GHG mitigation policies in major emitting countries: an overview of recently adopted policies

June 2019 update

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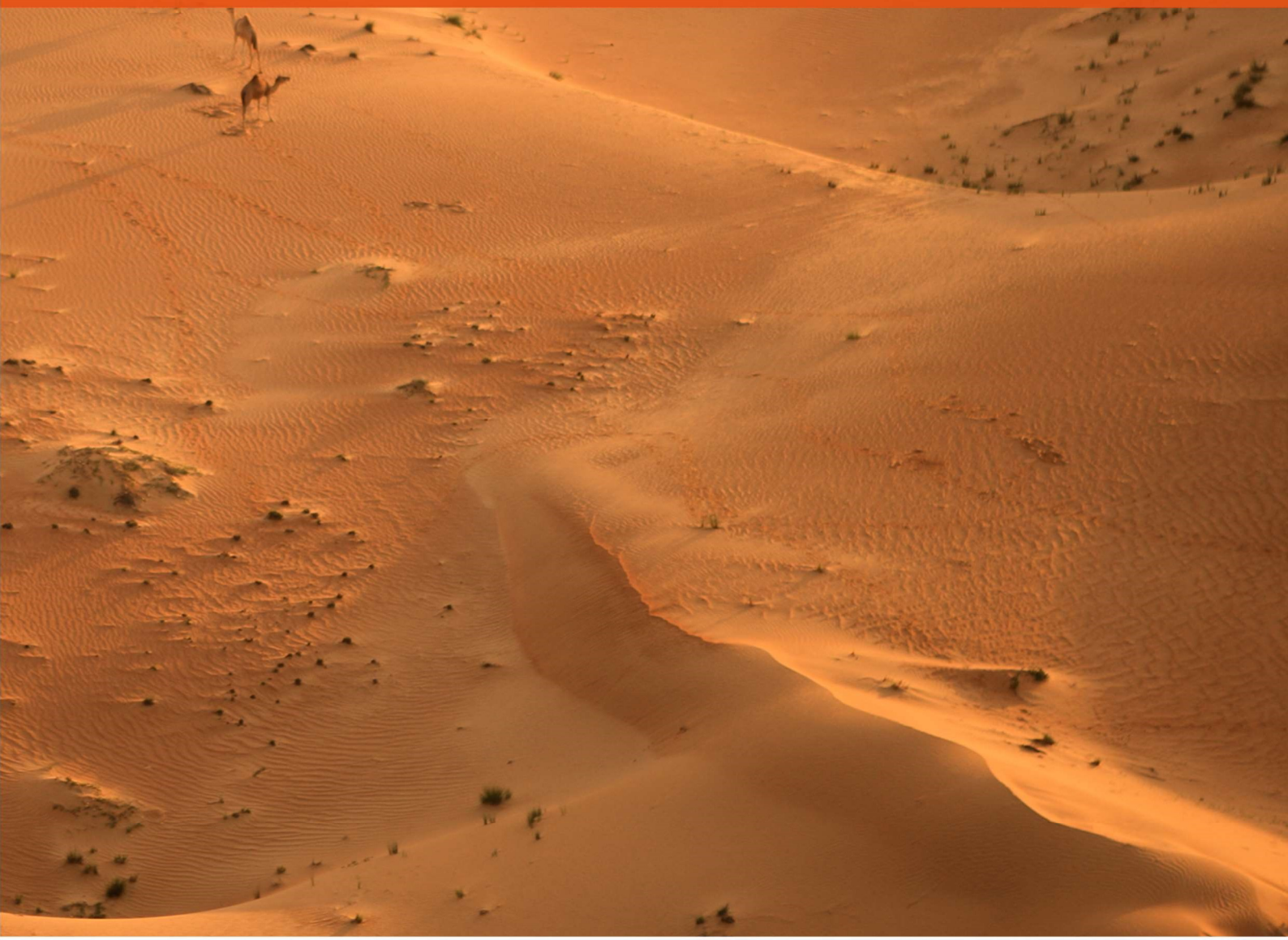

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Key Messages

This document provides an overview of about 50 policies that were adopted or under development between July 2018 and May 2019 in 25 selected countries and that may have significant impact on greenhouse gas (GHG) emissions. NewClimate Institute, PBL and IIASA have been tracking progress of climate change mitigation action in these 25 countries since 2016 (Kuramochi et al., 2016), and in a subgroup of 13 countries (Australia, Brazil, Canada, China, European Union, India, Indonesia, Japan, Mexico, Russia, South Korea, Turkey, and the United States) since 2015 (den Elzen et al., 2015).

Main policy activity was observed in the energy sector (29 entries), followed by the transport sector (six entries), forestry (six), industry and industrial processes (two), and agriculture and waste sectors (two). There were also seven entries on cross-sectoral policies.

While most policy developments are expected to contribute to GHG emissions reductions, the document also identified policies that are expected to increase GHG emissions in two countries (expansion of fossil fuel exploration in Argentina and several proposed rollbacks of legislations and regulations set under the previous administration in the United States).

Countries are also formulating or have already submitted their long-term GHG emissions development strategies. Of the 25 countries assessed, four have submitted their long-term strategies to the UNFCCC and five have developed drafts or domestically adopted strategies.

1 Introduction

This document presents an overview of climate and energy policies mostly adopted between July 2018 and May 2019 in 25 countries and regions. The policy information compiled by NewClimate Institute, PBL and IIASA in this document supplements the December 2018 report on the projected greenhouse gas (GHG) emissions under currently implemented policies and mitigation commitments (Kuramochi et al., 2018). The overview table in Section 2 provides not only the qualitative descriptions of policies but also their possible implications on GHG emissions projections in 2030 whenever available.

The 25 countries and regions assessed in this document are: Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Democratic Republic of the Congo (DRC), Ethiopia, the European Union (EU), India, Indonesia, Japan, Kazakhstan, Mexico, Morocco, the Philippines, Republic of Korea, the Russian Federation, South Africa, Saudi Arabia, Thailand, Turkey, Ukraine, and the United States. These 25 countries and regions cover all of the G20 countries (excluding the four individual EU member states) and comprised about 80% of total global GHG emissions (excluding LULUCF) in 2017 (Olivier & Peters, 2018).[1]

The adopted policies presented in this document are mainly legislative decisions, executive orders, or their equivalent. Policy targets and strategies presented include those adopted by the parliament or the Cabinet in respective countries but exclude those only announced by e.g. ministers. We further only include the measures that have direct effect on reducing GHG emissions, and thus do not include all supporting policies or policy instruments, such as regulation on monitoring and reporting emissions, or sector-specific supporting policies.

This document also presents, whenever appropriate and relevant, draft legislations that are likely to be adopted as well as the development status of proposed policies that may have significant impact on future GHG emissions; these policies are presented with a tag: “[Under development]”. Sub-national (e.g. city- or region-level) targets and policies as well as action commitments by companies were not included as these are difficult to quantify in our frameworks, although these are important in countries such as Australia, Canada, and the United States. Similarly, for the EU, this document does not cover member state-level policies with an exception of coal power plant phase-out policies.

In addition to recently adopted and proposed policies, this document also presents an overview of mid-century, long-term low GHG emission development strategies (hereinafter, “long-term strategies”) submitted to the UNFCCC as of May 2019 (Section 3). Under the Paris Agreement, Parties are invited to submit their long-term strategies by 2020.

[1] The emissions data from the EDGAR database excludes short-cycle biomass burning (e.g. agricultural waste burning and Savannah burning) but includes other biomass burning (e.g. forest fires, post-burn decay, peat fires and decay of drained peatlands).

2 Overview of policies adopted between July 2018 and May 2019

Table 1: Overview of policies adopted or planned between July 2018 and May 2019. Information on draft legislations and other ongoing policy formulation processes are labelled with "[Under development]".

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Argentina	Energy	Continued efforts to expand gas exploration	The secretariat of energy is promoting the large-scale expansion of natural gas reserves in Argentina ("Vaca Muerta")	Unclear impact on GHG emissions.	(Secretaría de Energía Argentina, 2018)
	Energy	Auction scheme (November 2018)	In November 2018, Argentina announced a fourth round of auctions under the renewable energy (RE) support scheme RenovAr, focusing on small-scale renewables. The total volume auctioned is 400 MW.	No third-party estimates or projections available.	(Bellini, 2019)
	Forestry	Joint resolution 1/2018 creating the Environmental and Insurance Sustainability Program (September 2018)	A national "Green Insurance" program to promote both forestation and enrichment of the native forest with the aim of increasing forest plantations from 1.3 million hectares to 2 million hectares by 2030. To reach 2 million hectares by 2030 would mean expanding forested areas by 62,000 hectares per year.	This program is expected to absorb approximately 15.6 $MtCO_2e$. No third-party estimates or projections available.	(Eversheds Sutherland (US) LLP & Fratantoni, 2018; LSE Grantham Reseach Institute on Climate Change and the Environment, 2018; Ministry of Environment and Sustainable Development, 2018)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Argentina	Forestry	Extension and amendment of Law Nr 25,080 related to the investments for cultivated forests (December 2018)	The overall aim of this law is to increase the investments, area, and enhancement of the sustainable management of cultivated forests within the country. The law grants among other benefits, an annual non-refundable Economic Contribution to some 3,000 small and medium forest producers.	No third-party estimates or projections available.	(Pensamiento Civil, 2019)
Australia	Energy	Scrapping of National Energy Guarantee Plan (August 2018)	The National Energy Guarantee (NEG) used to contain mandatory GHG emission reductions for the power sector: 26% below 2005 levels by 2030.	The NEG was expected to lead to relatively small additional emission reductions (compared to the existing renewable energy target), so its scrapping is not expected to have a significant effect on emissions.	(AAP - SBS, 2018; Chang, 2018)
	Cross-cutting	Climate Solutions Fund (February 2019)	As part of the Climate Solutions Package, an investment of AUS$3.5 billion to meet the NDC target, the Climate Solutions Fund was established (formerly the Emissions Reduction Fund). The Government will provide $2 billion additional funding (initially proposed to last 10 years, but according to the latest budget, 15 years)	Some of the funds have been used for fossil fuel projects that would have been built anyway, so difficult to say what the additional emissions reduction impact would be.	(Australian Government Department of the Environment and Energy, 2019; Morton, 2019; Murphy, 2019a; Timperley, 2019)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Australia	Transport	[Under development] National Strategy for Electric Vehicles (proposed, February 2019)	Set up as part of the Climate Solutions Package, an investment of AUS$3.5 billion to meet the NDC target. No details about the strategy are available as of May 2019.	The strategy does not have quantified targets as of May 2019.	(Australian Government, 2019; Murphy, 2019b; Schmidt & Parkinson, 2019)
Brazil	No significant policy development noted				
Canada	Cross-cutting	Greenhouse Gas Pollution Pricing Act (adopted June 2018; pricing started January 2019)	Canadian provinces are required to implement carbon pricing or cap and trade systems, and otherwise are subject to a federal backstopping carbon price. The federal price on GHG emissions, starting at C$20/t$CO_2$e in 2019 and rising by C$10/t$CO_2$e per year until $50/t$CO_2$e in 2022, applies to provinces and territories that request it or have not implemented their own carbon pricing regime. The federal backstop went into effect in January 2019.	No third-party estimates or projections available.	(Government of Canada, 2018a)
	Energy	Phase-out of traditional coal power (November 2018)	Coal plants must comply with standard of 420 g/kWh by 2030 at the latest; designed to phase out conventional coal by 2030.	No third-party estimates or projections available.	(Government of Canada, 2018b)
	Energy	Regulations limiting carbon dioxide from natural-gas fired generation of electricity (January 2019)	Limits CO_2 emissions from natural gas plants to 420 g/kWh for boiler units and large combustion units, 550 g/kWh for smaller combustion units	No third-party estimates or projections available.	(Government of Canada, 2019)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Canada	Transport	[Under development] Clean fuel standard	Consultations on the design of a clean fuel standard for Canada are underway, with a goal to implement the standard in 2021. The standard will apply to liquid, gaseous, and solid fuels and is intended to reduce greenhouse gas emissions from fuel use.	The objective is to reduce emissions by 30 $MtCO_2$/year by 2030	(Environment and Climate Change Canada, 2018)
Chile	Cross-cutting	[Under development] Framework Law on Climate Change	The draft is expected by mid-2019	No third-party estimates or projections available.	(La Tercera, 2019)
	Energy	[Under development] Coal phase-out	Phase-out plan currently under development. The plan is expected in June 2019	A report by Valgesta Energia (local consultancy) has estimated a cumulative emission reduction potential of up to 20 $MtCO_2e$ by 2030, or around 1.8$MtCO_2e$/year between 2019 and 2030.	(Koop, 2019)(Valgesta Energía, 2018)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Chile	Energy	Energy efficiency draft bill (April 2019)	A new energy efficiency law intended mainly for energy consuming subsectors (incl. industry, transport, and buildings) was proposed in 2018. The proposal includes the usage of economic and regulatory instruments to accelerate the cultural transition towards a better management of resources. Specifically, it includes the establishment of (i) a national energy efficiency planning (to be updated every five years), (ii) monitoring, reporting and management mechanisms for large energy consumers, (iii) vehicle standards, (iv) standards for new residential buildings, and (v) energy efficiency management within the government.	The bill has been approved by the Senate in April 2019 but has not been published as law in the Official Journal yet. This law is expected to reduce emissions by 4.6 and 6.8 $MtCO_2e$ by 2030 and 2035 respectively, according to national estimates.	(Ministerio de Energía de Chile, 2018) (Ministerio de Energía de Chile, 2019)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
China	Cross-cutting	2018–2020 Three-Year Action Plan for Winning the Blue Sky War (July 2018)	A plan targeting air pollution that expands the number of cities required to comply with targets for $PM_{2.5}$, NOx, and VOCs. Some major cities have already exceeded the targets set in this plan, or have their own more stringent targets for 2020, like Beijing, Shanghai, and Guangzhou. Reductions may be seen in cities that did not have targets previously.	No third-party estimates or projections available.	(Feng, 2018; The State Council, 2018)
Colombia	Energy	Comprehensive management plan for climate change in the energy mining sector (August 2018)	This plan sets guidelines to foster mitigation, adaptation and good governance in the energy mining sector. The promoted mitigation measures focus on energy efficiency, energy generation, demand management, and fugitive emissions. They are expected to reduce GHG emissions by 11.2MtCO2e by 2030.	Expected reduction of 11.2 $MtCO_2e$/year in the energy mining sector by 2030 against a 2010 baseline	(Ministerio de Minas y Energía Colombia, 2018)
	Forestry	Resolution to increase the area of protected forest land in the Amazon (April 2018)	Coming into place, this law would increase Colombia's protected area coverage by 30 million to 38 million hectares. This expansion will protect forest against the encroachment of agriculture and will include strategic areas for biodiversity conservation.	No third-party estimates or projections available.	(Erickson Davis, 2018)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
DRC	Forestry	A national strategy for community forestry in Democratic republic of Congo (May 2018)	A new community forestry strategy has been developed that aims to strengthen the capacity of provincial authorities and ensure that the country's community forestry laws do in fact include and benefit communities. The plan calls for an "experimental phase" over the next five years to gradually provide access to areas of the roughly 700,000 km^2 of available forest through community management permits.	Safeguarding local peoples' right aims to better safeguard Congo's forests. Community management of forests has the potential to reduce deforestation.	(Rainforest Foundation UK, 2018) (Cannon, 2018)
	Energy	[Under development] Green Mini-Grid Program	The objective is to promote investment in mini and micro hydropower (MHP)-based mini-grids for rural electrification in DRC. It is supported by PNUD, the Green Climate Fund and the African Development Bank. It aims to install a total power capacity of 10MW by 2022 and of 100 MW by 2025 in rural areas.	No third-party estimates or projections available.	(Green Climate Fund, 2018; Radio Okapi, 2018)
Ethiopia	No significant policy development noted				

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
European Union	Energy	Adoption of new electricity market design proposals (April 2019)	The European Parliament completed the parliamentary approval of the last four legislative acts on the new electricity market design for the Clean Energy for All Europeans package. The approved acts are the new Electricity market Regulation and Electricity market Directive, as well as the Regulations on Risk Preparedness and on the Agency for the Cooperation of Energy Regulators (ACER). Capacity subsidies to power plants emitting more than 550gCO_2/kWh will be phased out under the new rules. The other key legislative acts that comprise the Clean Energy for All Europeans package (Governance of the Energy Union Regulation, revised Energy Efficiency Directive, revised Renewable Energy Directive and the Energy Performance of Buildings Directive) have already entered into force last year.	The full implementation of the Clean Energy for All Europeans package would lead to a reduction of GHG emissions by approximately 45% by 2030 relative to 1990, compared to the existing target of a 40% reduction (European Commission, 2018b).	(European Commission, 2019a)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
European Union	Transport	CO_2 emission standards for heavy-duty vehicles in the EU (February 2019)	The proposed targets for average CO_2 emissions from new lorries: 15% lower than in 2019/20 by 2025, and 30 % lower by 2030. The proposal also includes a mechanism to incentivise the uptake of zero- and low-emission vehicles, in a technology-neutral way. It further stimulates innovation and employment and aims to strengthen the competitiveness of the industry. The European Parliament has approved the proposal; formal adoption by the Council is expected mid-June 2019.	Aims to contribute to EU's overall GHG emission reduction target.	(European Commission, 2019c)
	Transport	New CO_2 emission standards for new cars and vans (April 2019)	The Council of Ministers agreed on CO_2 emission standards for new cars and vans for the period after 2020. By 2030, emissions will have to be 37.5% lower for new cars and 31% lower for new vans compared to 2021 levels. This measure also sets a 15% reduction target by 2025 compared to 2021 levels for both vehicle types.	Aims to contribute to EU's overall GHG emission reduction target.	(European Commission, 2019b)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
European Union member states	Energy	Coal power phase-out plans of member states	Finland has agreed on a phase-out of coal-fired power plants by 2029. Germany is discussing a phase-out (a commission advised to do so by 2038). Other member states that committed to or announced coal phase-out include Austria (2025), Denmark (2030), France (2021), Ireland (2025), Italy (2025), the Netherlands (2029), Portugal (2030), Sweden (2022) and the UK (2025).	No third-party estimates or projections available.	(BMWi, 2019; Europe Beyond Coal, 2019; Kauranen & Karagiannopoulos, 2019)
India	Energy	Scheme 'Kisan Urja Suraksha evam Utthaan Mahabhiyan (KUSUM)' (March 2019)	Promotes solar energy in rural areas. It aims to install up to 10 GW of solar power generation and rollout solar agricultural pumps reaching around 26 GW of solar capacity by 2022.	No third-party estimates or projections available.	(Press Information Bureau, 2019)
	Transport	Second phase of Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME-II) initiative (April 2019)	Aims to support the uptake of EVs by providing upfront incentives for the purchase of vehicles and by fostering the development of charging infrastructure. The scheme is planned to support 1,000,000 electric two-wheelers, 500,000 electric three-wheelers, 55,000 electric four-wheelers and 7,000 buses.	No third-party estimates or projections available.	(Ministry of Heavy Industries and Public Enterprieses, 2019)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Indonesia	Energy	RUPTL (2019-2028), Minister Regulation No. 39 K/20/MEM/2019) (January 2019)	Plans for renewable electricity share in generation to reach 23% by 2025. It also presents technology-specific capacity addition targets between 2019 and 2028. The plan further includes measures to implement smart grids, rooftop PV, and electric vehicles (including charging infrastructure). The new RUPTL still presents the installation of almost 40 GW of fossil-fired power plants, about 27 GM of coal in the next ten years.	No third-party estimates or projections available.	(Republic of Indonesia, 2019)
	Energy	MEMR Ministerial Regulation No.49/2018 - Rooftop Solar Cell. (July 2018)	Aims to accelerate renewable energy use by regulating rooftop PV and allowing the state-owned electricity company PLN a metering scheme for excess energy to offset electricity costs of customers with rooftop PV.	No third-party estimates or projections available.	(Republic of Indonesia, 2018b)
	Forestry	Presidential instruction, 8/2018 (September 2018)	This instruction presents a three-year moratorium on entire licensing process for palm oil plantations and an order for the relevant central government ministries and regional governments to conduct a massive review of oil palm licensing data.	No third-party estimates or projections available.	(Mongabay, 2018)
Indonesia	Agriculture	Minister of Agriculture Regulation No. 5/2018 on Land Clearance and Management for Plantation Without Burning	Policy that mandates all estate crop concession holders to maintain environmental sustainability and not using fire for land clearing and land management.	No third-party estimates or projections available.	(Republic of Indonesia, 2018a)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Japan	Energy	Three new actions towards decarbonisation of the power sector (March 2019)	Following the poor evaluation result for FY2018 on the progress of GHG mitigation action in the power sector, the Ministry of the Environment announced the following three actions: 1) Stricter implementation of environmental impact assessment 2) Coordination team with the Ministry of Economy, Trade and Industry (METI) on the expansion of distributed renewable energy 3) Acceleration of carbon capture, utilization and storage (CCUS) The most significant of which is the stricter implementation of environmental impact assessment – new coal-fired power plant construction plans without the following would be requested to be cancelled (the final decision is with METI): • justification for the need other than economic feasibility, or • clear explanation on the role the new power plants play towards the achievement of the 2030 electricity mix target. Coal-fired power plants already under construction will not be affected by this action.	No third-party estimates or projections available.	(MOEJ, 2019b)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Japan	Industry/ industrial processes	[Under development] Draft amendment of the F-gas Act (adopted by the Cabinet in March 2019)	The amendment includes several penalty and obligatory measures to increase the F-gas recovery rates up to the targeted 50% by 2030 from 38% in 2017.	No third-party estimates or projections available.	(MOEJ, 2019a; Yoshimoto, 2019)
Kazakhstan	No significant policy development noted				
Mexico	Energy, industry/ industrial processes	Emissions Trading Scheme (2018)	National emissions trading scheme that will start the three-year pilot phase in 2019. The regulatory framework for the ETS is expected to be fully operational by 2022.		(Carbon Pulse, 2017)
	Forestry	General Law for Sustainable Forest Development (April 2018)	This law replaces the 2003 general law for sustainable forest development. The new law includes the recognition of community forest management initiatives, the consolidation of social and environmental safeguards, the promotion of sustainable forest management, the assurance that the government purchases forest products with proper licensure, the integrated management of fire, and the assurance of the inclusion of women and young people in forestry activities.	The new law introduces the integration of the forestry sector in the NDC mitigation reduction target.	(Estados Unidos Mexicanos. Presidencia de la República, 2018)
Morocco	No significant policy development noted				

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
The Philippines	Energy	Department Circular No. DC2018-09-0027 "Establishment and Development of Competitive Renewable Energy Zones in the Country" (September 2018)	Aims to identify Competitive Renewable Energy Zones (CREZ) to enhance the planning and implementation of the Philippine Energy Plan, Power Development Plan, Transmission Development Plan and the National Renewable Energy Program. The CREZ process supports overcoming transmission barriers in order to develop areas with potential renewable resources.	No third-party estimates or projections available.	(Department of Energy, 2018b)
	Energy	Department Circular No. DC2018-08-0024 "Promulgating the rules and guidelines governing the establishment of the renewable portfolio standards for off-grid areas" (August 2018)	Aims to foster renewable development by mandating electric power industries in off-grid areas to source or produce a specified portion of their electricity from eligible renewable resources.	No third-party estimates or projections available.	(Department of Energy, 2018c)
	Energy	Rules governing the establishment of the Green Energy Option Programme (September 2018)	Guides stakeholders on the process of end-user choice to be supplied by renewable sources.	No third-party estimates or projections available.	(Department of Energy, 2018d)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Republic of Korea	Energy	[Under development] Draft 3rd Energy Master Plan 2019–2040 (April 2019)	The draft plan includes a target to increase the share of renewables in total power generation to between 30% and 35% by 2040. If adopted, the new target would be a significant upward revision from the current target of 13.4% share for new and renewable energy sources by 2035 as laid out in the 4th Basic Plan for New and Renewable Energies. The draft plan is expected to be adopted in the next few months.	No third-party estimates or projections available.	(Chung, 2019)
Russia	Cross-cutting	[Under development] Draft federal law on state regulation of greenhouse gas emissions (December 2018)	The draft amendment of the Law on Environmental Protection would enable the government to introduce GHG reduction targets for companies and charge those that failed to meet the targets. The draft bill also refers to the development of a market-based mechanism. The draft bill does not include specific targets by sector. The legislation is expected to be adopted in June 2019.	No third-party estimates or projections available.	(Federation Council, 2019; Government of the Russian Federation, 2018; Gutbrod & Kalinin, 2018)
Saudi Arabia	No significant policy development noted				

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
South Africa	Cross-cutting	Carbon Tax Bill (approved in February 2019)	Parliament approved the carbon tax bill in February 2019, which will be implemented from June 2019 onwards. It allows a tax rate of 120 Rand per tCO_2e. Tax-free allowances of up to 95% during the first phase until 2022 might reduce the effective rate to 6-54 Rand per tCO_2e.	National experts expect that the immediate effect is small during the first phase until 2022.	(Bloom, 2018; Climate Home News, 2019; ERC, 2018; KPMG, 2019; Roelf, 2019)
	Energy	[Under development] Draft Integrated Resource Plan 2018 for public consultation (August 2018)	Department of Energy submitted updated IRP in August 2018 for public consultation. It aims to decommission a total of 35 GW (of 42 GW currently operating) of coal generation capacity by 2050, starting with 12 GW by 2030, 16 GW by 2040 and a further 7 GW by 2050	Climate Action Tracker estimates the total emission reductions in 2030 to be 19–24 $MtCO_2e$/year from the current policies projection of 231 $MtCO_2e$/year by 2030 for the energy sector.	(Climate Action Tracker, 2018; Department of Energy, 2018a)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Thailand	Energy	Power Development Plan (PDP) 2018–2037 (January 2019)	On 24 January, the National Energy Policy Committee adopted the new PDP up to 2037. Compared to the 2015 PDP, the new PDP foresees large reduction of power generation from coal power generation and large increase from gas. The electricity generation mix for 2037 is projected as follows (2036 projections in the 2015 Plan in parentheses): • Coal: 12% (23%) • Gas: 53% (37%) • Domestic renewables: 20% (20%) • Imported hydro: 9% (15%) • Nuclear: 0% (5%) • Demand reduction through energy efficiency improvement: 6% (---)	When limited to domestic electricity generation, the 2037 target of the 2019 PEP translates to roughly 14% coal, 62% gas and 24% renewables. Compared to our current policies scenario projections for 2030 in the 2018 update report (25% coal, 57% gas, 18% renewables), the 2019 PEP projection for 2037 is considerably lower for coal power share.	(Souche, 2019; Theparat & Praiwan, 2019)
Turkey	No significant policy development noted				

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
Ukraine	Energy	Ukraine's Electricity Market Law (Law no 4493) (entering into force in July 2019)	Ukraine's Electricity Market Law— adopted in June 2017— will come into effect in July 2019. This Law liberalizes Ukraine's national electricity market through the alignment of Ukraine's national legislation with the regulation from the European Union's Third Energy Package on the European gas and electricity markets. Electricity from renewable energy sources will be bought on the basis of the feed-in tariff regulation.	No third-party estimates or projections available.	(Government of Ukraine, 2017; IEA, 2017)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
United States	Cross-cutting	[Under development] Proposed Legislation: Green New Deal (February 2019)	The Green New Deal is legislation that was introduced in congress in February 2019. It is an economy-wide vision to reach net-zero GHG emissions that includes provisions to address 100% renewable electricity, smart grids, building renovations, clean manufacturing, agriculture, zero emissions vehicles, public transit, and high-speed rail, as well as various adaptation measures. The legislation did not pass the Senate on 26 March, 2019, and is very unlikely to be enacted under the current US administration, but has sparked significant discussion on climate policy, particularly among Democrats, and even among some Republicans.	Calls for net-zero GHG emissions, but does not specify by when.	(Ocasio-Cortez, 2019)
	Energy	[Under development] Proposed Revision: New Source Performance Standards for controlling methane and other emissions from the oil and natural gas sector (October 2018)	Proposed regulation to weaken emissions standards for methane emissions from oil and gas production. The proposed regulation was published in the federal register on 15 October, 2018, with a commenting period until 17 December, 2018.	No third-party estimates or projections available.	(U.S. Environmental Protection Agency, 2018c)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
United States	Energy	Methane Waste Prevention Rule (amended November 2018)	Weakens the Bureau of Land Management's regulations to reduce methane emissions from oil and gas production on public lands. The final rule went into effect on November 27, 2018.	No third-party estimates or projections available.	(U.S. Bureau of Land Management, 2018)
	Energy	[Under development] Proposed revision: New Source Performance Standards for Coal-Fired Power Plants (December 2018)	Weakens emissions standards for new coal plants to 863 $kgCO_2$/MWh for larger units and 909 $kgCO_2$/MWh for smaller units	No third-party estimates or projections available.	(U.S. Environmental Protection Agency, 2018d)
	Energy	[Under development] Proposed: Affordable Clean Energy Rule (August 2018)	Replaces the Clean Power Plan, which would have reduced CO_2 emissions by setting targets for entire states individually. This rule limits performance standards to individual power plants.	The Affordable Clean Energy rule is not expected to have a major impact on GHG emissions. Full implementation of the Clean Power Plan would have reduced emissions by 212 $MtCO_2e$/year by 2030.	(U.S. Environmental Protection Agency, 2018b)
	Energy	[Under development] Proposed: Repeal of light bulb efficiency regulation (February 2019)	Repeals regulation that would have expanded the number of light bulbs subject to efficiency standards.	No third-party estimates or projections available.	(U.S. Department of Energy, 2019)

Country/ region	Sector	Name (date)	Description of the policy	Possible implications on GHG emissions projections in 2030	References
United States	Transport	[Under development] Proposed: Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (August 2018)	Would freeze CAFE standards at 2020 levels instead of increasing in 2021 as foreseen under Obama Administration.	No third-party estimates or projections available.	(U.S. Environmental Protection Agency, Administration, & U.S. National Highway Safety Administration, 2018)
	Waste	[Under development] Proposed revision: Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (October 2018)	Postpones due date for state plans to limit methane emissions from landfills and postpones compliance deadlines	No third-party estimates or projections available.	(U.S. Environmental Protection Agency, 2018a)

3 Overview of long-term strategies in development or submitted to the UNFCCC

Table 2: Overview of long-term strategies submitted to the UNFCCC as of 9 May 2019 (UNFCCC, 2019).

Country/ region	Status	2050 emissions reduction targets or indicative emission levels	Other notes
Benin	Submitted 12/12/2016	No 2050 goal. Benin aims to be resilient to climate change, with a low carbon intensity, by 2025.	
Canada	Submitted 17/11/2016	80% below 2005 levels (149 $MtCO_2e$/year by 2050)	See e.g. COMMIT fact sheet (COMMIT project, 2019) for more information
Czech Republic	Submitted 15/1/2018	Indicative targets of 70 Mt CO_2e/year emissions by 2040, and 39 $MtCO_2e$/year by 2050.	National commitments reflect EU commitments (80-95% reduction of greenhouse gas emissions by 2050, compared to 1990).
Fiji	Submitted 25/02/2019	Net zero carbon emissions by 2050, across all sectors of the economy.	There are four possible low-emission scenarios: BAU Unconditional, BAU Conditional, High Ambition, Very High Ambition.
France	Submitted 28/12/2016, re-submitted 18/4/2017	75% reduction of GHG emissions by 2050, compared to 1990, with detailed sector targets.	A draft law for the energy and climate bill setting a target of net-zero emissions by mid-century was presented by the government in May 2019 (Legifrance, 2019)
Germany	Submitted 17/11/2016, re-submitted 26/4/2017	Extensive greenhouse gas neutrality by the middle of the century.	Climate Action Plan: a final target of 80 to 95% GHG emissions reduction by 2050, compared to 1990, augmented with concrete measures.
Republic of the Marshall Islands	Submitted 25/9/2018	Net zero GHG emissions by 2050.	Four scenarios are presented: NDC, Moderate, Significant and Lighthouse. The latter gets closest to the net zero GHG emissions goal.
Mexico	Submitted 16/11/2016	"Our GHG emissions reduction goal is to reduce 50% of national GHGs by 2050 below our emissions in 2000."	

Country/ region	Status	2050 emissions reduction targets or indicative emission levels	Other notes
Ukraine	Submitted 30/07/2018	"Ukraine will ensure doing its best to achieve the indicative GHG emissions target of 31-34% by 2050, compare to 1990 level."	
United Kingdom	Submitted 17/4/2018	At least 80% reduction by 2050, relative to 1990 levels (as per the Climate Change Act).	In May 2019, the Climate Change Committee (CCC) recommended net zero GHG emissions by 2050 (Committee on Climate Change, 2019). The CCC, established under the 2008 Climate Change Act, advises the UK government on climate policy. The domestic long-term target enshrined in the Climate Change Act, and subsequently the LTS, may be revised.
United States	Submitted 16/11/2016	80% below 2005 levels (including LULUCF)	The strategy is still officially submitted, but the federal government is not acting upon it.
Costa Rica	Domestic plan published.	Costa Rica launched a decarbonisation plan up to 2050 on 24 February, 2019 (Gobierno de Costa Rica, 2019). It aims to be a 'modern, green, emission-free, resilient and inclusive economy', and contains 10 focus areas (e.g. Transport, Energy, Agriculture). The plan is used as the foundation for Costa Rica's National Development and Public Investment Plan and its Long-Term Strategy.	
European Union	Draft published	On 28 November 2018, and following an invitation from the European Council (heads of government), the European Commission presented its strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050 (European Commission, 2018a). The document contains scenarios between 80% below 1990 level in 2050 and net zero GHG emissions by 2050.	Following submission of the long-term vision by the European Commission, discussion on the final strategy to be submitted to the UNFCCC is now taking place in the European Parliament and Council.

Country/ region	Status	2050 emissions reduction targets or indicative emission levels	Other notes
Japan	Draft published (final document expected around June 2019)	The draft long-term strategy (METI & MOEJ, 2019) reiterates the 2050 target (80% reduction from current levels) and also aims to achieve net zero emissions "as early as possible during the second half of the 21st century".	The final long-term strategy document is expected to be released around the G20 summit to be held in Osaka (28–29 June).
South Africa	Draft published	A draft document was released in December (Department of Environmental Affairs, 2018). The document summarises South Africa's long-term vision as: "Putting South Africa on a low-carbon growth path while making a fair contribution to the global effort to limit the average temperature increase." No quantified target is provided in the document.	
Argentina	Not submitted	N/A	Argentina has confirmed it is working on an LTS. Little public detail on the content available yet (see e.g. Energía Estratégica, 2019; Government of Argentina, 2019)
Australia	Not submitted	N/A	On the state level, various net zero greenhouse gas emissions targets exist for e.g. 2045 or 2050 (Australian Capital Territory, 2018; COMMIT project, 2019; Parliament of Victoria, 2017).
Brazil	Not submitted	N/A	
Chile	Not submitted	N/A	Chile is working on developing a long-term climate strategy (Ministerio del Medio Ambiente, 2018)
China	Not submitted	N/A	China has committed to submitting its LTS by 2020 (Darby, 2019b)
Colombia	Not submitted	N/A	
D.R. Congo	Not submitted	N/A	
Ethiopia	Not submitted	N/A	
India	Not submitted	N/A	

Country/ region	Status	2050 emissions reduction targets or indicative emission levels	Other notes
Indonesia	Not submitted	The Ministry of National Development Planning (BAPPENAS), in collaboration with development partners, has released the results of the Low Carbon Development Initiative (LCDI) (Ministry of National Development Planning (BAPPENAS), 2019). The indicated emissions level in 2045 are between 1,000 $MtCO_2e$ and 3,000 $MtCO_2e$ including LULUCF, in comparison to 1,500 $MtCO_2e$ in 2016, the latest country-reported historical year (Republic of Indonesia, 2018a).	The BAPPENAS report includes different long-term emission pathways together with the policy and development implications of each. These results, together with other modelling exercises, aim to support the elaboration of Indonesia's LTS.
Kazakhstan	Not submitted	N/A	
Morocco	Not submitted	N/A	
New Zealand	Not Submitted	N/A	New Zealand plans to introduce a Zero Carbon Bill, which will set a goal to reduce greenhouse gas emissions (excluding methane) to net zero by 2050 and establish an independent climate change commission (Ministry for the Environment, 2018). The proposed target for methane emissions is a 24% to 47% reduction from 2017 levels (Darby, 2019a).
The Philippines	Not submitted	N/A	
Republic of Korea	Not submitted	N/A	
Russia	Not submitted	N/A	
Saudi Arabia	Not submitted	N/A	
Thailand	Not submitted	N/A	
Turkey	Not submitted	N/A	

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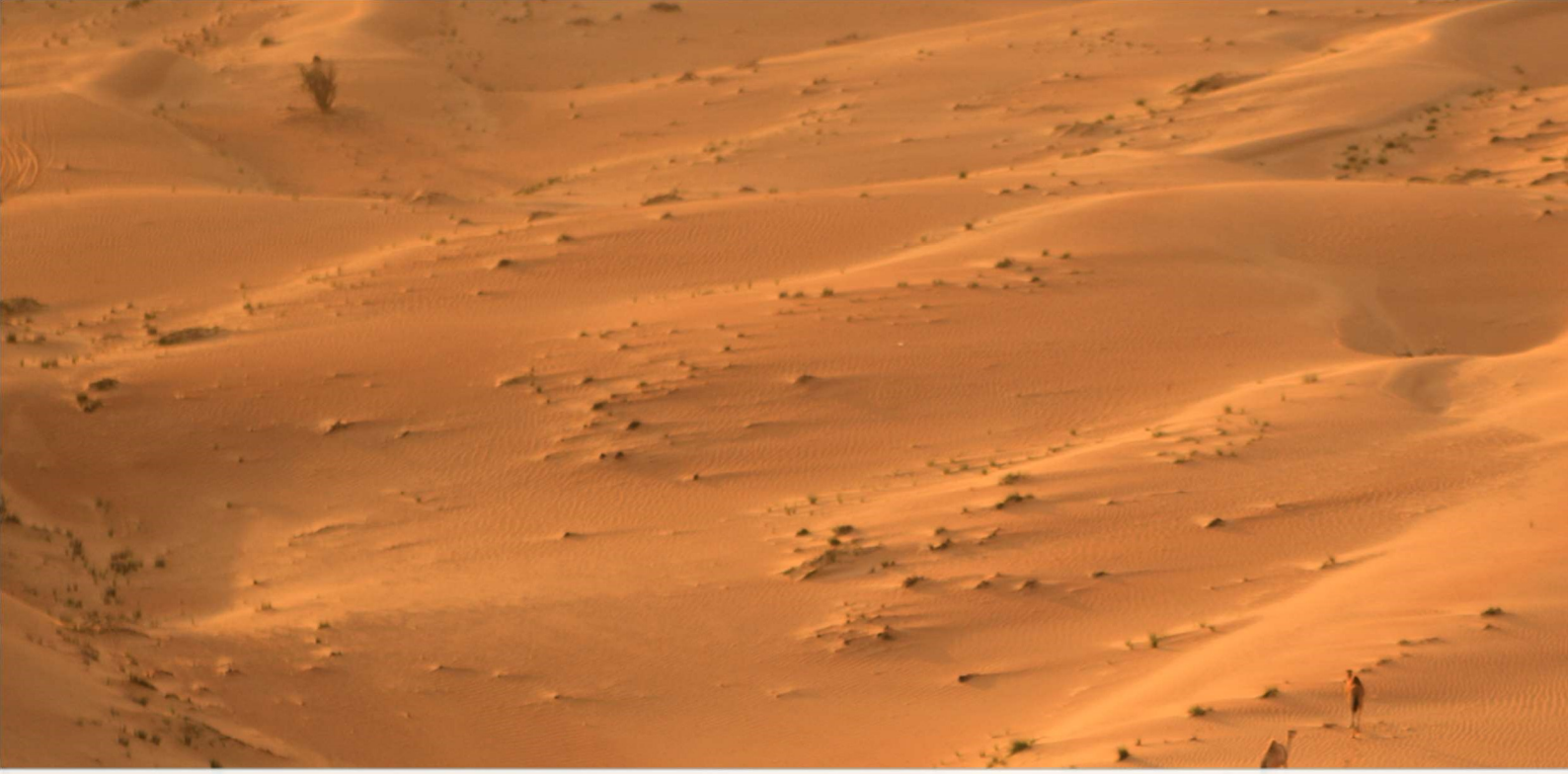

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