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PER CAPITA GREENHOUSE GAS (GHG) EMISSIONS

Nepal's GHG emissions (incl. land use) increased at the rate of 16.4% between 2012 and 2017.

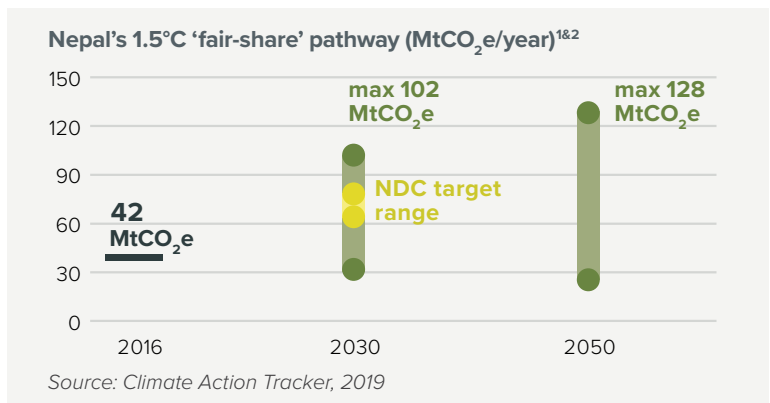


Data for 2017. Sources: Enerdata, 2020; United Nations Department of Economic and Social Affairs Population Division, 2020; Gütschow et al., 2019

NOT ON TRACK FOR A 1.5°C WORLD



Nepal would need to reduce its emissions to below 102 MtCO₂e by 2030 and to below 128 MtCO₂e by 2050 to be within its emissions allowances under a 'fair-share' range compatible with a global 1.5°C pathway. The CAT rates Nepal's updated, conditional NDC as 2°C compatible due to its conditionality. All figures exclude land use and are based on pre-COVID-19 projections.

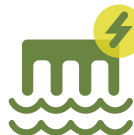


KEY OPPORTUNITIES FOR ENHANCING CLIMATE AMBITION



DEVELOP URBAN PUBLIC TRANSPORT

Development of urban public transport systems, infrastructure for non-motorised mobility and incentives for e-vehicles will reduce air pollution and budget deficits caused by petroleum imports.



PRIORITISE STORAGE-TYPE HYDRO PLANTS

As run-of-river hydropower generation is sensitive to climatic variations, prioritising storage-type hydro plants and harnessing solar energy potential would help improve diversification of the energy mix and energy security.



COMMUNITY-BASED FOREST PROTECTION

Scaling up Community-based Forest Management will further improve Nepal's already significant land carbon sink capacity.

RECENT DEVELOPMENTS



Nepal's 2021/22 budget includes plans to replace fossil fuel-based light vehicles with electric vehicles by 2031 and provides tax incentives for e-vehicles.



Nepal's 2020 NDC includes quantifiable targets for the shortterm (2025) and medium-term (2030) for energy, waste, and agriculture, forestry and other land use. Nepal has also strengthened its plans for adaptation against climate change.



In 2019, the 5% share of non-biomass renewables in total energy consumption was well short of the 20% by 2020 it pledged in its first NDC.

CORONAVIRUS RECOVERY

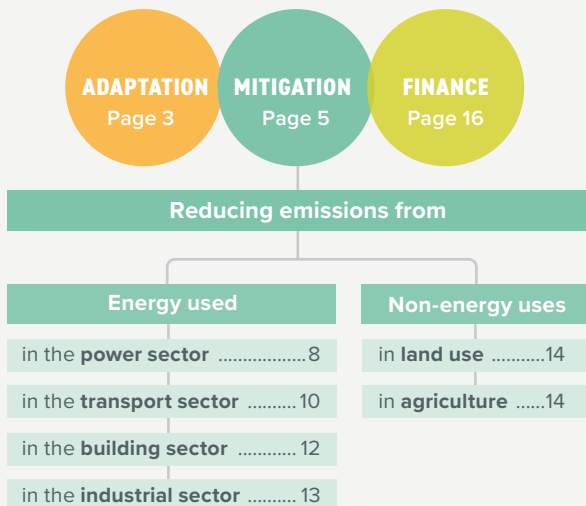
The government's response to the pandemic focuses on building advanced health care systems and infrastructure and allocating funds to vaccinate all people at risk.

One of the main priorities of the 2021/22 budget is to uplift economic activities through relief packages to families affected by COVID-19 and provide incentives, subsidies and rescue packages to the private sector.

Nepal's adaptation priorities – agriculture and food security; forest management, biodiversity and watershed conservation; renewable energy, health for all, and disaster risk reduction and management – are also aimed at providing jobs to unemployed women and other disadvantaged groups.

CONTENTS

We unpack Nepal's progress and highlight key opportunities to enhance climate action across:



LEGEND

Trends show developments over the past five years for which data are available. The thumbs indicate assessment from a climate protection perspective.



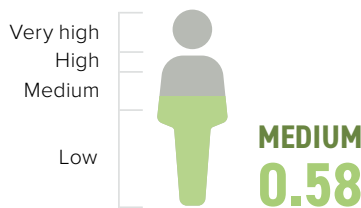
Policy Ratings⁵ evaluate a selection of policies that are essential pre-conditions for the longer-term transformation required to meet the 1.5°C limit.



SOCIO-ECONOMIC CONTEXT

Human Development Index

The Human Development Index reflects life expectancy, level of education, and per capita income. Nepal ranks medium.



Data for 2018. Source: UNDP, 2019

Gross Domestic Product (GDP) per capita



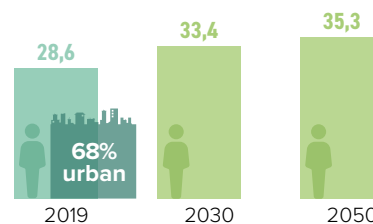
Nepal GDP per capita reached 1,084.96 in July 2020, but overall experienced a sharp decrease from +6.6% in 2019 to -2.1% in 2020 (vs. previous year)

Data for 2019. Source: United Nations Department of Economic and Social Affairs Population Division, 2020

Population and urbanisation projections

(in millions)

Nepal's population is expected to rise to 32.4 million by 2030 and 36 million by 2050, however, population growth is slowing down due to a decreasing fertility rate. Over 60% of Nepal's population lives in urban settings (in 2019) and the country is



one of the most rapidly urbanising nations worldwide.

Sources: The World Bank, 2019; United Nations, 2018

Death rate attributable to air pollution

Ambient air pollution attributable death rate per 1,000 population per year, age standardised



As a result of outdoor air pollution, nearly 22,000 people die in Nepal every year due to stroke, heart disease, lung cancer and chronic respiratory diseases. By 2030, annual premature deaths in Nepal, due to outdoor air pollution are expected to be 24,000.



Data for 2016. Source: WHO, 2018; Shindell et al. 2012

JUST TRANSITION



UPGRADE SKILLS FOR FUTURE EMPLOYMENT

Nepal's 2019 National Climate Change Policy, aims at building climate-resilient society and ecosystems that are at risk and promote green economy through low carbon emission development, environmental conservation, and pursuing human and sustainable development.

The ILO estimates that nearly four in every five workers most vulnerable to disruption are in the construction, manufacturing and trade sectors. COVID-19 pandemic has severely affected livelihoods in Nepal, and considerations of a Just Transition should underpin the process of implementing a green recovery.

Reference: Central Bureau of Statistics, 2019

1. ADAPTATION

ADDRESSING AND REDUCING VULNERABILITY TO CLIMATE CHANGE



PARIS AGREEMENT Increase the ability to adapt to the adverse effects of climate change and foster climate resilience and low-GHG development.



VULNERABLE TO CLIMATE CHANGE

Nepal ranked 9th most affected country on the Climate Risk Index for 1999-2018.



MORE NATURAL DISASTERS

More than 80% of disasters are a result of droughts, floods, landslides, extreme temperatures and Glacial Lake Outbreak Floods.



LARGE ANNUAL ECONOMIC LOSSES

From 1998-2017, Nepal reported 235 annual average fatalities related to climate change, equating to an annual average loss of USD 230.83m.

ADAPTATION NEEDS

Climate Risk Index

Impacts of extreme weather events in terms of fatalities and economic losses that occurred. All numbers are averages (1998-2017).

Annual weather-related fatalities



Source: Germanwatch, 2019

Annual average losses (USD mn PPP)



Source: Germanwatch, 2019

CORONAVIRUS RECOVERY

The impacts of COVID-19 on the economy and mobility may hinder Nepal's response to climate change. The government leads the pandemic response but capacity is stretched, requiring international support. The revised COVID recovery plan is prepared by the Humanitarian Country Team, in collaboration with the government. The response plan includes a significant health component, highlighting needs around coordination planning and monitoring, protection, risk communication and community engagement, food security, water, sanitation and hygiene nutrition, education, shelter and logistics.

ADAPTATION POLICIES

National Adaptation Strategies

Document name	Publication year	Fields of action (sectors)											M&E process		
		Agriculture	Biodiversity	Coastal areas and fishing	Education and research	Energy and industry	Finance and insurance	Forestry	Health	Infrastructure	Tourism	Transport		Urbanism	Water
Nepal Climate Change Policy 2019	2011	●	●		●	●	●	●	●	●	●	●	●	●	n/a

Other relevant adaptation policies: National Adaptation Programme of Action (2010), Local Adaptation Plans for Action Framework (2019), Climate Change and Gender Strategy and Action Plan 2020-2030, National Adaptation Plan (NAP) (forthcoming).

Nationally Determined Contribution (NDC): Adaptation

Targets	Actions
Not mentioned	<p>A National Adaptation Plan will be formulated in 2021 and updated every 10 years.</p> <ol style="list-style-type: none"> 1. Vulnerability and risk assessment will be carried out every five years. 2. Climate-resilient and gender-responsive adaptation plans will be prepared and implemented in all 753 local governments by 2030. 3. A strategy and action plan on gender-responsive climate-smart technologies and practices will be prepared and implemented by 2030. 4. The climate-sensitive disease surveillance system will be strengthened by 2025. 5. Public weather services will be strengthened and established. 6. A multi-hazard monitoring and early warning system covering all seven provinces will be established by 2030. 7. A climate finance strategy will be formulated by 2022.

Reference: Government of Nepal, 2020

2. MITIGATION

REDUCING EMISSIONS TO LIMIT GLOBAL TEMPERATURE INCREASE

PARIS AGREEMENT Hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit to 1.5°C, recognising that this would significantly reduce the risks and impacts of climate change.

EMISSIONS OVERVIEW

CO₂ ↓
DECREASE EMISSIONS

Nepal's GHG emissions have increased by 81% in 27 years from a low base in 1990 to 42 MtCO₂e in 2017. Projections show that implementation of Nepal's current policies would keep its emissions aligned to a 1.5 compatible range.

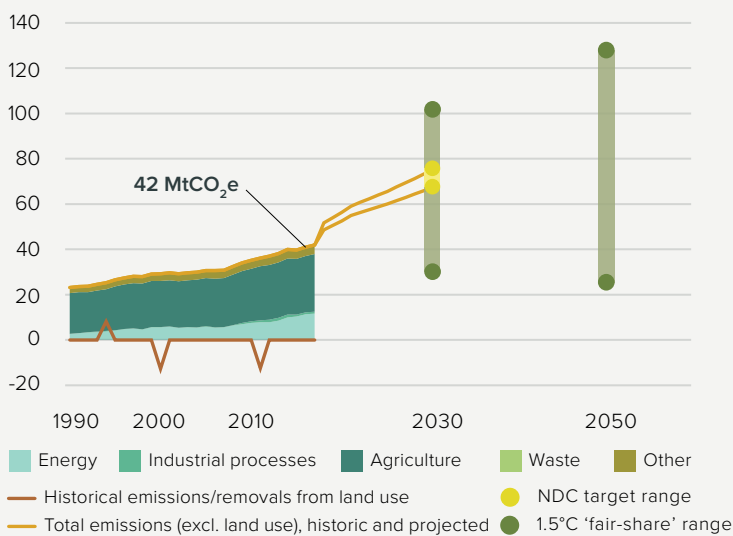
1.5°C
COMPATIBILITY

In 2030, global CO₂ emissions need to be 45% below 2010 levels and reach net zero by 2050. Global energy-related CO₂ emissions must be cut by 40% below 2010 levels by 2030 and reach net zero by 2060.

Source: Rogelj et al., 2018

GHG emissions across sectors and CAT 1.5°C 'fair-share' range (MtCO₂e/year)³

Total GHG emissions across sectors (MtCO₂e/year)



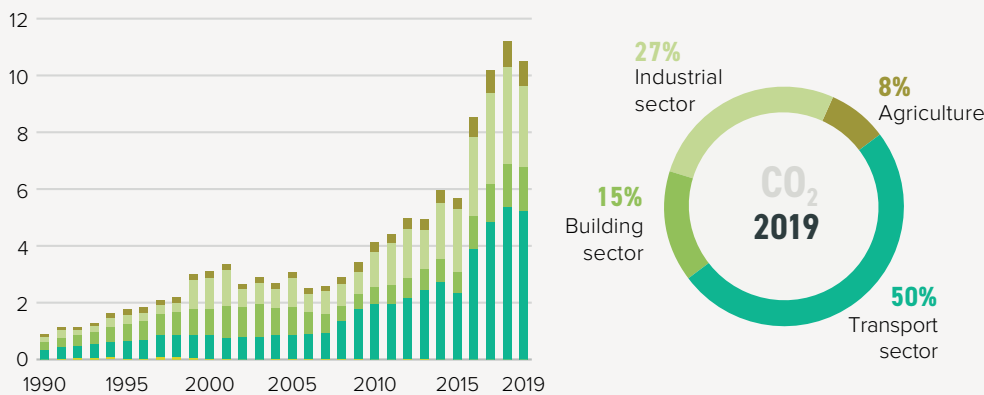
Nepal's emissions (excl. land use) have increased by 81% between 1990 and 2017 to 42 MtCO₂e. When considered by category, the biggest increase by far is in the agriculture and energy sectors. The AFOLU sector contributes more than 80% of the total GHG emissions in Nepal followed by the energy, transport, waste and industrial processes sectors.

Nepal's 2020 sectoral NDC targets have been conservatively estimated to reduce emissions by 1.9-5.6 MtCO₂e/yr leading to emissions of 69-76 MtCO₂e/yr by 2030 (excl. land use). This does not take into account land use – a substantial sink for the country. The emissions range estimated for Nepal's conditional target is 1.5°C compatible and within its 'fair-share' range. The conditionality of its target, however, renders its NDC only 2°C compatible indicating that the country should receive international support to further reduce the emissions gap.

Source: Climate Action Tracker, 2019; Gütschow et al., 2019; Pradhan et al., 2017

Energy-related CO₂ emissions by sector

Annual CO₂ emissions from fuel combustion (MtCO₂/year)



The largest driver of overall GHG emissions are CO₂ emissions from fuel combustion. In Nepal, energy-related CO₂ emissions from the transport sector are the largest contributor at 50%, followed by the industrial and building sectors with 27% and 15% respectively.

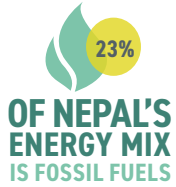
Source: Enerdata, 2020

CORONAVIRUS RECOVERY

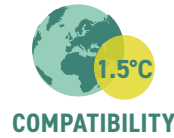
The government's COVID-19 response has so far not considered green recovery. The impacts of COVID-19 on the economy and mobility may, however, hinder mitigation-related projects and programmes. By shutting down the economy, the pandemic has unsustainably reduced emissions, with the most recent Climate Action Tracker assessment showing that emissions in 2020 would be 0.7-2.4% lower than in 2019. Nepal has not yet put in place any recovery measures which could be considered either high or low carbon measures.

Reference: Climate Action Tracker, 2020

ENERGY OVERVIEW



Fossil fuels make up 23% of Nepal's energy mix, and biomass accounts for 72%. As the share of renewables grows and electrification of end-sectors increases, the carbon intensity of the energy sector is expected to decline.

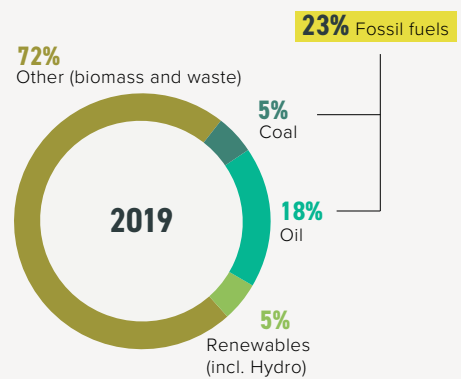
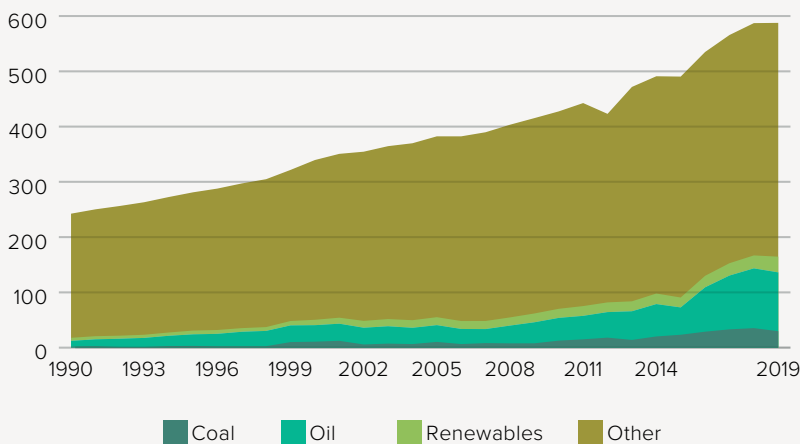


The share of **fossil fuels globally needs to fall to 67% of global total primary energy by 2030 and to 33% by 2050**, and to substantially lower levels without Carbon Capture and Storage.

Source: Rogelj et al., 2018

Energy Mix

Total primary energy supply (PJ)



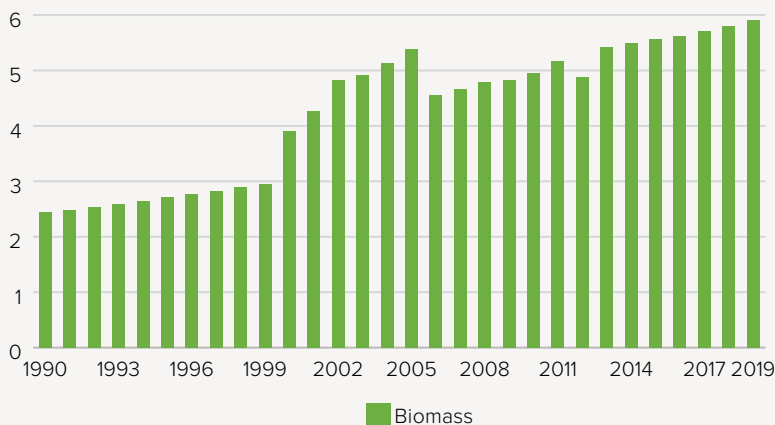
Data for 2018. Source: Enerdata, 2020

Due to rounding, some graphs may sum to slightly above or below 100%.

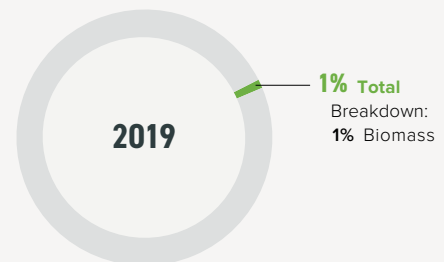
This graph shows the fuel mix for energy supply in Nepal, including energy used for electricity generation, heating, cooking, and transportation up to 2019. Residential biomass and waste combustion used for cooking and heating, especially in the rural areas— together account for 72% of Nepal's energy mix. Oil and coal account for 23% of this share. Renewables, almost exclusively hydro, make up only 5% of the energy mix.

Solar, Wind, Geothermal, and Biomass Development

Total primary energy supply (TPES) from solar, wind, geothermal and biomass (PJ)



Solar, wind, geothermal and biomass account for 1% of the Nepalese energy supply



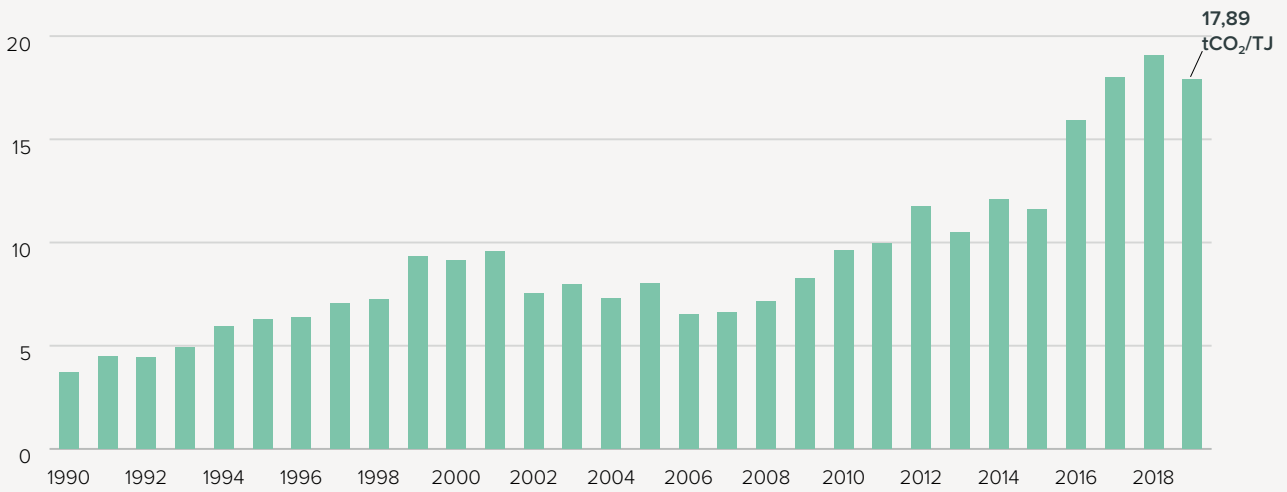
Source: Enerdata, 2020

Large hydropower and solid fuel biomass in residential use are not reflected due to their negative environmental and social impacts. Due to rounding, some graphs may sum to slightly above or below 100%.

Energy generation from non-residential biomass accounts for 1% of Nepal's energy. The share of renewables other than large hydropower and residential biomass in total energy supply combustion decreased by 13% between 2013-2018. Nepal has some solar (not reflected in the data to 2019). The Nuwakot Solar Power Station and Butwal Solar PV Project partially came online in 2020 – but neither runs at full capacity. The Mithila 2 Solar PV Station will come online in 2021.

Carbon Intensity of the Energy Sector

Tonnes of CO₂ per unit of total primary energy supply (tCO₂/TJ)



Source: Enerdata, 2020

Carbon intensity shows how much CO₂ is emitted per unit of energy supply. In Nepal, carbon intensity has increased steadily since 1990. This level reflects the continuously high share of biomass and fossil fuels in the energy supply.

Source: Enerdata, 2020

Energy supply per capita

21
GJ/capita

Data for 2019. Sources: Enerdata, 2020; The World Bank, 2019

TPES per capita
(GJ/capita):
5-year trend
(2014-2019)

 **+16.1%**

The level of energy use per capita is closely-related to economic development, climatic conditions and the price of energy. Energy use per capita in Nepal is 21 GJ/capita, and has increased 16.1% between 2014-2019 from a low base.

Energy intensity of the economy

 **6.02**
TJ/PPP USD2015 millions

Data for 2018. Sources: Enerdata, 2020; The World Bank, 2018

Energy intensity
of the economy:
5-year trend
(2013-2018)

 **+0.7%**

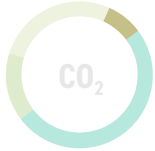
This indicator quantifies how much energy is used for each unit of GDP. This is closely related to the level of industrialisation, efficiency achievements, climatic conditions or geography. Nepal's economy has become slightly more energy intensive over the five-year period to 2018.



POWER SECTOR

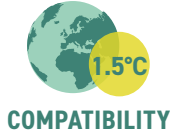
Emissions from energy used to make electricity and heat

Nepal does not produce electricity from fossil fuels. While close to all electricity in the country is from renewable sources, some fossil fuel-generated electricity is imported from India.



Electricity has 0% share in energy-related CO₂ emissions.

Source: Enerdata, 2020



Coal and decarbonisation

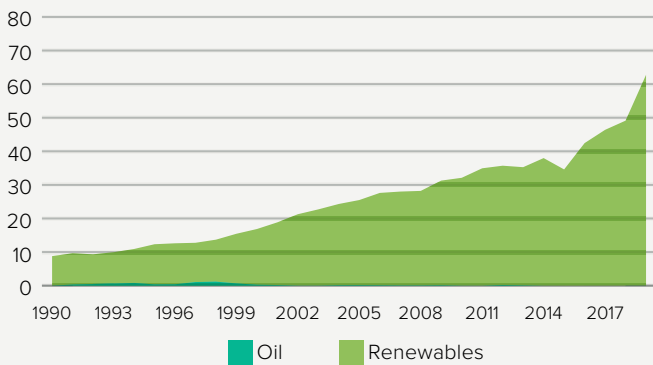
Worldwide, **coal use for power generation needs to peak by 2020** and between 2030 and 2040, all the regions of the world need to phase out coal-fired power generation. **Electricity generation has to be decarbonised before 2050**, with renewable energy the most promising alternative.

Sources: Climate Analytics, 2016; Climate Analytics, 2019; Rogelj et al., 2018

STATUS OF DECARBONISATION

Electricity mix

Gross power generation (TWh)



Source: Enerdata, 2020



100% Renewables
Breakdown:
99.8% Hydro
0.2% Wind onshore

Due to rounding, some graphs may sum to slightly above or below 100%.

Nepal produces all its electricity using renewables. Hydro dominates at 99.8%, followed by small amounts of solar and wind.

Share of renewables in power generation

(incl. large hydro)

100%

Share of renewables in power generation: 5-year trend (2014-2019)

The share of renewables over 5 years has remained 100% thus there is no change in the trend.

Source: Enerdata, 2020

Emissions intensity of the power sector

0
gCO₂/kWh

Emissions
intensity:
5-year trend
(2014-2019)

 0%

Source: Enerdata, 2020

For each kilowatt hour of electricity produced in Nepal, 0 gCO₂ is emitted.

POLICY ASSESSMENT

Renewable energy in the power sector



Power generated in Nepal comes almost completely from hydropower sources and will continue to do so in the future. In its 2020 NDC, the government aims to increase clean energy generation from approximately 1,400 MW to 15,000 MW, of which 5-10% will be generated from mini and micro-hydropower, solar, wind and bio-energy (only 5,000 MW are not conditional on provision of international support). The country imports some fossil-fuel generated electricity from India. However, as more hydropower plants come online, this share is decreasing.

Reference: own evaluation based on Government of Nepal, 2020

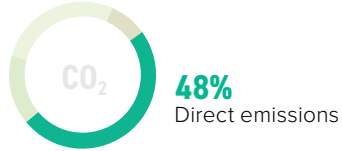


TRANSPORT SECTOR

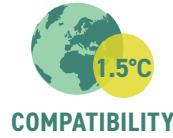
Emissions from energy used to transport people and goods

Nepal's vehicle fleet is rapidly increasing and is almost exclusively reliant on petroleum products. Electric vehicles currently account for only about 1%. However, as the country's renewable electricity generation capacity increases, it aims to promote electrification of its end-use sectors, including the transportation sector.

Domestic share in energy-related CO₂ emissions from transport sector.



Source: Enerdata, 2020



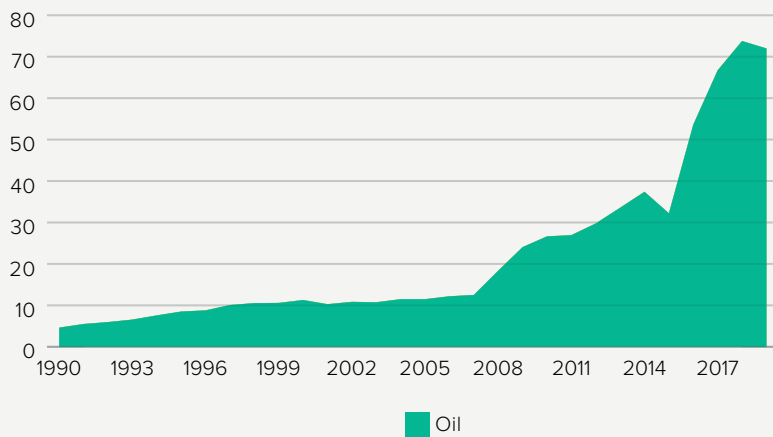
The global share of low-carbon fuels in the transport fuel mix must increase to about 60% by 2050.

Source: Rogelj et al., 2018

STATUS OF DECARBONISATION

Transport energy mix

Final energy consumption of transport by source (PJ/year)



Source: Enerdata, 2020

Due to rounding, some graphs may sum to slightly above or below 100%.

Nepal's transport sector is driven almost entirely by oil at 99.99%. Electricity provides a miniscule 0.01% of this sector's energy consumption.

Transport emissions per capita

excl. aviation (tCO₂/capita)



0.19
tCO₂/capita

Transport emissions: 5-year trend (2013-2018)



+123%

Data for 2018. Source: Enerdata, 2020

Aviation emissions per capita⁶



Aviation emissions:
5-year trend
(2012-2017)



Data for 2017. Source: Enerdata, 2020

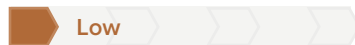
POLICY ASSESSMENT

Phase out fossil fuel cars



According to Nepal's 2020 NDC, sales of electric vehicles will cover 90% of all private passenger vehicle sales (including two-wheelers) and 60% of all four-wheeler public passenger vehicle sales by 2030 (100% by 2035 would be 1.5°C compatible). The current share of electric vehicles is approximately 1%. Tax incentives to improve market penetration of electric vehicles, scaling up the construction of charging infrastructure, and upgrading the existing power transmission and distribution lines are needed.

Phase out fossil fuel heavy-duty vehicles



Nepal has no plans to phase out fossil fuel-based heavy-duty vehicles. The emission standard only applies to light-duty vehicles.

Modal shift in (ground) transport



Nepal's topography and exposure to climate change risks plus a lack of technical expertise, policy, legal or operational standards for the construction and operation of rail transport, make the introduction of a railway network challenging. Nevertheless, the 2020 NDC aims to develop 200 km of electric railway to support public commuting and mass transportation of goods.

Nepal's Fifteenth Plan (FY 2019/20-2023/24) envisions scaling up railway tracks from 42 km in fiscal year 2018/2019 to 348 km by 2023/2024, which would connect multiple existing sections of railway to the planned East-West Railway.

Nepal further aims to increase electric public transport and the building of bicycle and pedestrian lanes.

References: Government of Nepal, 2020; National Planning Commission, 2020.

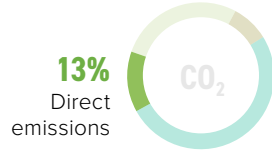


BUILDING SECTOR

Emissions from energy used to build, heat and cool buildings

Nepal's direct building emissions - counting heating, cooking but not electricity use – make up 13% of total energy-related emissions.

Building emissions can occur directly (burning fuels for heating, cooking, etc) and indirectly (grid-electricity for air conditioning, appliances, etc). Nepal's electricity produces no energy-related CO₂ emissions.



Data for 2018. Source: Enerdata, 2020



Global emissions from buildings need to be halved by 2030, and be at 80-85% below 2010 levels by 2050, mostly through increased efficiency, reduced energy demand and electrification in conjunction with a complete decarbonisation of the power sector.

Source: Rogelj et al., 2018

STATUS OF DECARBONISATION

Building emissions per capita

(incl. indirect emissions)



Building emissions: 5-year trend (2014-2019)



+95.8%

Building-related emissions per capita reflect climatic conditions and also the ratio of square footage per person. Nepal's buildings emissions have increased 95.8% in the five years from 2014 to 2019, but from a very low base.

Source: Enerdata, 2020

POLICY ASSESSMENT

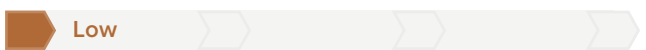
Near zero energy new buildings



While the National Urban Development Strategy (2017) outlined plans to prepare models and guidelines for the energy efficient construction of buildings, **Nepal has no building energy codes or standards as of 2020**. As building emissions grew by 96% from 2014-2019 and will likely continue, a building code should be an opportunity.

References: own evaluation based on Government of Nepal, 2020; Ministry of Urban Development, 2017

Renovation of existing buildings



Nepal has no incentives nor strategy for the renovation of buildings. In its 2020 NDC, the government aims to adopt national building codes by 2030 (conditional upon international support). It is unclear whether these would also apply to existing buildings.

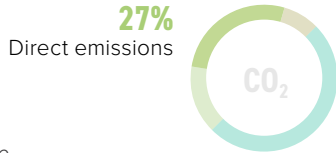
References: own evaluation based on Government of Nepal, 2020



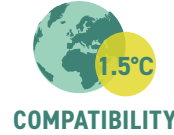
INDUSTRY SECTOR

Emissions from energy in the industrial sector

Industry-related emissions make up just over a quarter of energy-related CO₂ emissions in Nepal and these emissions have grown 24% between 2012-2017.



Data for 2018.
Source: Enerdata, 2020



Industrial emissions need to be reduced by 65-90% from 2010 levels by 2050.

Source: Rogelj et al., 2018

STATUS OF DECARBONISATION

Industry emissions intensity⁷



Data for 2017. Sources: Enerdata, 2020; Gütschow et al., 2019

Industry emissions:
5-year trend
(2012-2017)



Carbon intensity of cement production⁸ (kgCO₂/tonne product)



Data for 2016. Source: CAT Decarbonisation Data Portal, 2020

Carbon intensity of steel production⁸ (kgCO₂/tonne product)



Steel production and steelmaking are significant GHG emission sources and challenging to decarbonise

Data for 2016. Source: World Steel Association, 2018

POLICY ASSESSMENT

Energy Efficiency

Nepal's National Energy Efficiency Strategy (2018) aims to double the average improvement rate of energy efficiency from 0.84% per year to 1.68% per year by 2030. While an industry-specific target does not exist, the strategy strives to promote

the use of energy efficient equipment and to conduct energy audits in the industrial sector. The Industrial Enterprises Act (2020) includes tax deductions for enterprises investing in energy efficient equipment.

References: own evaluation based on Ministry of Energy, Water Resources and Irrigation, 2018; Ministry of Industry Trade and Commerce, 2020

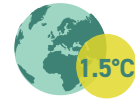


LAND USE SECTOR

Emissions from changes in the use of the land



Nepal maintains around 40% of its land as forests – a substantial sink for its emissions. Community forests in Nepal are well-known for their participatory management practices that improve forest protection and regeneration. To stay within the 1.5°C limit, Nepal needs to improve management in its other forests and expand forest area, where possible. It also needs to curtail illegal logging, encroachment, and road construction.



COMPATIBILITY

Global deforestation needs to be halted and changed to net CO₂ removals by around 2030.

Source: Rogelj et al., 2018

Global tree-cover loss

No data available

Please note that the format of these profiles is to use a common source of data for each indicator. For this indicator we use “Annual tree-cover loss by dominant driver” from the World Resources Institute’s Global Forest Watch online tool.

Our Nepal country analysts (at Climate Analytics) did not think that this source provided an accurate picture of tree-cover loss in Nepal – hence the statement above

POLICY ASSESSMENT

Target for net-zero deforestation



In its 2020 NDC, Nepal aims to maintain 45% of the total area of the country under forest cover by 2030 (including other wooded land limited to less than 4%). Current forest cover is approximately 44.74% of which 4.38% is other wooded land. Nepal also aims to sustainably manage a significant portion of its forest area. The country currently implements its REDD+ strategy which was developed in 2018.

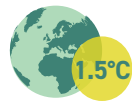


AGRICULTURE SECTOR

Emissions from agriculture



Nepal’s agricultural emissions are mainly from digestive processes in animals, livestock manure, and rice cultivation. Agriculture, a prominent sector in the country’s economy, employs mostly rural smallholder farmers practicing subsistence agriculture.

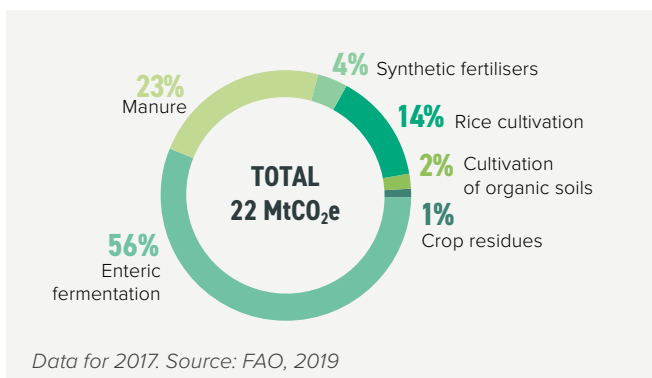


COMPATIBILITY

Methane emissions (mainly enteric fermentation) need to decline to 10% by 2030 and by 35% by 2050 (from 2010 levels). Nitrous oxide emissions (mainly from fertilisers and manure) need to be reduced by 10% by 2030 and by 20% by 2050 (from 2010 levels).

Source: Rogelj et al., 2018

Emissions from agriculture (excluding energy)



In Nepal, the largest sources of GHG emissions in the agricultural sector are digestive processes in animals (56%), livestock manure (23%), and rice cultivation (14%). A shift to organic farming and more efficient use of fertilisers – which are energy and water intensive to produce – can help reduce emissions.

Due to rounding, some graphs may sum to slightly above or below 100%.

MITIGATION: TARGETS AND AMBITION

The combined mitigation effect of nationally determined contributions (NDC) submitted by September 2020 is not sufficient and will lead to a warming of 2.7°C by the end of the century. This highlights the urgent need for all countries to submit more ambitious targets by 2020, as they agreed in 2015, and to urgently strengthen their climate action to align to the Paris Agreement's temperature goal.

AMBITION: 2030 TARGETS

Nationally Determined Contribution (NDC): Mitigation

Targets

Nepal's 2020 NDC has emissions reduction targets in some key sub-sectors. The CAT conservatively estimates that through NDC implementation Nepal will reduce its total emissions by 1.9 to 5.6 MtCO₂e/yr by 2030.

Actions

A range of policy measures have been provided for key sectors.

Reference: Government of Nepal, 2020.

Climate Action Tracker (CAT) evaluation of NDC and actions

	Critically Insufficient
	Highly Insufficient
	Insufficient
●	2°C Compatible
	1.5°C Compatible
	Role Model

NDCs with this rating are consistent with the 2009 Copenhagen 2°C goal and therefore fall within a country's "fair-share" range, but are not fully consistent with the Paris Agreement long-term temperature goal. If all government NDCs were in this range, warming could be held below, but not well below, 2°C and still be too high to be consistent with the Paris Agreement 1.5°C limit.

Nepal submitted its second NDC on December 8, 2020, strengthening the country's 2030 targets and transparency, as well as including more quantifiable targets, broader sectoral coverage and a reference to a net zero target. Based on the information provided, the NDC target is rated "2°C compatible". The NDC target would be "1.5°C 'fair-share' compatible" if it were unconditional.

TRANSPARENCY: FACILITATING AMBITION

Countries are expected to communicate their NDCs in a clear and transparent manner in order to ensure accountability and comparability.

The NDC Transparency Check has been developed in response to Paris Agreement decision (1/CP.21) and the Annex to decision 4/CMA.1. While the Annex is only binding from the second NDC onwards, countries are "strongly encouraged" to apply it to updated NDCs, due in 2020.



NDC Transparency Check recommendations

For more visit www.climate-transparency.org/ndc-transparency-check

Nepal's NDC has not been assessed using the NDC Transparency Check tool.

AMBITION: LONG-TERM STRATEGIES

Status	Nepal will develop and submit a "Long-term Low GHG Emission Development Strategy" by 2021.
2050 target	Net-zero GHG emissions
Interim steps	Strategy not published at time of print
Sectoral targets	Strategy not published at time of print
Net-Zero target	Yes
Net-Zero year	n.a.

The Paris Agreement invites countries to communicate mid-century, long-term, and low GHG emissions development strategies by 2020. Long-term strategies are an essential component of the transition toward net-zero emissions and climate-resilient economies.

3. FINANCE

MAKING FINANCE FLOWS CONSISTENT WITH CLIMATE GOALS



Make finance flows consistent with a pathway towards low-GHG emissions and climate-resilient development.



Nepal's total LPG consumption subsidy was USD 40-48m for 2019, but has no explicit carbon price.



Investment in green energy and infrastructure needs to outweigh fossil fuel investments by 2025.

Source: Rogelj et al., 2018

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 the price.

The IEA does not include Nepal in its fossil fuel consumption dataset.

The government built 69.5 km of petroleum pipeline from Motihari (Bihar) of India to Amlekhganj (Bara) of Nepal under the G2G agreement between Government of Nepal and Government of India. The project, intended to facilitate petroleum product imports was inaugurated in September 2019 and had a total cost of NRs 4.4bn (USD 39m), of which 27.27% (USD 10.7m) is on Nepal and the rest is the investment from the Government of India.

On the consumption side, until 2014, Nepali state-owned enterprise Nepal Oil Corporation (NOC) incurred losses on petroleum fuel sales almost annually, which was paid/subsidised by the Government of Nepal. In 2014, NOC adopted an automated market-based pricing system, which stopped annual losses from petrol and diesel from incurring. But NOC still makes a loss on LPG cylinders so this can be considered

as cross-subsidy from the government to the LPG. LPG is mainly used in Nepal for cooking purposes, and NOC (sole importer and distributor of petroleum products in the country) has been reporting monthly losses fluctuating between NRs 380m to NRs 450m, depending on the price imposed by the Indian Oil Corporation (the sole fuel products supplier in Nepal). This amounted to a total LPG consumption subsidy of USD 40-48m for 2019. Early in 2020, though, the Nepali government announced its intentions to remove the LPG subsidy and turn it into an electricity subsidy to compensate for the expected increase in gas prices, as well as to distribute 10,000 induction stoves to households at subsidised rates.

Nepal is a non-reporting jurisdictions with respect to tax expenditure (revenue foregone) data. This lack of transparency makes it impossible to estimate the extent of public support directed to fossil fuels in the form of favourable tax treatments.

Sources: Government of Nepal, 2019; IEA, 2021; Poudel, 2020; Redonda et al., 2021

Carbon pricing and revenue

No explicit carbon pricing is applied in Nepal, nor is any currently under consideration. However, in 2007/2008 the Government of Nepal introduced a pollution tax on petrol and diesel; in 2020, the tax has been raised from NRs 0.5 (0.4 USD cents**) to NRs 1.50 (1.2 USD cents) per litre of diesel and petrol. In the fiscal year 2019/2020, Nepali consumers have paid a total of NRs 2.97bn (USD 25m) in pollution tax.

Source: New Business Age, 2021

* An exchange rate of 0.0089 was used for all 2019 calculations to convert Nepali NRs into USD (<https://www.poundsterlinglive.com/best-exchange-rates/us-dollar-to-nepalese-rupee-exchange-rate-on-2019-12-31>)

** An exchange rate of 0.0085 was used for the 2020 calculations to convert Nepali NRs into USD (<https://www.poundsterlinglive.com/best-exchange-rates/best-us-dollar-to-nepalese-rupee-history-2020>)

🔧 CORONAVIRUS RECOVERY

No COVID-19 recovery stimulus packages have been introduced in the country. The budget for fiscal year 2021/2022 has increased allocation for the health sector by 35%, which may shift priorities from other sectors including environmental protection. The 2021/22 budget introduces a few individual financial relief measures to support informal sector workers, small and medium-sized enterprises, and the tourism sector, including subsidies on income tax. Households also get subsidised access to electricity and drinking water. These measures have no green recovery components. However, they also rely on fossil fuels.

PUBLIC FINANCE

Governments steer investments through their public finance institutions, including via development banks, both at home and overseas, and green investment banks. Developed countries also have an obligation to provide finance to developing countries and public sources are a key aspect of these obligations under the UNFCCC. **Nepal** introduced a climate change budget code in 2012 that enables ministries to prioritise and track activities reducing climate change impacts, with increasing budgets. The Ministry of Finance also introduced the Climate Change Financing Framework in 2017 in order to plan and manage climate finance and track its expenditure.

Source: *International Institute for Environment and Development, 2014*

FINANCIAL POLICY AND REGULATION**Financial policy and regulation**

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

Nepal released the “Guideline on Environmental and Social Risk Management (ESRM) for Banks and Financial Institutions” on May 28, 2018. The ESRM guidelines launched by Nepal Rastra Bank (NRB) set down standards for the identification, assessment, and management of environmental and social risks. Among others, the guidelines also provide a reporting template for all banks to report to NRB on sustainability performance and include coal-fired power plants in its exclusions list. NRB started its journey towards a sustainable banking system in 2014 when it joined the IFC-supported Sustainable Banking Network (SBN). The ESRM guidelines have been drafted by experts at IFC and NRB using global standards, including IFC’s Performance Standards and Equator Principles, and finalised through a long process of consultations with bankers’ associations and development partners.

Sources: *D’Orazio and Popoyan, 2019; Nepal Rastra Bank, 2018*

Nationally Determined Contribution (NDC): Finance

Conditionality	Yes
Investment needs	USD 3.4 million domestic investments (unconditional), USD 25 million international investment estimated to achieve Nepal’s NDC targets
Actions	Not mentioned
International market mechanisms	No contribution from international credits for the achievement of the target

ENDNOTES





For more detail on the sources and methodologies behind the calculation of the indicators displayed, please download the Technical Note at: www.climate-transparency.org/g20-climate-performance/g20report2020

- 'Land use' emissions is used here to refer to land use, land use change and forestry (LULUCF). The Climate Action Tracker (CAT) derives historical LULUCF emissions from the UNFCCC Common Reporting Format (CRF) reporting tables data converted to the categories from the IPCC 1996 guidelines, in particular separating Agriculture from LULUCF, which under the new IPCC 2006 Guidelines is integrated into Agriculture, Forestry, and Other Land Use (AFOLU).
- The 1.5°C fair-share ranges for 2030 and 2050 are drawn from the CAT, which compiles a wide range of perspectives on what is considered fair, including considerations such as responsibility, capability, and equality. Countries with 1.5°C 'fair-share' ranges reaching below zero,

particularly between 2030 and 2050, are expected to achieve such strong reductions by domestic emissions reductions, supplemented by contributions to global emissions reduction efforts via, for example, international finance. On a global scale, negative emissions technologies are expected to play a role from the 2030s onwards, compensating for remaining positive emissions. The CAT's evaluation of NDCs shows the resulting temperature outcomes if all other governments were to put forward emissions reduction commitments with the same relative ambition level.

- In order to maintain comparability across all countries, this report utilises the PRIMAP year of 2017. However, note that Common Reporting Format (CRF) data is available for countries which have recently updated GHG inventories.
- The Decarbonisation ratings appear only in the CTR profiles for the G20 countries, on which this profile is based.

- The selection of policies rated and the assessment of 1.5°C compatibility are informed by the Paris Agreement, the IPCC's 2018 SR15 and the Climate Action Tracker (2016). The table below displays the criteria used to assess a country's policy performance.
- This indicator adds up emissions from domestic aviation and international aviation bunkers in the respective country. In this Country Profile, however, only a radiative forcing factor of 1 is assumed.
- This indicator includes only direct energy-related emissions and process emissions (Scope 1) but not indirect emissions from electricity.
- This indicator includes emissions from electricity (Scope 2) as well as direct energy-related emissions and process emissions (Scope 1).

On endnote 5.	 Low	 Medium	 High	 Frontrunner
Renewable energy in power sector	No policies to increase the share of renewables	Some policies	Policies and longer-term strategy/target to significantly increase the share of renewables	Short-term policies + long-term strategy for 100% renewables in the power sector by 2050 in place
Coal phase-out in power sector	No targets or policies in place for reducing coal	Some policies	Policies + coal phase-out decided	Policies + coal phase-out date before 2030 (OECD and EU28) or 2040 (rest of the world)
Phase out fossil fuel cars	No policies for reducing emissions from light-duty vehicles	Some policies (e.g. energy/emissions performance standards or bonus/malus support)	Policies + national target to phase out fossil fuel light-duty vehicles	Policies + ban on new fossil-based light-duty vehicles by 2035 worldwide
Phase out fossil fuel heavy-duty vehicles	No policies	Some policies (e.g. energy/emissions performance standards or support)	Policies + strategy to reduce absolute emissions from freight transport	Policies + innovation strategy to phase out emissions from freight transport by 2050
Modal shift in (ground) transport	No policies	Some policies (e.g. support programmes to shift to rail or non-motorised transport)	Policies + longer-term strategy	Policies + longer-term strategy consistent with 1.5°C pathway
Near zero energy new buildings	No policies	Some policies (e.g. building codes, standards or fiscal/financial incentives for low-emissions options)	Policies + national strategy for near zero energy new buildings	Policies + national strategy for all new buildings to be near zero energy by 2020 (OECD countries) or 2025 (non-OECD countries)
Energy efficiency in Industry	0-49% average score on the policy-related metrics in the ACEEE's International Energy Efficiency Scorecard	50-79% average score on the policy-related metrics in the ACEEE's International Energy Efficiency Scorecard	80-89% average score on the policy-related metrics in the ACEEE's International Energy Efficiency Scorecard	Over 90% average score on the policy-related metrics in the ACEEE's International Energy Efficiency Scorecard
Retrofitting existing buildings	No policies	Some policies (e.g. building codes, standards or fiscal/financial incentives for low-emissions options)	Policies + retrofitting strategy	Policies + strategy to achieve deep renovation rates of 5% annually (OECD) or 3% (non-OECD) by 2020
Net-zero deforestation	No policies or incentives to reduce deforestation in place	Some policies (e.g. incentives to reduce deforestation or support schemes for afforestation / reforestation in place)	Policies + national target for reaching net-zero deforestation	Policies + national target for reaching zero deforestation by 2020s or for increasing forest coverage

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