions were the Japanese Bank for International Cooperation's US\$2.6bn loan to the Freeport natural gas liquefaction project and a US\$2.5bn loan to the Cameron natural gas extraction project in the US.

- coal, oil and gas projects (and associated infrastructure) **brown**
- large-scale hydropower, biofuels, biomass, nuclear, incineration, transmission, distribution, storage, energy efficiency, other general electricity support **grey**
- renewable energy projects (excluding grey financing) **green**



PROVISION OF INTERNATIONAL PUBLIC SUPPORT

Japan's total climate finance contribution was the largest among G20 countries. Compared to the 2013/14 period, its bilateral flows increased, while contributions to multilateral climate funds remained constant (16.3% of the G20 total). Most of this funding is through bilateral channels (e.g. the Japanese Bank for International Cooperation and JICA). Japan's contributions are heavily biased towards mitigation and at lower concessionality than other donors (96% concessional loans). While Japan may channel international public finance towards climate change via multilateral development banks, this has not been included in this report.

OBLIGATION TO PROVIDE CLIMATE FINANCE UNDER UNFCCC



CONTRIBUTIONS THROUGH THE MAJOR MULTILATERAL CLIMATE FUNDS<sup>22</sup>

Note: See Technical Note for multilateral climate funds included and method to attribute amounts to countries

Source: Climate Funds Update 2017

Annual average contribution (mn US\$, 2015-2016)	Theme of support		
	Adaptation	Mitigation	Cross-cutting
245.36	16%	68%	16%

BILATERAL CLIMATE FINANCE CONTRIBUTIONS<sup>23</sup>

Source: Country reporting to the UNFCCC

Annual average contribution (mn US\$, 2015-2016)	Theme of support			
	Mitigation	Adaptation	Cross-cutting	Other
9,767.95	89%	8%	3%	0%



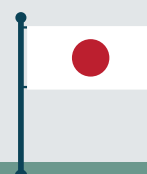
## ANNEX



For more detail on sources and methodologies, please refer to the Technical Note at:

[https://www.climate-transparency.org/wp-content/uploads/2018/11/Technical-Note\\_data-sources-and-methodology.pdf](https://www.climate-transparency.org/wp-content/uploads/2018/11/Technical-Note_data-sources-and-methodology.pdf)

- 1) The 2030 projections of the future development of greenhouse gas (GHG) emissions under current policies are based on the Climate Action Tracker (CAT) estimates.
- 2) The CAT is an independent scientific analysis that tracks progress towards the globally agreed aim of holding warming to well below 2°C, and pursuing efforts to limit warming to 1.5°C. The CAT "Effort Sharing" assessment methodology applies state-of-the-art scientific literature on how to compare the fairness of government efforts and (Intended) Nationally Determined Contribution (I) NDC proposals against the level and timing of emission reductions consistent with the Paris Agreement. The assessment of the temperature implications of a country's NDC is based on the assumption that all other governments would follow a similar level of ambition.
- 3) This assessment is based on the policy evaluation on page 9 of this Country Profile.
- 4) Gross Domestic Product (GDP) per capita is calculated by dividing GDP with mid-year population figures. GDP is the value of all final goods and services produced within a country in a given year. Here GDP figures at purchasing power parity (PPP) are used. Data for 2017.
- 5) The Human Development Index (HDI) is a composite index published by the United Nations Development Programme (UNDP). It is a summary measure of average achievement in key dimensions of human development. A country scores higher when the lifespan is higher, the education level is higher, and GDP per capita is higher.
- 6) The ND-GAIN index summarises a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. This report looks only at the exposure indicators as part of the vulnerability component of the ND-GAIN index for six sectors. It displays the exposure scores provided by the ND-GAIN on a scale from low (score: 0) to high (score: 1).
- 7) The indicator covers all Kyoto gases showing historic emissions in each of the IPCC source categories (energy, industrial processes, agriculture, etc.). Emissions projections (excl. forestry) under a current policy scenario until 2030 are taken from the Climate Action Tracker and scaled to the historical emissions from PRIMAP (see Brown to Green Report 2018 Technical Note).
- 8) The ratings on GHG emissions are taken from the Climate Change Performance Index (CCPI) 2018. The rating of "current level compared to a well below 2°C pathway" is based on a global scenario of GHG neutrality in the second half of the century and a common but differentiated convergence approach.
- 9) CO<sub>2</sub> emissions cover only the emissions from fossil fuels combustion (coal, oil and gas) by sector. They are calculated according to the UNFCCC methodology (in line with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories).
- 10) Total primary energy supply data displayed in this Country Profile does not include non-energy use values. Solid fuel biomass in residential use has negative environmental and social impacts and is shown in the category "other".
- 11) Zero-carbon fuels include nuclear, hydropower and new renewables (non-residential biomass, geothermal, wind, solar).
- 12) Climate Transparency ratings assess the relative performance across the G20. A high scoring reflects a good effort from a climate protection perspective but is not necessarily 1.5°C compatible.
- 13) New renewables include non-residential biomass, geothermal, wind and solar energy. Hydropower and solid fuel biomass in residential use are excluded due to their negative environmental and social impacts.
- 14) Total primary energy supply (TPES) per capita displays the historical, current and projected energy supply in relation to a country's population. Alongside the intensity indicators (TPES/GDP and CO<sub>2</sub>/TPES), TPES per capita gives an indication on the energy efficiency of a country's economy. In line with a well-below 2°C limit, TPES per capita should not grow above current global average levels. This means that developing countries are still allowed to expand their energy use to the current global average, while developed countries have to simultaneously reduce it to that same number.
- 15) TPES per GDP describes the energy intensity of a country's economy. This indicator illustrates the efficiency of energy usage by calculating the energy needed to produce one unit of GDP. Here GDP figures at PPP are used. A decrease in this indicator can mean an increase in efficiency but also reflects structural economic changes.
- 16) The carbon intensity of a country's energy sector describes the CO<sub>2</sub> emissions per unit of total primary energy supply and gives an indication of the share of fossil fuels in the energy supply.



## ANNEX (continued)

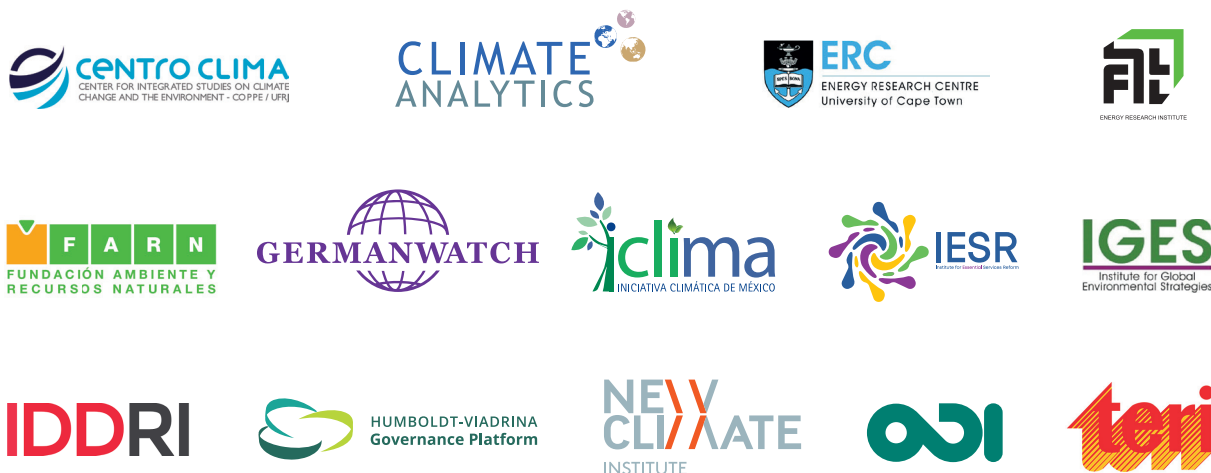


- 17) The selection of policies rated and the assessment of 1.5°C compatibility are informed by the Paris Agreement and the Climate Action Tracker (2016): "The ten most important short-term steps to limit warming to 1.5°C". The table below displays the criteria used to assess a country's policy performance. See the Brown to Green Report 2018 Technical Note for the sources used for this assessment.
- 18) The CCPI evaluates a country's performance in national climate policy, as well as international climate diplomacy through feedback from national experts from non-governmental organisations to a standardised questionnaire.
- 19) See the Brown to Green 2018 Technical Note for the sources used for this assessment.
- 20) The University of Cambridge Institute for Sustainability Leadership (CISL) in early 2018 reviewed the progress made by the national regulatory agencies of G20 members in making the Task Force on Climate-related Financial Disclosures (TCFD) recommendations relevant to their national contexts. See the Brown to Green Report 2018 Technical Note for more information on the assessment.
- 21) This data includes bilateral public finance institutions such as national development banks and other development finance institutions, overseas aid agencies, export credit agencies, as well as key multilateral development banks. The analysis omits most finance delivered through financial intermediaries and significant volumes of multilateral development bank (MDB) development policy finance (due to a lack of clarity on power finance volumes). Given a lack of transparency, other important multilateral institutions in which G20 governments participate are not covered. See the Brown to Green Report 2018 Technical Note for further details.
- 22) Finance delivered through multilateral climate funds comes from Climate Funds Update, a joint ODI/Heinrich Boell Foundation database that tracks spending through major multilateral climate funds. See the Brown to Green Report 2018 Technical Note for multilateral climate funds included and method to attribute approved amounts to countries.
- 23) Bilateral finance commitments are sourced from Biennial Party reporting to the UNFCCC. Financial instrument reporting is sourced from the OECD-DAC; refer to the Brown to Green Report 2018 Technical Note for more detail. Figures represent commitments of Official Development Assistance (ODA) funds to projects or programmes, as opposed to actual disbursements.

On endnote 17)	Criteria description			
	● Low	● Medium	● High	● Fronrunner
<b>GHG emissions target for 2050 or beyond</b>	No emissions reduction target for 2050 or beyond	Existing emissions reduction target for 2050 or beyond	Existing emissions reduction target for 2050 or beyond and clear interim steps	Emissions reduction target to bring GHG emissions to at least net zero by 2050
<b>Long-term low emissions development strategy</b>	No long-term low emissions strategy	Existing long-term low emissions strategy	Long-term low emissions strategy includes interim steps and/or sectoral targets	Long-term low emissions strategy towards full decarbonisation in the second half of the century; includes interim steps and/or sectoral targets, plus institutions and measures in place to implement and/or regularly review the strategy
<b>Renewable energy in power sector</b>	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), average 0-25	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), average 26-60	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), average 61-100	Allianz Monitor 2018 Category 1.2 (targets) and 2 (policies), 61-100 plus 100% renewables in the power sector by 2050 in place
<b>Coal phase-out</b>	No consideration or policy in place for phasing out coal	Significant action to reduce coal use implemented or coal phase-out under consideration	Coal phase-out decided and under implementation	Coal phase-out date compatible with 1.5°C
<b>Phase-out of fossil fuel light duty vehicles (LDVs)</b>	No policy or emissions performance standards for LDVs in place	Energy/emissions performance standards or support for efficient LDVs	National target to phase out fossil fuel LDVs in place	Ban on new fossil-based LDVs by 2025/30
<b>Near zero-energy new buildings</b>	No policy or low emissions building codes and standards in place	Building codes, standards or fiscal/financial incentives for low emissions options in place	National strategy for near zero-energy buildings (at least for all new buildings)	National strategy for near zero-energy buildings by 2020/25 (at least for all new buildings)
<b>Low-carbon new industry installations</b>	No policy or support for energy efficiency in industrial production in place	Support for energy efficiency in industrial production (covering at least two of the country's sub-sectors (e.g. cement and steel production))	Target for new installations in emissions-intensive sectors to be low-carbon	Target for new installations in emissions-intensive sectors to be low-carbon after 2020, maximising efficiency
<b>Net zero deforestation</b>	No policy or incentive to reduce deforestation in place	Incentives to reduce deforestation or support schemes for afforestation / reforestation in place	National target for reaching zero deforestation	National target for reaching zero deforestation by 2020s or for increasing forest coverage

# CLIMATE TRANSPARENCY

Partners:



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based on a decision of the German Bundestag

Data Partners:



<http://www.climate-transparency.org/g20-climate-performance/g20report2018>

