

CLIMATE CHANGE

52/2021

NDC Design

Systematic analysis

by:

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publisher:

German Environment Agency

CLIMATE CHANGE 52/2021

Project No. (FKZ) 146336

Report No. FB000579/ENG

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On behalf of the German Environment Agency

Imprint

Publisher

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06844 Dessau-Roßlau
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 [/umweltbundesamt](https://twitter.com/umweltbundesamt)

Report performed by:

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13189 Berlin
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Report completed in:

May 2021

Edited by:

Section V 1.1 Climate Protection
Frederik Pischke (Fachbegleitung)

Publication as pdf:

<http://www.umweltbundesamt.de/publikationen>

ISSN 1862-4359

Dessau-Roßlau, July 2021

The responsibility for the content of this publication lies with the author(s).

Introduction to the project

This publication has been developed as part of the project “Systematic analysis of the design of new and updated nationally determined contributions under the Paris Agreement.” The project developed a methodology for the systematic analysis of the design of new or updated nationally determined contributions (NDCs) of Parties to the Paris Agreement and applied it to 20 NDCs. Besides an overview of all aspects of the NDC, the focus of the analysis is on the greenhouse gas mitigation component of the NDC.

The aim is to provide a nuanced perspective of the ambition, endeavours and orientation of countries’ climate action. This focus on the systematic analysis of NDC design thus closes a gap of existing NDC analysis instruments.

In order to develop a methodology that is robust yet can be applied to all NDCs, the selection of countries aimed to include a diversity of geographic contexts and NDCs with different emphasis, target types, and approaches to climate change mitigation. In addition, the selection aimed to cover major greenhouse gas emitting countries, which have submitted an updated NDC by the end of April 2021, and realise synergies with the Climate Target Update Tracker of the Climate Action Tracker.

The seven-month project has been financed and supervised by the German Environment Agency and carried out by the independent organisations NewClimate Institute and Öko-Institut.

The analysis of the NDCs is scientific in nature. It is based on the authors’ careful review of the NDCs and additional sources, which are duly referenced. The views expressed in this publication are those of the authors and do not necessarily reflect the official opinions of the German Environment Agency.

The authors of this study are Maria Jose de Villafranca Casas, Niklas Höhne, Silke Mooldijk, Sybrig Smit, Marie Weishaupt of NewClimate Institute and Lorenz Moosmann, Anne Simons, Felix Fallasch of Öko-Institut. The project idea was developed and the project’s execution supervised by Frederik Pischke for the German Environment Agency (Umweltbundesamt).

The authors would like to acknowledge the following persons for their inputs and review: Juliane Berger (Umweltbundesamt), Erich de Castro Dias (NewClimate Institute), Gustavo de Vivero Serrano (NewClimate Institute), Judit Hecke (NewClimate Institute), Eva Hübner (Gesellschaft für Internationale Zusammenarbeit, GIZ), Kirstin Hücking (GIZ), Vanessa Moosmann (GIZ), Mona Neubüser (Umweltbundesamt) and Michelle Peña Nelz (GIZ).

Abstract: NDC Design

As part of the Paris Agreement, countries are mandated to update and enhance their Nationally Determined Contributions (NDCs) every five years — increasing their ambition with every cycle. The first round of NDCs were submitted starting in 2015 as intended nationally determined contributions and countries have submitted or are finalizing their updates for the new cycle in 2020/2021. The purpose of this project was to develop a methodology to systematically assess the design of NDCs and to apply it to 20 NDCs. While there are several tools that analyse NDCs, they are comprehensive, concise, replicable and comparable to a varying degree. Our methodology aims to fill a gap by addressing those criteria and providing new insights into the design of NDCs. We evaluate the NDCs along key elements that are critical for the success of the NDC ambition cycle: 1. Increased mitigation ambition; 2. Comprehensiveness; 3. Implementation plan; and 4. Transparency. We have applied this methodology to 20 NDCs with the aim to include a diversity of geographic contexts as well as NDCs with different emphasis, target types, and approaches to climate change mitigation.

The analysis shows that the selected countries fare generally well on comprehensiveness and transparency in their new NDCs. The rules under the Paris Agreement on what to include in the NDC and how to describe it show a positive effect; most countries provide the information necessary according to the rules. However, the elements that are critical for the success of the ambition cycle, i.e. raising ambition in each round and having a plan to implement the targets, are only partially covered by many countries. Of the analysed NDCs, less than half showed higher mitigation ambition compared to their first NDC. Many targets remained unchanged or were found to be less ambitious due to changes in parameters such as baseline emissions. Many countries lack a clear implementation plan for the targets: In many cases measures have not yet been included in national legislation, but preparations are underway especially for those countries that increased their targets. Currently, governments can make their NDCs “look good” by fulfilling all requirements on comprehensiveness and transparency, but only a deeper analysis reveals that their NDCs are not more ambitious or lack an implementation plan. To uncover such deficiencies and to make the ambition cycle of the Paris Agreement a success, a careful checking of NDCs is necessary.

Kurzbeschreibung: Ausgestaltung von NDCs

Unter dem Übereinkommen von Paris sind alle Länder verpflichtet, ihre nationalen Beiträge (Nationally Determined Contributions, NDCs) alle fünf Jahre zu aktualisieren und zu verbessern und dadurch ihre Ambitionen mit jedem Zyklus zu steigern. Die ersten NDCs wurde ab 2015 als beabsichtigte nationale Beiträge eingereicht. Für den aktuellen Zyklus haben viele Länder ihre Aktualisierungen 2020/2021 eingereicht, andere sind noch im Aktualisierungsprozess. Ziel dieses Projekts war es, eine Methode zur systematischen Bewertung der Ausgestaltung von NDCs zu entwickeln und diese auf 20 NDCs anzuwenden. Es gibt zwar mehrere Instrumente zur Analyse von NDCs, aber nicht alle sind gleichermaßen umfassend, prägnant, replizierbar und vergleichbar. Unsere Methode zielt darauf ab, die Lücke zu schließen, indem sie diese Kriterien berücksichtigt und neue Erkenntnisse zur Ausgestaltung der NDCs liefert. Wir untersuchen die NDCs entlang von Schlüsselementen, die für den Erfolg des NDC-Ambitionszyklus entscheidend sind: 1. erhöhtes Minderungsziel, 2. umfassende Darstellung, 3. Plan für die Umsetzung und 4. Transparenz. Diese Methode wurde auf 20 NDCs angewandt, wobei eine Vielfalt an geografischen Kontexten sowie NDCs mit unterschiedlichen Schwerpunkten, Zieltypen und Minderungsansätzen berücksichtigt wurden.

Die Analyse zeigt, dass die Länder im Allgemeinen gut bewertet werden bezüglich Vollständigkeit und Transparenz ihres neuen NDCs. Die Regeln des Übereinkommens von Paris zum Inhalt und zur Berichterstattung von NDCs wirken sich positiv aus; die meisten Länder liefern die notwendigen Informationen gemäß dieser Regeln. Allerdings werden die Elemente, die für den Erfolg des Ambitionszyklus entscheidend sind, d. h. die Erhöhung der Minderungsziele in jeder Runde und ein Plan für die Umsetzung der Ziele, von vielen Ländern nur teilweise abgedeckt. Von den analysierten NDCs zeigte weniger als die Hälfte höhere Minderungsambitionen im Vergleich zu ihrem ersten NDC. Viele Ziele blieben im Vergleich zum ersten NDC unverändert oder wurden aufgrund geänderter Parameter, z. B. der Baseline-Emissionen, als weniger ambitioniert eingestuft. Vielen Ländern fehlt ein klarer Umsetzungsplan für die Ziele: In vielen Fällen wurden Maßnahmen noch nicht in die nationale Gesetzgebung aufgenommen, aber die Vorbereitungen sind im Gange. Mit dem derzeitigen System können Länder ihre NDCs "gut aussehen" lassen, indem sie alle Anforderungen an Umfang und Transparenz erfüllen, aber erst nach einer tieferen Analyse wird klar, dass ihre NDCs nicht ambitionierter sind oder dass ein Umsetzungsplan fehlt. Um solche Mängel aufzudecken und um dem Ambitionszyklus des Übereinkommens von Paris zum Erfolg zu verhelfen, ist sorgfältige Prüfung der NDCs notwendig.

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List of abbreviations

ACTS	African Centre for Technology Studies
AFOLU	Agriculture, forestry and other land use
AR4	Fourth Assessment Report of the IPCC
AR5	Fifth Assessment Report of the IPCC
BAU	Business-as-Usual
BUR	Biennial Update Report
CAT	Climate Action Tracker
CH₄	Methane
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO₂	Carbon dioxide
CO₂e	Carbon dioxide equivalent
COP	Conference of the Parties
COVID-19	Coronavirus disease 2019
DIE	Deutsches Institut für Entwicklungspolitik
ETF	Enhanced Transparency Framework
ENREDD+	Panama’s National Strategy for Reducing Emissions from Deforestation and Degradation
ERI	Energy Research Institute (China)
EU	European Union
EU ETS	EU Emissions Trading System
EV	Electric vehicle
FARN	Fundación Ambiente y Recursos Naturales (Argentina)
F-gases	Fluorinated greenhouse gases
G20	Group of Twenty
GCF	Green Climate Fund
GDP	Gross domestic product
Gg	Gigagramme
GHG	Greenhouse gas
GST	Global stocktake
Gt	Gigatonne

GW	Gigawatt
GWP	Global Warming Potential
ha	hectares
HFCs	Hydrofluorocarbons
ICIRED	International centre for the implementation of REDD+ activities
ICTU	Information to facilitate clarity, transparency and understanding of NDCs
IESR	Institute for Essential Services Reform (Indonesia)
IGES	Institute for Global Environmental Strategies
IMF	International Monetary Fund
IMO	International Maritime Organization
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial processes and product use
ITMO	Internationally transferred mitigation outcome
JNAP	Tonga's Joint National Action Plan for Climate Change Adaptation and Disaster Risk Reduction
km	kilometre
LAPA	Nepal's Local Adaptation Plan for Action
LEAP	Low Emissions Analysis Platform
LEDS	Low Emission Development Strategy
LGCC	Mexico's General Law on Climate Change
LTS	Long-term strategies
LT-LEDS	Long-Term Low Emission Development Strategy
LULUCF	Land use, land-use change and forestry
MPGs	Modalities, procedures and guidelines
MRV	Measurement, Reporting and Verification
Mt	Megatonne
MTP	Kenya's Medium-Term Plan
MW	Megawatt
NAMA	Nationally Appropriate Mitigation Action
NAP	National Adaptation Plan
NCCC	Argentina's National Climate Change Cabinet
NDC	Nationally Determined Contribution
NEP	Jamaica's National Energy Policy
NF₃	Nitrogen trifluoride

NMVOC	Non-methane volatile organic compounds
N₂O	Nitrous oxide
PAM	Policies and Measures
PFCs	Perfluorocarbons
PNRF	Panama's National Forest Restoration Programme
PNTC	Panama's National Climate Transparency Platform
REDD+	Reducing emissions from deforestation and forest degradation in developing countries' Programme of the UNFCCC
SAR	Second Assessment Report of the IPCC
SEI	Stockholm Environment Institute
SDG	Sustainable Development Goals
SF₆	Sulphur hexafluoride
SIDS	Small Island Developing States
t	tonne
Teri	The Energy and Resources Institute (India)
UK	The United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States dollar
WRI	World Resources Institute
WWF	World Wide Fund for Nature

Summary

Introduction

Under the Paris Agreement, countries are mandated to prepare and submit Nationally Determined Contributions (NDCs) every five years detailing their climate targets and their contributions towards achieving the goals of the Paris Agreement. Each NDC submission is to represent a progression beyond the previous one and reflect a country's highest possible ambition.

The first NDCs were submitted starting in 2015¹. Five years later, countries have submitted or are in the process of submitting new NDCs—either updating their first submission or preparing their second one.

Requirements for nationally determined contributions

The information to be provided when submitting NDCs is laid down in a decision adopted at the climate change conference in Katowice in 2018. This so-called 'information to facilitate clarity, transparency and understanding of NDCs' (ICTU) comprises the following elements:

- ▶ Quantifiable information on the reference point
- ▶ Time frames and/or periods for implementation
- ▶ Scope and coverage
- ▶ Planning process
- ▶ Assumptions and methodological approaches
- ▶ How the Party considers that its NDC is fair and ambitious
- ▶ How the NDC contributes towards achieving the objective of the Convention

This information is mandatory when submitting the second and subsequent NDC; Parties that communicate or update their first NDC by 2020 are strongly encouraged to provide this information.

At the climate change conference in Katowice (UNFCCC COP24), Parties also adopted a guidance on how to account for NDCs, i.e., how to compare the progress made in implementing an NDC to the NDC target(s). Parties are required to account for their NDCs in accordance with the guidance contained in Annex II to decision 4/CMA.1, starting with their second NDC. They may elect to apply such guidance to their first NDC. The actual accounting process, i.e., the summing up of emissions and removals in accordance with the guidance and the comparison of these emissions/removals with the NDC target, is done by Parties when they prepare their biennial transparency reports.

Overview of NDC tracking and analysis instruments

To be able to evaluate whether countries are honouring the spirit of the Paris Agreement and submitting contributions that reflect their highest possible ambition, it is key to analyse the details of the submissions. However, the heterogeneity of NDCs poses barriers to a comparison between countries and between submissions.

¹ NDCs submitted before the adoption of the Paris Agreement are known as 'intended nationally determined contributions'.

To address this issue, several institutions have developed instruments that provide an overview of countries' NDCs, facilitate the comparison of components and indicators between them and provide an assessment of various aspects of the content. These instruments include the Climate Action Tracker's Climate Target Update Tracker, the Climate Transparency NDC Transparency Check, WRI's Climate Watch 2020 NDC Tracker, the Deutsches Institut für Entwicklungspolitik NDC Explorer, and the WWF's #NDCsWeWant. Each of these instruments has a slightly different focus.

The Climate Action Tracker's Climate Target Update Tracker is the only instrument that includes a translation of NDC targets to a common metric which allows for a direct comparison between previous and updated NDC targets. It includes a combination of qualitative and quantitative assessment of a country's climate change targets and actions providing a direct link to the Paris Agreement's temperature goals. However, the analysis focuses exclusively on climate change mitigation excluding the adaptation and finance components of NDCs. A pitfall from the translation of the targets to a common metric is that the analysis includes varying levels of assumptions regarding emissions and removals from the forestry sector depending on the available data. Moreover, detailed assessment is only available for 40 Parties.

The Climate Transparency NDC Transparency Check instrument is largely based on ICTU elements from decision 1/CP.21 and the Katowice Rulebook. This tool has valuable strengths such as the inclusion of a comprehensive and systematic checklist of the key NDCs elements, enabling a comparison of NDC's content between countries and different update rounds. It also includes information on the NDC development process, the target itself and its implementation. However, the instrument only reflects the content of the NDC, refraining from performing a qualitative analysis or assessing the overall ambition of the country's NDC target.

The Climate Watch 2020 NDC Tracker is operated by World Resources Institute. This instrument covers 153 countries and provides an overview of which countries are updating or enhancing their national climate commitments, or have the intention to do so in the lead up to COP26. It organizes excerpts from NDCs into different categories allowing for a comparison of the content of different NDCs. However, for some categories this comparison provides only a 'yes/no' checklist. This instrument does not provide a detailed analysis of NDCs.

The Deutsches Institut für Entwicklungspolitik NDC Explorer is an online tool that analyses and compares countries' NDCs qualitatively and quantitatively. It covers 169 countries and allows for a dynamic comparison of up to three NDCs. However, the information about targets is only qualitative, hampering an assessment of their ambition level, there is no clear category for the clarity of methodological approach, and it does not analyse or compare different NDC update rounds. The instrument was last updated in March 2020.

WWF's #NDCsWeWant provides a direct comparison of the previous and updated countries' NDCs against their #NDCsWeWant twenty criteria checklist and assigns a combined rating for each country: NDC we want, short way to go, some way to go, and NDC we don't want. The instrument covers 16 countries. Nevertheless, the tool may fall short when assessing the improvement of mitigation ambition of the proposed targets and it considers neither the transparency, the underlying assumptions nor the methodologies of the NDCs.

Objective of the project

Due to the variety of elements considered and differences in the approaches taken by the instruments mentioned above while assessing the countries' NDC submissions, there is a need for further analysis which is comprehensive, replicable and comparable, yet concise. Therefore, this project aims to address these criteria and provide new insights into the design of NDCs.

Methodology

Drawing upon an analysis of the strengths but also limitations of the NDC tracking and analysis tools introduced above, the proposed methodology is guided by four fundamental criteria:

- ▶ **Comparability:** To assess, systematically, countries' NDCs allowing comparability between them.
- ▶ **Comprehensiveness:** To encompass all relevant mandatory and non-mandatory NDC elements.
- ▶ **Conciseness:** To provide digestible and insightful assessments.
- ▶ **Replicability:** To yield the same results independently of who is applying it.

Overview assessment

Following these criteria, our methodology evaluates the NDCs along key elements that are critical for the success of the NDC ambition cycle. An overview assessment addresses the following four elements:

- ▶ **Increased ambition:** Focusing on mitigation ambitions, assessing whether the new/updated NDCs are more ambitious than the previous one and whether these lead to additional greenhouse gas reductions than under a Party's projections under "current policies".
- ▶ **Comprehensiveness:** Focusing on the scope of the NDCs in terms of coverage of emissions, sectors and non-mandatory topics, such as adaptation.
- ▶ **Implementation plan:** Assessing whether the NDC is embedded in the national policy making process in order to steer national action on climate.
- ▶ **Transparency:** Assessing whether the information is clear and in line with requirements of the Paris Agreement, to build trust in the information provided in countries' NDCs.

The overview assessment includes for each country a short summary of the assessment of the NDC with the findings, an overview assessment table and a figure showing graphically the emissions, historic and projected, based on current policies and previous and current NDC targets.

The methodology evaluates the new/updated NDC taking into account the four essential elements in the design of the NDC by rating each one of these core elements as fulfilled, partially fulfilled, not fulfilled, or unclear, according to defined rules.

Detailed assessment

Following the overview assessment, a detailed assessment focuses on the change between first and updated/second NDCs. The assessment encompasses five important NDC aspects: scope, mitigation ambition, mitigation completeness, mitigation implementation and transparency. Under each of these aspects, the information provided in the previous and new NDC is compared according to specified rules, and a rating is provided (i.e., positive, negative, no change or unclear). This detailed comparison between the old and new NDC submission, together with the overview assessment, aims at providing a robust overview of each NDC.

Results

The methodology was applied to 20 countries which submitted new or updated NDCs recently and which represent a wide range of national circumstances and NDC types. Of the analysed NDCs, several showed higher mitigation ambition compared to the first NDCs. However, in several cases the targets remained unchanged, or they were more ambitious than previous targets but did not lead to additional reductions than under a Party’s “current policies,” or were found to be less ambitious due to changes in parameters such as baseline emissions.

Most of the analysed NDCs covered all relevant greenhouse gases and sectors. As far as the implementation of the NDCs is concerned, the targets and measures have not yet been included in national legislation in many cases, but preparations are underway, especially for those countries that updated their target. Most NDCs provided the required information to facilitate clarity, transparency and understanding. Main messages for each of the analysed NDCs can be found in Table 1. The summary of the overview ratings for all analysed NDCs can be found in Table 2.

Table 1: Main messages for each of the analysed NDCs













Party	Main message
Argentina	Argentina is one of two countries that fulfilled all four elements. However, some details relating to the accounting of LULUCF emissions are not provided in the second NDC.
Australia	Australia’s updated NDC contains the same target as the first NDC, hence it did not increase its mitigation ambition. Most of the details to facilitate transparency are included, but details on implementation are not included.
Brazil	Brazil’s updated NDC contains the same percentage reduction as the first NDC, but it is less ambitious because base year emissions have been corrected upward compared to the first NDC. The NDC is comprehensive but no details on the implementation of the target are provided.
Cambodia	Cambodia pledged greater emission reductions in its updated NDC; however, some open questions remain relating to implementation and transparency.
Colombia	Colombia increased its mitigation ambition, transparency, and comprehensiveness in its updated NDC. Colombia now commits unconditionally to higher emissions reductions. While the target is not yet included in national legislation, plans are well underway.
European Union	The EU increased its mitigation ambition from a –40% emissions reduction to a –55% reduction. This new target was recently enshrined in EU legislation, but some questions relating to accounting modalities remain.
Jamaica	Jamaica extended the scope and ambition of its NDC; however, it does not yet cover all sectors.
Kenya	Kenya’s updated NDC target is slightly more ambitious than its previous submission, but still above current policy projections. It therefore does not represent an increase in mitigation ambition. While its previous target was fully conditional to international support, the new NDC states that 21% of the costs will be borne domestically.
Mexico	Mexico’s updated NDC is less ambitious – while the targets remain the same, the baseline scenario has been revised upwards leading to a higher emissions level in 2030. Unlike the first NDC, it no longer contains sectoral targets.

Party	Main message
Nepal	Nepal's second NDC is comprehensive and includes more information regarding sectoral targets; however, some details are still missing.
Panama	Panama's updated NDC covers two main sectors and includes an implementation plan, but not enough information is available to judge whether the updated NDC constitutes an increase in ambition.
Republic of Korea	The Republic of Korea's updated NDC target is the same as the target of its first NDC, when expressed in terms of an absolute emissions limit. Hence it did not increase mitigation ambition ² . The NDC is comprehensive and information on implementation is provided.
Republic of Moldova	The Republic of Moldova pledged slightly higher emissions reductions in its updated NDC. However, it cannot be judged whether the NDC constitutes an increase in ambition because of various methodological updates which have taken place since the first NDC was communicated.
Russian Federation	The Russian Federation's first NDC results in slightly lower emissions levels in 2030 but it is not more ambitious than their INDC, as the target can still be reached without additional policies.
Rwanda	Rwanda's updated NDC is more ambitious and transparent than its first NDC. While Rwanda had previously not specified a reduction target and a baseline, it now sets an overall emissions reduction target for 2030 with unconditional and conditional components.
Tonga	Tonga's second NDC introduced a new sectoral emissions target, which cannot be compared directly to the first NDC. The NDC covers the energy sector only; it provides information on implementation for several sectors.
United Kingdom	The United Kingdom is one of two countries that fulfilled all four elements. The government submitted a more ambitious mitigation target. Its NDC is comprehensive and transparently described, and the framework for its implementation is in place.
United States of America	The NDC submitted by the USA in 2021 constitutes an increase in ambition, as the annual emissions reductions required to meet the new target are considerably higher compared to the original target. However, details on implementation are still open.
Viet Nam	Viet Nam's updated NDC is numerically stronger than the previous NDC. However, it is not more ambitious as both its unconditional and conditional targets can be met without additional policies. The updated NDC covers all sectors and the main greenhouse gases.
Zambia	Zambia's updated NDC does not constitute an increase in ambition, as the pledged emissions reductions remain unchanged compared to the first NDC. Zambia increased the coverage of gases in its NDC and provided comprehensive information relating to transparency.

² The updated NDC provides that "the Korean government will seriously consider raising ambition level in its NDC before 2025." (Republic of Korea, 2020b). In May 2021, the president of the Republic of Korea announced that it plans to "raise its national greenhouse gas reductions targets for 2030" and present it at COP26 (planned for November 2021)(Hyun-woo, 2021b).

Table 2: Overview rating of four key elements for each of the analysed NDCs

Party	Increased ambition	Comprehensiveness	Implementation plan	Transparency
Argentina				
Australia				
Brazil				
Cambodia				
Colombia				
European Union				
Jamaica				
Kenya				
Mexico				
Nepal				
Panama				
Republic of Korea				
Republic of Moldova				
Russian Federation				
Rwanda				
Tonga				
United Kingdom				

Party	Increased ambition	Comprehensiveness	Implementation plan	Transparency
United States of America				
Viet Nam				
Zambia				

Possible next steps

Based on the analysis of NDCs in this project, the following steps may help improve the design and implementation of NDCs.

First, smaller developing countries still face challenges in providing sufficient data to prepare a mitigation strategy and targets for all relevant sectors. International support is needed to help them to generate this data.

Second, many countries have better understood and reported the financial support needed to implement ambitious mitigation action compared to previous NDCs, but future support to NDC preparation could focus on this element.

Third, the analysis showed that governments can make their NDCs “look good” by fulfilling all requirements on comprehensiveness and transparency or by reformulating their target. However, only after translation of the targets to a common metric and deeper analysis it becomes clear that it is not more ambitious, or it lacks an implementation plan. To uncover such deficiencies and to make the ambition cycle of the Paris Agreement a success, a step of carefully checking and translating the NDCs to a common metric is necessary. This step is currently undertaken by independent research groups (such as this project) but could be integrated more deeply into the official process under the Paris Agreement. For example, in the Global Stocktake under the Paris Agreement, input from countries is considered together with submissions from non-Party stakeholders and UNFCCC observer organisations. It will be critical for the Global Stocktake to make use of all input provided, to gain an accurate picture of current ambition levels and to point out the urgent need to further enhance action on climate change.

Zusammenfassung

Einleitung

Im Rahmen des Übereinkommens von Paris sind alle Länder verpflichtet, alle fünf Jahre nationale Beiträge (Nationally Determined Contributions - NDCs) zu entwickeln und einzureichen, in denen sie ihre Klimaziele und ihre Beiträge zur Erreichung der Ziele des Übereinkommens von Paris darlegen. Jede NDC-Einreichung soll einen Fortschritt gegenüber der vorherigen darstellen und die höchstmögliche Ambition eines Landes widerspiegeln.

Die ersten NDCs wurden im Jahr 2015 eingereicht³. Fünf Jahre später haben Länder neue NDCs eingereicht oder sind dabei, diese einzureichen - entweder als Aktualisierung ihrer ersten Einreichung oder als zweiter NDC.

Anforderungen an die nationalen Beiträge

Die Informationen, die bei der Einreichung von NDCs zur Verfügung gestellt werden müssen, sind in einem Beschluss festgelegt, der auf der Klimakonferenz in Kattowitz 2018 verabschiedet wurde. Diese sogenannten "Informationen zur Erleichterung von Klarheit, Transparenz und Verständnis der NDCs" (ICTU) umfassen folgende Elemente:

- ▶ Quantifizierbare Informationen über den Referenzpunkt
- ▶ Zeitrahmen und/oder Zeiträume für die Umsetzung
- ▶ Umfang und Abdeckung
- ▶ Planungsprozess
- ▶ Annahmen und methodische Ansätze
- ▶ Wie die Vertragspartei ihr NDC für fair und ambitioniert hält
- ▶ Wie der NDC zur Erreichung des Ziels der Konvention beiträgt

Diese Informationen sind bei der Einreichung des zweiten und der folgenden NDCs verpflichtend; Vertragsparteien, die ihren ersten NDC bis 2020 übermitteln oder aktualisieren, werden nachdrücklich ermutigt, diese Informationen bereitzustellen.

Auf der Klimakonferenz in Kattowitz haben die Vertragsparteien auch eine Anleitung zur Abrechnung der NDCs verabschiedet, d.h. wie der Fortschritt bei der Umsetzung eines NDCs mit den NDC-Zielen verglichen werden kann. Die Vertragsparteien sind verpflichtet, ihre NDCs in Übereinstimmung mit der Anleitung in Anhang II des Beschlusses 4/CMA.1 abzurechnen, beginnend mit ihrem zweiten NDC. Sie können diese Anleitung auch bereits auf ihr erstes NDC anzuwenden. Die eigentliche Bilanzierung, d.h. die Aufsummierung der Emissionen bzw. des Abbaus von Treibhausgasen gemäß dem Leitfaden und der Vergleich dieser Emissionen/des Abbaus mit dem NDC-Ziel, erfolgt durch die Vertragsparteien, wenn sie ihre zweijährlichen Transparenzberichte erstellen.

Überblick über die NDC-Tracking- und Analyseinstrumente

Um beurteilen zu können, ob die Länder der Intention des Übereinkommens von Paris folgen und Beiträge einreichen, die ihre höchstmögliche Ambition widerspiegeln, müssen die Details

³ NDCs, die vor der Verabschiedung des Übereinkommens von Paris eingereicht wurden, werden als ‚beabsichtigte nationale Beiträge‘ bezeichnet (INDC).

der Einreichungen analysiert werden. Die Heterogenität der NDCs erschwert jedoch einen Vergleich zwischen den Ländern und zwischen den Einreichungen.

Aus diesem Grund haben mehrere Institutionen Instrumente entwickelt, die einen Überblick über die NDCs der Länder geben, den Vergleich von Komponenten und Indikatoren zwischen ihnen erleichtern und eine Bewertung verschiedener inhaltlicher Aspekte ermöglichen. Zu diesen Instrumenten gehören der „Climate Target Update Tracker“ des „Climate Action Tracker“, der „Climate Transparency NDC Transparency Check“, der „Climate Watch 2020 NDC Tracker“ des WRI, der „NDC Explorer“ des Deutschen Instituts für Entwicklungspolitik und „#NDCsWeWant“ des WWF. Jedes dieser Instrumente hat einen etwas anderen Fokus.

Der „Climate Target Update Tracker“ des „Climate Action Tracker“ ist das einzige Instrument, das die NDC-Ziele in eine gemeinsame Metrik übersetzt, die einen direkten Vergleich zwischen früheren und aktualisierten NDC-Zielen ermöglicht. Er kombiniert eine qualitative und quantitative Bewertung der Klimaziele und -maßnahmen eines Landes, die eine direkte Verbindung zu den Temperaturzielen des Übereinkommens von Paris herstellt. Die Analyse konzentriert sich jedoch ausschließlich auf den Klimaschutz und schließt die Anpassungs- und Finanzierungskomponenten der NDCs aus. Eine Schwierigkeit bei der Übersetzung der Ziele in eine gemeinsame Metrik ist, dass die Analyse je nach den verfügbaren Daten unterschiedliche Annahmen bezüglich der Emissionen und des Abbaus von Treibhausgasen durch den Forstsektor enthält. Außerdem ist eine detaillierte Bewertung nur für 40 Vertragsstaaten verfügbar.

Das Instrument „Climate Transparency NDC Transparency Check“ basiert weitgehend auf ICTU-Elementen aus der Entscheidung 1/CP.21 und dem Regelwerk von Katowitz. Dieses Instrument hat wertvolle Stärken, wie z.B. die eine umfassende und systematische Checkliste der wichtigsten NDC-Elemente, die einen Vergleich der NDC-Inhalte zwischen Ländern und verschiedenen Aktualisierungsrunden ermöglicht. Es enthält auch Informationen über den NDC-Entwicklungsprozess, das Ziel selbst und seine Umsetzung. Das Instrument spiegelt jedoch nur den Inhalt des NDCs wider und verzichtet darauf, eine qualitative Analyse durchzuführen oder die Gesamtambition des NDC-Ziels zu bewerten.

Der „Climate Watch 2020 NDC Tracker“ wird vom World Resources Institute betrieben. Dieses Instrument deckt 153 Länder ab und gibt einen Überblick darüber, welche Länder ihre nationalen Klimaverpflichtungen aktualisieren oder verbessern bzw. die Absicht haben, dies im Vorfeld der COP26 zu tun. Es gliedert Auszüge aus NDCs in verschiedenen Kategorien und ermöglicht es, den Inhalt mehrerer NDCs zu vergleichen. Allerdings bietet das Instrument für einige Kategorien nur eine „Ja/Nein“-Checkliste. Dieses Instrument bietet keine detaillierte Analyse der NDCs.

Der NDC-Explorer des Deutschen Instituts für Entwicklungspolitik ist ein Online-Tool, das die NDCs von Ländern qualitativ und quantitativ analysiert und vergleicht. Er deckt 169 Länder ab und ermöglicht einen dynamischen Vergleich von bis zu drei NDCs. Allerdings sind die Informationen über die Ziele nur qualitativ, was eine Bewertung ihres Ambitionsniveaus erschwert, es gibt keine eigene Kategorie für die Klarheit des methodischen Ansatzes, und es werden keine unterschiedlichen NDC-Aktualisierungsrunden analysiert oder verglichen. Das Instrument wurde zuletzt im März 2020 aktualisiert.

Das Instrument „#NDCsWeWant“ des WWF bietet einen direkten Vergleich der vorherigen und der aktualisierten NDCs der Länder anhand der #NDCsWeWant-Checkliste mit zwanzig Kriterien und vergibt eine kombinierte Bewertung für jedes Land: „NDC we want“, „short way to go“, „some way to go“, und „NDC we don't want“. Das Instrument deckt 16 Länder ab. Dennoch kann das Instrument bei der Bewertung der Verbesserung der Minderungsambitionen der

vorgeschlagenen Ziele zu kurz greifen. Es berücksichtigt weder die Transparenz, die zugrunde liegenden Annahmen noch die Methodik der NDCs.

Zielsetzung des Projekts

Aufgrund der Vielfalt der berücksichtigten Elemente und der unterschiedlichen Herangehensweisen der oben genannten Instrumente bei der Bewertung der NDC-Einreichungen besteht ein Bedarf an weiteren Analysen, die umfassend, replizierbar und vergleichbar, aber dennoch prägnant sind. Daher zielt dieses Projekt darauf ab, diese Kriterien zu berücksichtigen und neue Erkenntnisse über die Gestaltung von NDCs zu liefern.

Methode

Aufbauend auf einer Analyse der Stärken, aber auch der Grenzen der oben vorgestellten NDC-Tracking- und Analyseinstrumente, orientiert sich die vorgeschlagene Methode an vier grundlegenden Kriterien:

- ▶ **Vergleichbarkeit:** Systematische Bewertung der NDCs der Länder, um eine Vergleichbarkeit zwischen ihnen zu ermöglichen.
- ▶ **Umfassende Darstellung:** Um alle relevanten verpflichtenden und nicht-verpflichtenden NDC-Elemente zu erfassen.
- ▶ **Prägnanz:** Um gut verständliche und aufschlussreiche Bewertungen zu liefern.
- ▶ **Replizierbarkeit:** Unabhängig von der Person, die das Verfahren anwendet, soll es zu den gleichen Ergebnissen führen.

Übersichtsbewertung Diesen Kriterien folgend, bewertet unsere Methode die NDCs entlang der Schlüsselemente, die für den Erfolg des NDC-Ambitionszyklus entscheidend sind. Eine Übersichtsbewertung berücksichtigt die folgenden vier Elemente:

- ▶ **Erhöhte Ambition:** Der Fokus liegt auf den Minderungsambitionen, wobei bewertet wird, ob die neuen/aktualisierten NDCs ambitionierter sind als die vorherigen und ob diese zu zusätzlichen Treibhausgasreduktionen im Vergleich zu einem „aktuelle Politik“-Szenario führen".
- ▶ **Umfassende Darstellung:** Umfang der NDCs in Bezug auf die Abdeckung von Emissionen, Sektoren und nicht verbindlichen Themen, wie z.B. Anpassung.
- ▶ **Umsetzungsplan:** Beurteilung, ob die NDCs in den nationalen politischen Entscheidungsprozess eingebettet sind, um die nationale Klimapolitik zu steuern.
- ▶ **Transparenz:** Bewertung, ob die Informationen klar sind und den Anforderungen des Übereinkommens von Paris entsprechen, um Vertrauen in die Informationen in den NDCs zu schaffen.

Die Übersichtsbewertung umfasst für jedes Land eine kurze Zusammenfassung der Bewertung des NDCs mit den Ergebnissen, eine dazu gehörende Tabelle und eine Abbildung mit Emissionen, historisch und projiziert, basierend auf der aktuellen Politik, und mit den bisherigen und aktuellen NDC-Zielen.

Die Methode bewertet den neuen/aktualisierten NDC unter Berücksichtigung der vier wesentlichen Elemente bei der Ausgestaltung des NDCs, indem jedes dieser Kernelemente nach definierten Regeln als erfüllt, teilweise erfüllt, nicht erfüllt oder unklar bewertet wird.

Detaillierte Bewertung

Im Anschluss an die Übersichtsbewertung konzentriert sich die Detailbewertung auf die Veränderung zwischen dem ersten und dem aktualisierten/zweiten NDC. Die Bewertung umfasst fünf wichtige NDC-Aspekte: Umfang, Minderungsambition, Vollständigkeit der Minderung, Umsetzung der Minderung und Transparenz. Unter jedem dieser Aspekte werden die Informationen im ursprünglichen und neuen NDC nach festgelegten Regeln verglichen und eine Bewertung abgegeben (d.h. positiv, negativ, keine Änderung oder unklar). Dieser detaillierte Vergleich zwischen der ursprünglichen und der neuen NDC-Einreichung zielt zusammen mit der Übersichtsbewertung darauf ab, einen robusten Überblick über jeden NDC zu geben.

Ergebnisse

Die Methode wurde auf 20 Länder angewandt, die kürzlich neue oder aktualisierte NDCs eingereicht haben und die eine große Bandbreite an nationalen Gegebenheiten und NDC-Typen repräsentieren. Von den analysierten NDCs zeigten mehrere eine höhere Ambition zur Emissionsminderung im Vergleich zu den ersten NDCs. In mehreren Fällen blieben die Ziele jedoch unverändert, oder sie waren zwar ambitionierter als frühere Ziele, führten aber nicht zu zusätzlichen Reduktionen im Vergleich zu einem „aktuelle Politik“-Szenario, oder wurden aufgrund geänderter Parameter, wie z.B. der Baseline-Emissionen, als weniger ambitioniert eingestuft.

Die meisten der analysierten NDCs deckten alle relevanten Treibhausgase und Sektoren ab. Was die Umsetzung der NDCs betrifft, so wurden die Ziele und Maßnahmen in vielen Fällen noch nicht in die nationale Gesetzgebung aufgenommen, aber die Vorbereitungen sind im Gange, insbesondere bei den Ländern, die ihr Ziel aktualisiert haben. Die meisten NDCs lieferten die erforderlichen Informationen, um Klarheit, Transparenz und Verständnis zu erleichtern. Die Hauptaussagen für jedes der analysierten NDCs sind in Tabelle 1 zu finden. Die Zusammenfassung der Übersichtsbewertungen für alle analysierten NDCs ist in Tabelle 2 dargestellt.

Tabelle 1: Hauptaussagen für jedes der analysierten NDCs

































Vertragspartei	Hauptaussage
Argentinien	Argentinien ist eines von zwei analysierten Ländern, die bei allen vier Elementen mit "erfüllt" bewertet wurden. Einige Details zur Anrechnung von LULUCF-Emissionen sind im zweiten NDC jedoch nicht enthalten.
Australien	Der aktualisierte NDC Australiens enthält das gleiche Ziel wie der erste NDC, daher hat Australien seine Minderungsambitionen nicht erhöht. Die meisten Details zur Erleichterung der Transparenz sind enthalten, aber Details zur Umsetzung fehlen.
Brasilien	Der aktualisierte NDC Brasiliens enthält die gleiche prozentuale Reduktion wie der erste NDC, ist aber weniger ambitioniert, da die Basisjahremissionen im Vergleich zum ersten NDC nach oben korrigiert wurden. Der NDC ist umfassend, aber es werden keine Details zur Umsetzung des Ziels genannt.
Europäische Union	Die EU hat ihr Reduktionsziel von -40% auf -55% erhöht. Das neue Ziel wurde kürzlich in die EU-Gesetzgebung übernommen, es verbleiben jedoch offene Fragen zu den Abrechnungsmodalitäten.
Jamaika	Jamaika hat den Umfang und den Ehrgeiz seines NDCs erweitert; allerdings deckt es noch nicht alle Sektoren ab.

Vertragspartei	Hauptaussage
Kambodscha	Kambodscha hat sich in seinem aktualisierten NDC zu größeren Emissionsreduktionen verpflichtet; es bleiben jedoch einige offene Fragen in Bezug auf Umsetzung und Transparenz.
Kenia	Das aktualisierte NDC-Ziel Kenias ist etwas ehrgeiziger als die vorherige Vorlage, liegt aber immer noch über den Emissionen, die mit den derzeitigen Maßnahmen projiziert werden. Es stellt jedoch keine Erhöhung der Ambition dar, da sowohl die unbedingten als auch die bedingten Ziele ohne zusätzliche Maßnahmen erreicht werden können. Während das frühere Ziel vollständig von internationaler Unterstützung abhängig war, besagt der neue NDC, dass 21 % der Kosten im Inland getragen werden sollen.
Kolumbien	Kolumbien hat in seinem aktualisierten NDC seine Minderungsambitionen, seine Transparenz und den Umfang erhöht. Kolumbien verpflichtet sich nun bedingungslos zu höheren Emissionsminderungen. Das Ziel ist zwar noch nicht in der nationalen Gesetzgebung verankert, aber die Planungen sind im Gange.
Mexiko	Der aktualisierte NDC Mexikos ist weniger ambitioniert. Während die Ziele gleichbleiben, wurde das Basisszenario nach oben korrigiert, was zu einem höheren Emissionsniveau im Jahr 2030 führt. Anders als der erste NDC enthält er keine sektoralen Ziele mehr.
Nepal	Nepals zweiter NDC ist umfassend und enthält mehr Informationen zu sektoralen Zielen; einige Details fehlen jedoch.
Panama	Panamas aktualisierter NDC deckt zwei Hauptsektoren ab und enthält einen Umsetzungsplan, aber es sind nicht genügend Informationen verfügbar, um zu beurteilen, ob der aktualisierte NDC eine Steigerung der Ambition darstellt.
Republik Korea	Das aktualisierte NDC-Ziel der Republik Korea entspricht dem Ziel des ersten NDCs, wenn man es als absolute Emissionsgrenze ausdrückt. Daher hat es die Ambitionen zur Emissionsminderung nicht erhöht ⁴ . Der NDC ist umfassend und es werden Informationen zur Umsetzung bereitgestellt.
Republik Moldau	Die Republik Moldau hat in ihrem aktualisierten NDC etwas höhere Emissionsminderungen zugesagt. Es kann jedoch nicht beurteilt werden, ob der NDC eine Steigerung der Ambition darstellt, da seit der Veröffentlichung des ersten NDC verschiedene methodische Aktualisierungen vorgenommen wurden.
Ruanda	Der aktualisierte NDC Ruandas ist ehrgeiziger und transparenter als sein erster NDC. Während Ruanda zuvor kein Reduktionsziel und keine Baseline angegeben hatte, setzt es nun ein Gesamtreduktionsziel für 2030 mit unbedingten und bedingten Komponenten.
Russische Föderation	Der erste NDC der Russischen Föderation führt zu leicht niedrigeren Emissionswerten im Jahr 2030, ist aber nicht ehrgeiziger als der INDC, da das Ziel auch ohne zusätzliche Maßnahmen erreicht werden kann.

⁴ Laut dem neuen NDC wird die koreanische Regierung eine Steigerung der Ambition "ernsthaft in Erwägung ziehen" (Republic of Korea, 2020b). Der koreanische Präsident hat im Mai 2021 angekündigt, das Reduktionsziel zu erhöhen und bei der COP26 im November 2021 zu präsentieren (Hyun-woo, 2021b).

Vertragspartei	Hauptaussage
Sambia	Der aktualisierte NDC Sambias stellt keine Erhöhung der Ambition dar, da die zugesagten Emissionsreduktionen im Vergleich zum ersten NDC unverändert bleiben. Sambia hat die Abdeckung der Gase in seinem NDC erhöht und umfassende Informationen in Bezug auf die Transparenz bereitgestellt.
Tonga	Mit dem zweiten NDC von Tonga wurde ein neues sektorales Emissionsziel eingeführt, das nicht direkt mit dem ersten NDC verglichen werden kann. Der NDC deckt nur den Energiesektor ab; er liefert Informationen zur Umsetzung für mehrere Sektoren.
Vereinigte Staaten	Der von den USA im Jahr 2021 eingereichte NDC stellt eine Steigerung der Ambition dar, da die zur Erfüllung des neuen Ziels erforderlichen jährlichen Emissionsreduktionen im Vergleich zum ursprünglichen Ziel deutlich höher sind. Details zur Umsetzung sind jedoch noch offen.
Vereinigtes Königreich	Das Vereinigte Königreich ist eines von zwei analysierten Ländern, die bei allen vier Elementen mit "erfüllt" bewertet wurden. Die Regierung hat ein ehrgeizigeres Minderungsziel vorgelegt. Sein NDC ist umfassend und transparent dargestellt und der Rahmen für seine Umsetzung ist vorhanden.
Vietnam	Der aktualisierte NDC Vietnams ist zahlenmäßig wirksamer als der vorherige NDC. Es ist jedoch nicht ehrgeiziger, da sowohl die unbedingten als auch die bedingten Ziele ohne zusätzliche Maßnahmen erreicht werden können. Der aktualisierte NDC deckt alle Sektoren und die wichtigsten Treibhausgase ab.

Tabelle 2: Übersichtsbewertung von vier Schlüsselementen für jedes der analysierten NDCs

Partei	Erhöhte Ambition	Umfassende Darstellung	Umsetzungsplan	Transparenz
Argentinien				
Australien				
Brasilien				
Europäische Union				
Jamaika				
Kambodscha				
Kenia				
Kolumbien				

Partei	Erhöhte Ambition	Umfassende Darstellung	Umsetzungsplan	Transparenz
Mexiko				
Nepal				
Panama				
Republik Korea				
Republik Moldau				
Ruanda				
Russische Föderation				
Sambia				
Tonga				
Vereinigte Staaten				
Vereinigtes Königreich				
Vietnam				

Mögliche nächste Schritte

Basierend auf der Analyse der NDCs in diesem Projekt können die folgenden Schritte helfen, die Gestaltung und Umsetzung von NDCs zu verbessern.

Erstens stehen kleinere Entwicklungsländer immer noch vor der Herausforderung, genügend Daten zur Verfügung zu stellen, um eine Minderungsstrategie und Ziele für alle relevanten Sektoren zu erstellen. Internationale Unterstützung ist notwendig, um ihnen bei der Erstellung dieser Daten zu helfen.

Zweitens haben viele Länder Informationen zur finanziellen Unterstützung, die für die Umsetzung ehrgeiziger Minderungsmaßnahmen benötigt wird, im Vergleich zu früheren NDCs besser erfasst und berichtet, aber zukünftige Unterstützung für die NDC-Vorbereitung könnte sich auf dieses Element konzentrieren.

Drittens zeigte die Analyse, dass Regierungen ihre NDCs "gut aussehen" lassen können, indem sie alle Anforderungen an Vollständigkeit und Transparenz erfüllen oder ihr Ziel neu formulieren. Erst nach der Übersetzung der Ziele in eine gemeinsame Metrik und einer tieferen Analyse wird jedoch deutlich, dass sie nicht ehrgeiziger sind oder dass ein Umsetzungsplan fehlt. Um solche Defizite aufzudecken und den Ambitionszyklus des Übereinkommens von Paris zu einem Erfolg zu machen, ist eine sorgfältige Prüfung und Übersetzung der NDCs in eine gemeinsame Metrik notwendig. Dieser Schritt wird derzeit von unabhängigen Forschungsgruppen (wie diesem Projekt) unternommen, könnte aber tiefer in den offiziellen Prozess im Rahmen des Übereinkommens von Paris integriert werden. Bei der Globalen Bestandsaufnahme im Rahmen des Übereinkommens von Paris werden zum Beispiel die Informationen der Länder zusammen mit den Informationen von Nichtvertragsstaaten und Beobachterorganisationen berücksichtigt. Es wird für die Globale Bestandsaufnahme entscheidend sein, alle diese Informationen zu nutzen, um ein genaues Bild des aktuellen Ambitionsniveaus zu erhalten und die dringende Notwendigkeit aufzuzeigen, die Maßnahmen zum Klimawandel weiter zu verbessern.

1 Introduction

Under the Paris Agreement, countries are mandated to prepare and submit Nationally Determined Contributions (NDCs) every five years detailing their climate targets and their contributions towards achieving the goals of the Paris Agreement. Each NDC submission is to represent a progression beyond the previous one and reflect a country's highest possible ambition.

The first submissions of (I)NDCs took place in 2015. Five years later, countries have submitted or are in the process of submitting new NDCs—either updating their first submission or preparing their second one.

Following the adoption of the Paris Agreement, more information on the contents of NDCs has been defined. At the climate change conference in Katowice in 2018 (UNFCCC COP 24), guidance for communicating NDCs was adopted. Decision 4/CMA.1 (UNFCCC, 2018b) lays out the 'information to facilitate clarity, transparency and understanding of NDCs'. This decision also provides guidance for the accounting of NDCs. In addition, Parties adopted the modalities, procedures and guidelines for the transparency framework in decision 18/CMA.1 (UNFCCC, 2018a), which address the information necessary to track progress made in implementing and achieving NDCs. However, the guidelines under decision 4/CMA.1 will only be mandatory for countries when submitting their second NDCs. Countries submitting an updated NDC are encouraged to include this information, but not mandated to do so. This means that countries' recent NDC submissions remain very heterogenous in nature, containing different target formulations, emphasis, and information on approaches to climate change mitigation such as assumptions, reference points, and scope.

To be able to evaluate whether countries are honouring the spirit of the Paris Agreement and submitting contributions that reflect their highest possible ambition, it is key to analyse the details of the submissions. However, the heterogeneity of NDCs poses barriers to a comparison between countries and between submissions.

There are several instruments that compare and assess different aspects of NDCs. These include the CAT Climate Target Update Tracker (2021b), the Climate Transparency NDC Transparency Check (2020), ClimateWatch 2020 NDC Tracker (WRI, 2021), Deutsches Institut für Entwicklungspolitik NDC Explorer (2020), and the WWF #NDCsWeWant (2021). The focus of each of these instruments is slightly different, and each provides an assessment of NDCs that is comprehensive, concise, replicable and/or comparable to a varying degree.

The purpose of this project was to develop a methodology to systematically assess the design of NDCs and to use it for the analysis of 20 NDCs. Our methodology aims to provide new insights and fill a gap by addressing the four key elements that are critical for the success of the NDC ambition cycle:

1. Increased mitigation ambition;
2. Comprehensiveness;
3. Implementation plan; and
4. Transparency.

This report is structured as follows. Chapter 2 provides an overview of the requirements for nationally determined contributions, namely the information to be submitted, the accounting guidance and the information necessary to track progress in implementing and achieving NDCs. In chapter 3, the five NDC tracking and analysis instruments mentioned above are summarised

with respect to the NDC elements which they analyse and with respect to their strengths and weaknesses.

Chapter 4 introduces the methodology for analysing the design of NDCs. It is described in a way that can serve as guidance for the analysis of additional NDCs. Twenty selected NDCs are analysed in chapter 5. They were selected with a wide range of national circumstances and NDC types in mind. However, this selection is not necessarily representative of the entirety of NDCs. As an example, several large emitters were analysed for this project, but relatively few small countries or countries with targets other than total greenhouse gas emissions were selected.

Chapter 6 provides conclusions of the analysis, and the appendix summarises recent publications related to NDC ambition, namely the UNEP Emissions Gap Report (UNEP, 2018, 2019, 2020), the Guide to Strengthening National Climate Plans by 2020 (Fransen *et al.*, 2019), and the Next Steps under the Paris Agreement and Katowice Climate Package (GIZ, 2019).

2 Requirements for nationally determined contributions

2.1 Introduction

According to Article 4 of the Paris Agreement, each Party shall prepare, communicate and maintain successive nationally determined contributions (NDCs). In their NDCs, Parties communicate their efforts to contribute to the global response to climate change, and each NDC is to represent a progression beyond the Party's then current NDC and reflect its highest possible ambition.

At the climate change conference in Katowice in 2018, guidance for communicating NDCs was adopted. Decision 4/CMA.1 (UNFCCC, 2018b) lays out the 'information to facilitate clarity, transparency and understanding of NDCs'. This decision also provides guidance for the accounting of NDCs. In addition, Parties adopted the modalities, procedures and guidelines for the transparency framework in decision 18/CMA.1 (UNFCCC, 2018a), which address the information necessary to track progress made in implementing and achieving NDCs. Figure 1 provides an overview of the rules for communicating NDCs.

Figure 1: Rules for communicating NDCs

When to communicate?	What to communicate?	How to account?	How to track progress?
Decision 1/CP.21, paragraphs 22-25	Decision 4/CMA.1, Annex I	Decision 4/CMA.1, Annex II	Decision 18/CMA. 1, Annex, Chapter III
New/updated NDC in 2020 Every five years thereafter	Information to facilitate clarity, transparency and understanding	Accounting guidance	Information necessary to track progress in implementing and achieving NDCs

Source: Decisions 1/CP.21 (UNFCCC 2015), 4/CMA.1 (UNFCCC, 2018b), 18/CMA.1 (UNFCCC, 2018a); own illustration, Öko-Institut.

Towards the end of 2020, many Parties submitted new or updated NDCs, in line with a request made by the COP in Paris in decision 1/CP.21 (UNFCCC 2015). To provide a basis for evaluating to what extent the new or updated NDCs adhere to the information requirements, it is therefore timely to present an overview of the rules for communicating NDCs, with a focus on those aspects that are particularly relevant for new and updated NDCs.

This chapter provides an overview of the rules adopted in Katowice – on the information on NDCs, on the accounting of NDCs, and on tracking of progress. Some aspects of these rules are particularly relevant for new and updated NDCs. These aspects are listed below.

Aspects which are particularly relevant for new and updated NDCs

- ▶ The first NDCs, mostly submitted in 2015 and 2016, contain limited information on assumptions and methodological approaches. New and updated NDCs submitted in 2020 contain more detailed information, such as on the target, on indicators and data sources.
- ▶ Information on the reference point, the target and the scope/coverage of a new or updated NDC is central for assessing whether it represents a progression beyond the previous NDC.
- ▶ Parties that only submit an updated NDC, rather than a new one, are strongly encouraged to provide the information listed in decision 4/CMA.1 but are not required to do so. Hence it has to be taken into account that the information on updated NDCs, including on the accounting approach, may not be in line with the requirements adopted in 2018.

2.2 Information on NDCs

The information to be provided when submitting an NDC is laid down in a decision adopted at the climate change conference in Katowice in 2018. Decision 4/CMA.1 lists in its annex I the ‘information to facilitate clarity, transparency and understanding of NDCs’ (ICTU in short). This information is mandatory when submitting the second and subsequent NDCs; Parties that communicate or update their first NDCs by 2020 are strongly encouraged to provide this information. It covers seven main topics, as illustrated in Figure 2.

Figure 2: Topics covered by annex I to decision 4/CMA.1

1. Quantifiable information on the reference point	4. Planning process	5. Assumptions and methodological approaches	6. How the Party considers that its NDC is fair and ambitious
2. Time frames and/or periods for implementation	<ul style="list-style-type: none"> • Information on the planning process • Specific information applicable to Parties that act jointly • Input from the global stocktake • Specific information relating to mitigation co-benefits 	<ul style="list-style-type: none"> • Assumptions and methodological approaches for accounting • Existing methods under the Convention • IPCC methodologies LULUCF approaches • Intention to use Article 6 	7. How the NDC contributes towards achieving the objective of the Convention
3. Scope and coverage			

Source: Decision 4/CMA.1 (UNFCCC, 2018b); own illustration, Öko-Institut.

In the following paragraphs, these seven topics are summarised briefly.

2.2.1 Quantifiable information on the reference point

Most NDCs contain targets which are expressed relative to a reference year or period. Besides defining this year or period, the target has to be expressed numerically (such as a percentage reduction of greenhouse gas emissions), along with the reference indicators (such as greenhouse gas emissions). For components of NDCs where such quantifiable information is not applicable, Parties are required to provide other relevant information.

2.2.2 Time frames and/or periods for implementation

Parties have to provide the start and end date of the NDC implementation period. As the targets may apply to one final year or to a longer period, Parties need to specify whether they use single-year or multi-year targets.

2.2.3 Scope and coverage

This section includes a general description of the target and of the sectors, categories, gases and carbon pools covered by NDCs. Parties also need to describe how they strive to include all categories of anthropogenic emissions and removals. For NDCs that include adaptation actions and/or economic diversification plans, the related projects, measures and initiatives and the resulting mitigation co-benefits have to be described.

2.2.4 Planning process

This section covers information on the planning to prepare a Party's NDC and to implement it, including institutional arrangements and contextual information. Regional economic integration organisations that submit an NDC jointly (this applies to the European Union and its Member States) have to provide specific information that is applicable to them, e.g. how they collaborate to ensure that the NDC is achieved. Once the first global stocktake has taken place, its results will feed into the NDC planning process and Parties will report how their NDC planning has been informed by the global stocktake. Finally, information is required specifically for those NDCs that consist of adaptation actions and/or economic diversification plans.

2.2.5 Assumptions and methodological approaches

The Party has to explain the assumptions for accounting for greenhouse gas emissions and removals and for the accounting for the implementation of policies and measures or strategies. It also has to explain the methodologies and metrics used for estimating greenhouse gas emissions and removals, and other assumptions and methodologies, such as how the reference indicators, baselines or reference levels are constructed. The Party must also specify assumptions and methodological approaches related to the land sector, namely on how they will address natural disturbances on managed land, account for harvested wood products and take into account the effects of age-class structure in forests. Finally, the Party is required to indicate if it intends to make use of voluntary cooperation under Article 6 of the Paris Agreement.

2.2.6 How the Party considers that its NDC is fair and ambitious

The Party has to describe how it considers that its NDC is fair and ambitious in the light of its national circumstances, and how it has addressed specific principles mentioned in the Paris Agreement, namely the progression of ambition over time, aiming at absolute emission reduction targets, and the special circumstances of the least developed countries and small island developing states.

2.2.7 How the NDC contributes towards achieving the objective of the Convention

Finally, information is required on how the NDC contributes towards achieving the objective of the United Nations Framework Convention on Climate Change, which is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Parties also need to explain how their NDCs contribute to the Paris Agreement's temperature goal, which is to hold the global temperature increase to well below 2°C and of pursue efforts to limit this increase to 1.5°C above pre-industrial levels, and the

Paris Agreement’s emissions goal, which is to aim to reach global peaking of greenhouse gas emissions as soon as possible, to undertake rapid reductions thereafter, and to achieve a balance between anthropogenic emissions and removals in the second half of the century.

According to Article 7 of the Paris Agreement, an adaptation communication may be submitted as a component of or in conjunction with an NDC. Guidance in relation to the adaptation communication is provided in decision 9/CMA.1 (UNFCCC, 2018c). According to the annex to this decision, Parties are invited to provide the elements shown in Figure 3 in their adaptation communication. Parties that choose to submit an adaptation communication as a component or in conjunction with their NDC are encouraged to use this guidance, as appropriate.

Figure 3: Elements of an adaptation communication

Circumstances	Planning and support	Adaptation actions	Other
(a) National circumstances, institutional arrangements	(c) National adaptation priorities, strategies, policies, plans, goals and actions	(e) Implementation of adaptation actions and plans	(g) Contribution to other international frameworks
(b) Impacts, risks and vulnerabilities	(d) Implementation and support needs; provision of support	(f) Adaptation actions and/or economic diversification plans	(g) Gender-responsive adaptation action, traditional knowledge
			(i) Any other information

Source: Decision 9/CMA.1 (UNFCCC, 2018c); own illustration, Öko-Institut.

2.3 NDC accounting

Besides guidance on NDC-related information, decision 4/CMA.1 provides in its Annex II guidance on how to account for NDCs, i.e. how to compare the progress made in implementing an NDC to the NDC target(s). In the majority of NDCs these targets are expressed in greenhouse gas emissions. The guidance focuses on the accounting for anthropogenic emissions and removals.

Parties are required to account for their NDCs in accordance with the guidance contained in Annex II to decision 4/CMA.1, starting with their second NDCs. They may elect to apply such guidance to their first NDCs. The actual accounting process, i.e. the summing up of emissions and removals in accordance with the guidance and the comparison of these emissions/removals with the NDC target, is done by Parties when they prepare their biennial transparency reports. In these reports, the results of the accounting process are provided as part of the “information necessary to track progress in implementing and achieving NDCs” (cf. section 2.4, below). Figure 4 provides the elements of the accounting guidance and these elements are briefly described below.

Figure 4: Elements of the accounting guidance in annex II to decision 4/CMA.1

1. Accounting in accordance with IPCC methodologies and common metrics	2. Ensuring methodological consistency	3. Striving to include all categories of anthropogenic emissions and removals	4. Explanation for excluding categories
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Source: Decision 4/CMA.1 (UNFCCC, 2018b); own illustration, Öko-Institut.

2.3.1 Accounting in accordance with IPCC methodologies and common metrics

This section of the accounting guidance states that Parties account for anthropogenic emissions and removals in accordance with methodologies and common metrics assessed by the Intergovernmental Panel on Climate Change (IPCC) and in accordance with decision 18/CMA.1 (cf. section 2.4). If they cannot do so (e.g. in case of non-greenhouse gas targets or NDCs based on policies and measures), they have to provide information on their own methodology used.

This section also lays out specific information which is key for transparency in the land use, land use change and forestry (LULUCF) sector, namely the approaches used for addressing emissions and removals from natural disturbances on managed lands, for the accounting of emissions and removals from harvested wood products and for addressing the effects of age-class structure in forests.

2.3.2 Ensuring methodological consistency

This section addresses the consistency in scope, data sources and methodologies and the accuracy of projected emissions and removals used for accounting. Parties are required to report any methodological changes and technical updates made during the implementation of their NDCs. The guidance aims to ensure consistency between the methodologies used when preparing an NDC and during its implementation. It further specifies in which cases technical changes and updates to reference points and projections are acceptable, namely when they result from changes in the greenhouse gas inventory or improvements in accuracy. Parties are required to report any changes they make during the implementation of their NDCs.

2.3.3 Striving to include all categories of anthropogenic emissions or removals

Parties are required to account for all categories of anthropogenic emissions and removals corresponding to their NDCs. Parties are required to strive to include all categories of anthropogenic emissions and removals in their NDCs, and once a source, sink or activity is included, continue to include it.

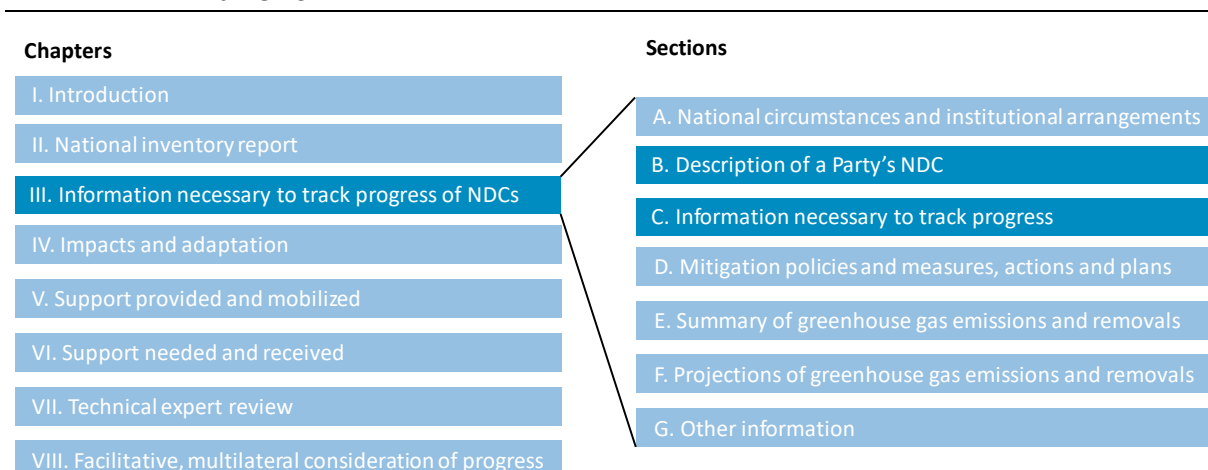
2.3.4 Explanation for excluding categories

This section is closely linked to the previous one: Parties are to provide an explanation of why any categories of anthropogenic emissions or removals are excluded.

2.4 Tracking progress in implementing and achieving NDCs

Once NDCs have been submitted and Parties start implementing them, it is important to track progress of NDC implementation. At the end of the implementation period, the achievement of the NDC has to be checked, i.e. whether the NDC's targets (such as a percentage emissions reduction) have been achieved.

The flow of this information is governed by the Paris Agreement's transparency framework. Its centrepiece is the biennial transparency report, which is prepared by Parties, and which provides information on greenhouse gas emissions and removals, on mitigation, adaptation and support. The rules for preparing and reviewing biennial transparency reports have been adopted at the Katowice climate change conference – in the annex to decision 18/CMA.1 on the 'modalities, procedures and guidelines (MPGs) for the transparency framework for action and support referred to in Article 13 of the Paris Agreement'. The chapters of the MPGs are shown in Figure 5.

Figure 5: Chapters of the modalities, procedures and guidelines for the transparency framework

Source: Decision 18/CMA.1 (UNFCCC, 2018a); own illustration, Öko-Institut.

In the chapter on information necessary to track progress in implementing and achieving NDCs, two sections are directly related to tracking progress in implementing and achieving NDCs. These are described below. Other chapters and sections of the MPGs are also closely related. In particular, the national inventory report provides information on greenhouse gas emissions and removals, which is central to tracking progress towards all emissions-related targets. In addition, chapter III, section D – on mitigation policies and measures, actions and plans – provides key information on the status of implementation of the actions laid out in the NDCs, e.g. whether they have been implemented partly or completely and what their mitigation effects are.

2.4.1 Description of a Party's NDC

In its biennial transparency report, each Party shall provide a description of its NDC. The information requirements for the biennial transparency report are similar to those for ICTU when communicating NDCs (cf. section 2.2), i.e. they include information on targets, reference points, scope and coverage. Parties also provide information on their intent to use cooperative approaches under Article 6 of the Paris Agreement, and they provide updates or clarifications of previously reported information. As an example, they may update the information on methodologies in their NDC by providing more detail.

2.4.2 Information necessary to track progress

This section is the centrepiece for checking whether a Party is on track to achieving its NDC and – after the end of the NDC period – whether it has achieved it. Parties provide information on their indicators (e.g. net greenhouse gas emissions, percentage of renewable energy production or hectares of reforestation) and on their accounting approach. From the second NDC onwards, this approach has to be consistent with the NDC accounting guidance (cf. section 2.3).

The key information for tracking progress is to be provided in a table, the so-called structured summary. It includes greenhouse gas emissions and contributions from the LULUCF sector to the target, where relevant. Parties that participate in voluntary cooperation with other Parties under Article 6 of the Paris Agreement have to adjust their emissions for transfers between Parties, i.e. by adding or subtracting emission reductions depending on whether they transferred them to another Party or acquired them from another Party.

The information in the biennial transparency reports, in particular the information necessary to track progress and the structured summary, make transparent whether NDC targets are achieved, and hence whether Parties make their contribution towards achieving the goals of the Paris Agreement.

3 Overview of NDC tracking and analysis instruments

Nationally Determined Contributions (NDCs) under the Paris Agreement vary greatly from country to country. For the second round of NDC submissions, which saw a peak towards the end of 2020, a number of instruments provide an overview of submissions and/or compare different components and indicators of the countries' NDCs. The table below gives an overview of five existing instruments⁵.

Table 3: Comparison of existing NDC analysis instruments

Elements covered in analysis		CAT Climate Target Update Tracker	Climate Transparency NDC Transparency Check	Climate Watch 2020 NDC Tracker	Deutsches Institut für Entwicklungspolitik NDC Explorer	WWF #NDCs WeWant
Ambition level	Absolute mitigation ambition	Yes (Independent evaluation)	No	No	No	Yes (Drawing upon CAT)
	Progression in mitigation	Yes (Independent evaluation)	Yes (As reported by the country)	No	No	Yes (Drawing upon CAT)
	Adaptation	No	No	Yes	Yes	Yes
	Finance, technology transfer and capacity building	No	No	No	Yes	Yes
Completeness	Sector coverage	Yes	Yes	Yes	Yes	Yes
	Gas coverage	Yes	Yes	Yes	Yes	No
	Target type	Yes	Yes	Yes	Yes	No
Details of implementation	Alignment to net-zero target/ long-term target	Yes	Yes	No	No	Yes
	Checking if targets are embedded in national policies	Yes	Yes	No	No	No
Transparency	Clarity of methodological approach (incl. intention to use voluntary cooperation under Article 6)	Yes	Yes	Yes	No	No
	Clarity of implementation	Yes	Yes	Yes	Yes	Yes
	Fairness	Yes	Yes	No	Yes	No

⁵ The cut-off date for filling the information for the five instruments was January 25, 2021.

3.1 Climate Action Tracker's Climate Target Update Tracker

Summary

The Climate Action Tracker's (CAT) Climate Target Update Tracker provides a summary of the status of the 2020 update process and a detailed analysis for 40 countries (Climate Action Tracker, 2021b). The detailed analysis focuses on climate change mitigation and includes a relative rating of the NDC's ambition in comparison to previous submissions and an absolute rating of ambition towards achieving the Paris Agreement's temperature goal.

Overview

- ▶ **Who is operating it?** The Climate Action Tracker is a cooperation between Climate Analytics and NewClimate Institute.
- ▶ **Country coverage:** Provides an overview of NDC proposals and submissions for 189 countries. Includes detailed analysis of NDC proposals and submissions for 40 countries.
- ▶ **Update cycle:** The overview map and table, as well as the specific country NDC update analyses are being updated shortly (few days) after an official announcement or submission.

Table 4: Elements analysed in the CAT's Climate Target Update Tracker

Elements covered in analysis		Yes/no	Description
Ambition level	Absolute mitigation ambition	Yes (Independent evaluation)	Mitigation targets from previous and updated NDCs are analysed and rated as absolute economy-wide emissions excl. the land use, land use change and forestry (LULUCF) sector. When conditional and unconditional targets are presented both are analysed and rated. Countries' current policy emissions are analysed to check if the country is on track to meet the target. The rating methodology includes a range of the "fair share" of a country based on several equity approaches and it is linked to likely global temperature increase by 2100.
	Progression in mitigation	Yes (Independent evaluation)	The analysis of unconditional and conditional mitigation targets includes a comparison with previous targets and their respective CAT rating. For this, all targets are translated to the same units (Mt CO _{2e} excl. LULUCF using GWP from the IPCC's Fourth Assessment report).
	Adaptation	No	
	Finance, technology transfer and capacity building	No	
Completeness	Sector coverage	Yes	Listing of sector coverage and if separate sector targets exist for both previous and updated NDCs
	Gas coverage	Yes	List of gases included in previous and updated NDCs

Elements covered in analysis		Yes/no	Description
	Target type	Yes	Previous and updated NDC targets are classified into absolute emissions reduction, absolute emissions reduction below base year/scenario, emissions intensity target, emission budget, etc.
Details of implementation	Alignment to net-zero target/ long-term target	Yes	Mention of the existence of a long-term/net zero target and whether it is aligned to the NDC target (for previous and updated NDCs).
	Checking if targets are embedded in national policies	Yes	The CAT Climate Target Update Tracker includes this as yes/no (for previous and updated NDCs). The CAT's country analysis provides a high level of detail on current and planned policies (incl. economy-wide and sector policies). These analyses include, where available, also estimations of emission reductions projections from specific policies/policy packages.
Transparency	Clarity of methodological approach (incl. intention to use voluntary cooperation under Article 6)	Yes	The analysis includes general information (yes/no check) on whether an NDC followed guidance on information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1. No further details (e.g. a country's intention to use Art. 6) are included.
	Clarity of implementation	Yes	Mention of existing/missing planning processes (i.e. development of strategies, sectoral plans, and policy measures) and governance measures (i.e. ministry responsibilities) are included in previous and updated NDCs.
	Fairness	Yes	Mention if fairness is/is not addressed in an NDC (for both previous and updated). Excerpts of NDC texts are also sometimes included.

Available at: The following link leads to the Internet: <https://climateactiontracker.org/climate-target-update-tracker/>.

Table 5: CAT Climate Target Update Tracker strengths and weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> ▶ So far the only project that provides direct comparison of emission levels resulting from previous and updated NDCs. ▶ The analysis of NDCs is both qualitative and quantitative. ▶ So far the only project that provides an absolute assessment of ambition of the NDCs. ▶ Separate presentation of LULUCF emissions provide transparency given the large uncertainty in this sector. 	<ul style="list-style-type: none"> ▶ Adaptation and finance components are missing in the analysis. ▶ For countries including the LULUCF sector in their climate targets, some assumptions need to be made to translate the target to absolute emissions excl. LULUCF. ▶ Listing of all 2020 and 2021 NDC submissions and proposals for 189 countries. The detailed assessment is only done for 40 of those countries.

Strengths	Weaknesses
<ul style="list-style-type: none">▶ Detailed analysis for 40 countries which includes a written assessment of the level of ambition of NDC targets (existing and updated), long-term targets, net-zero targets, current policies (economy-wide and per sector) as well as emissions projections for different scenarios if available (i.e. planned policies).▶ Current policy projections are also analysed for 40 countries. This helps in providing a context for the NDC target and its ambition against specific country developments. This can give an indication of the need for further policies to achieve the NDC targets, or whether the country's target could be more ambitious.▶ The CAT's "fair share" range is linked to the temperature goals of the Paris Agreement. This aids in assessing whether the level of effort in a country's NDC is compatible with the global target.	<ul style="list-style-type: none">▶ Some transparency elements incl. the clarity of implementation and use of Article 6 are not analysed in detail and are only mentioned as included/not included in an NDC.

3.2 Climate Transparency NDC Transparency Check

Summary

The Climate Transparency NDC Transparency Check provides a summary of the elements of information to facilitate clarity, transparency and understanding (ICTU) from the Paris Agreement (decision 1/CP.21) and the Katowice Rulebook (Annex to decision 4/CMA.1) included/not included in the Group of 20 (G20) countries' NDCs (Climate Transparency, 2020). The NDC Transparency Check includes information on the NDC development process, the target itself, and on its implementation; it has a strong focus on mitigation.

Overview

- ▶ **Who is operating it?** The Climate Transparency consortium includes: Climate Analytics, Centro Clima, University of Cape Town, ERI, FARN, GermanWatch, Humboldt-Viadrina, Iniciativa Climática de México, IDDRI, IESR, NewClimate Institute, IGES, ODI, and Teri.
- ▶ **Country coverage:** Currently available for Argentina, Australia, Canada, EU, India, Mexico, and South Korea. Further G20 countries are to be included.
- ▶ **Update cycle:** No cycle defined, although the Climate Transparency report is published once per year (in December).

Table 6: Elements analysed in Climate Transparency NDC Transparency Check

Elements covered in analysis		Yes/no	Description
Ambition level	Absolute mitigation ambition	No	It includes information on reference/base year, units used, whether the target can be quantified in terms of greenhouse gas emissions, as well as on the period for implementation. Does not include an evaluation of absolute ambition.
	Progression in mitigation	Yes (As reported by the country)	Information on whether a country's NDC mentions if their new target is a progression of the previous one reflecting a country's "highest possible ambition."
	Adaptation	No	The check focuses on the mitigation component of NDCs. However, it includes mitigation co-benefits of adaptation actions.
	Finance, technology transfer and capacity building	No	
Completeness	Sector coverage	Yes	List of gases included in previous and updated NDCs
	Gas coverage	Yes	Additional to the seven gases to be reported under the Paris Agreement, the NDC Transparency Check also includes information on the inclusion of "other climate forces" with no IPCC guidelines (i.e. black carbon).
	Target type	Yes	The check includes information on the target type and year. The types include emissions-based targets, emissions budget, emissions intensity targets, and

Elements covered in analysis		Yes/no	Description
			targets expressed in relation to specific outcomes (e.g. installed solar power capacity or renewable energy share).
Details of implementation	Alignment to net-zero target/ long-term target	Yes	Only if mentioned in the NDC.
	Checking if targets are embedded in national policies	No	
Transparency	Clarity of methodological approach (incl. intention to use voluntary cooperation under Article 6)	Yes	The check includes information on the mention of policies and measures (PAMs) as well as on the inclusion/exclusion of domestic institutional arrangements for the implementation of the NDC. The latter includes the development and status of implementation plans, and PAMs. Information on the intention to participate in Article 6 activities including the use of “Internationally transferred mitigation outcomes” (ITMOs), which are mitigation actions that occur in one country but are transferred to another country to help meet its NDC target.
	Clarity of implementation	Yes	The check includes information on the mention of PAMs as well as on the inclusion/exclusion of domestic institutional arrangements for the implementation of the NDC. The latter includes the development and status of implementation plans, and PAMs.
	Fairness	Yes	Information on whether a country’s NDC mentions why its target is a fair contribution to the global goals and references to equity analyses by either in-country experts or international experts.

Available at: The following link leads to the Internet: <https://www.climate-transparency.org/ndc-transparency-check>.

Table 7: Climate Transparency NDC Transparency Check strengths and weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> ▶ The NDC Transparency Check includes a comprehensive, systematic checklist of all the elements included in an NDC, taking into account the Paris Agreement decision (1/CP.21) and the Katowice Rulebook (Annex to decision 4/CMA.1). ▶ This format aids the comparison of NDCs' content between countries and between different update rounds. It is especially useful from a transparency perspective. 	<ul style="list-style-type: none"> ▶ All the existing analyses (i.e. Argentina, Mexico, EU, India, South Korea, Australia and Canada) are done for pre-2020 NDCs. While these focus on possible improvements for the 2020 update round, none of the updated NDCs have been analysed as of May 22, 2021. ▶ While the check provides a comprehensive overview of a country's NDC elements in a systematic way, it does not include a qualitative analysis. This instrument refrains from assessing the overall ambition of a country's target and instead enumerates its content.

3.3 ClimateWatch 2020 NDC Tracker

Summary:

The ClimateWatch 2020 NDC Tracker provides an overview of which countries are updating or enhancing their national climate commitments in the lead up to COP26 (WRI, 2021). It also includes comparisons of some NDCs to previous submissions.

Overview

- ▶ **Who is operating it?** World Resources Institute
- ▶ **Country coverage:** 153 countries
- ▶ **Update cycle:** New information is added constantly based on country submissions to the UNFCCC and announcements in other fora incl. statements from UNFCCC-related events, statements at the UN general assembly, and twitter videos.

Table 8: Elements analysed in ClimateWatch 2020 NDC Tracker

Elements covered in analysis		Yes/no	Description
Ambition level	Absolute mitigation ambition	No	Mention of existence of greenhouse gas (GHG) targets and copy of the original NDC text. Does not include an evaluation of absolute mitigation ambition.
	Progression in mitigation	No	Although the tracker includes a section on “Comparison with Previous NDC” enumerating several elements (incl. “strengthened or added GHG target”), information is only available as a “yes/no” checklist without context or analysis.
	Adaptation	Yes	Sectoral adaptation commitments of NDCs are included
	Finance, technology transfer and capacity building	No	
Completeness	Sector coverage	Yes	Enumeration of included sectors and sectoral mitigation targets
	Gas coverage	Yes	List of gases included
	Target type	Yes	Target types include trajectory target, baseline scenario target, and base year target
Details of implementation	Alignment to net-zero target/ long-term target	No	
	Checking if targets are embedded in national policies	No	

Elements covered in analysis		Yes/no	Description
Transparency	Clarity of methodological approach (incl. intention to use voluntary cooperation under Article 6)	Yes	Partially included under the categories “Overall Assumptions and Methodologies,” “Accounting for Emissions and Removal from the Land Sector,” and “International Market Mechanism.” Excerpts from the original NDC are added into the different subcategories if specified in the NDC text. No analysis is included.
	Clarity of implementation	Yes	Some level of detail is included under “Sectoral information,” where sectoral plans, capacity building needs and some existing policies and actions are mentioned. Excerpts are taken directly from NDC text without additional analysis.
	Fairness	Yes	Includes an NDC excerpt of a countries’ description of fairness and how it explains that its target contributes towards achieving the objective of the Convention if included in the NDC text.

Available at: The following link leads to the Internet: <https://www.climatewatchdata.org/2020-ndc-tracker>

Table 9: ClimateWatch 2020 NDC Tracker strengths and weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> ▶ The Climate Watch NDC Tracker includes an overview table where information on submission and <i>intention</i> to submit an update and/or new NDC is presented for all 153 countries. ▶ It also includes a dynamic feature where up to three different NDCs’ content can be compared. The comparison includes an overview of the commitment, previous NDCs, planning processes, finance and support, and fairness and ambition elements if available for the selected countries. ▶ It organizes NDC text excerpts under different categories for an easy navigation of the original NDC text. 	<ul style="list-style-type: none"> ▶ The comparison with previous NDCs does not provide further detail than a “yes/no” checklist of whether a country has revised its NDC, strengthened its GHG target, added sectoral targets, added policies or actions, strengthened adaptation or provided additional information for clarity, transparency, and understanding. ▶ The Climate Watch NDC Tracker does not provide detailed analysis but rather presents a checklist incl. text excerpts of an NDCs’ content for some countries. ▶ Some elements are missing in updated NDCs. Instead of being shown as “not available” the categories simply do not appear.

3.4 Deutsches Institut für Entwicklungspolitik’s NDC Explorer

Summary

The German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) NDC Explorer (2020) is an online tool that analyses and compares countries’ NDCs both qualitatively and quantitatively. The analysis is divided into five broad categories: climate change mitigation, climate change adaptation, finance & support, planning process and broader picture.

Overview

- ▶ **Who is operating it?** The German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) in cooperation with the UNFCCC secretariat, the African Centre for Technology Studies (ACTS), the Stockholm Environment Institute (SEI), and the Frankfurt School – UNEP Collaborating Centre for Climate & Sustainable Energy Finance.
- ▶ **Country coverage:** 169 countries
- ▶ **Update cycle:** No cycle defined. Last update was March 18, 2020.

Table 10: Elements analysed in the DIE’s NDC Explorer

Elements covered in analysis		Yes/no	Description
Ambition level	Absolute mitigation ambition	No	It includes mention of mitigation costs, mitigation focus areas in different sectors, reduction of non-CO ₂ gases, fossil fuel production and subsidiaries, land use change, trade, market mechanisms, and supplementary mitigation plans and strategies. Does not include an evaluation of absolute mitigation ambition.
	Progression in mitigation	No	
	Adaptation	Yes	It includes mention of migration and displacement, vulnerability in different sectors, costs of recent and future climate-related hazards, climate risks, priority sectors, investment needs, and co-benefits of adaptation.
	Finance, technology transfer and capacity building	Yes	A country’s mention of technology needs, technology transfer, finance, capacity building, means of implementation and climate risk insurance in their NDC is listed under “Finance & Support.”
Completeness	Sector coverage	Yes	Only indirectly through either mitigation or adaptation subcategories.
	Gas coverage	Yes	List of gases included.
	Target type	Yes	Target types include business as usual, absolute target, intensity target, peaking target, policies and actions, and adaptation with mitigation co-benefits.
Details of implementation	Alignment to net-zero target/	No	

Elements covered in analysis		Yes/no	Description
Transparency	long-term target		
	Checking if targets are embedded in national policies	No	
	Clarity of methodological approach (incl. intention to use voluntary cooperation under Article 6)	No	
	Clarity of implementation	Yes	Includes the mention of creation of specific laws and policies if outlined in an NDC. It also mentions if an NDC references UNFCCC-related plans and strategies, domestic plans and strategies or both.
Fairness	Yes	Mention if a section on fairness/equity (incl. contextualising of emissions) or if historical responsibility is included in an NDC. The tool includes an NDC's mention of limiting global temperature increase to 1.5°C, 2°C, to neither temperature goal, or if it claims the targets are consistent with either temperature goals.	

Available at: The following link leads to the Internet: <https://www.die-gdi.de/ndc/>

Table 11: DIE's NDC Explorer strengths and weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> ▶ It provides a dynamic comparison of the content of up to three NDCs. ▶ Provides exclusively information found in NDCs. This information is categorised into five categories (i.e. mitigation, adaptation, finance and support, planning process, and broader picture). The categories contain subcategories where details of the NDC are included. The extensiveness of the approach aids the comparison of different NDC types and their content. 	<ul style="list-style-type: none"> ▶ The information provided is only qualitative, making it hard to assess if a target is ambitious or not (i.e. how much will it contribute to reducing global GHG emissions/achieve the Paris Agreement temperature goal). This is especially difficult when a target is defined only as "business as usual" or when an NDC claims to be consistent with 2°C global temperature increase. ▶ The tool does not seem to be updated very recently (last updated March 2020⁶). 2020 NDC submissions are not (yet) included. ▶ There is no clear category on the clarity of methodological approach (incl. assumptions,

⁶ last consulted May 22, 2021.

Strengths	Weaknesses
	<p>guidelines used, etc.), making it hard to assess the transparency of NDCs.</p> <ul style="list-style-type: none"><li>▶ The tool does not provide an analysis/comparison between NDC update rounds.

3.5 WWF's #NDCsWeWant

Summary

The World Wide Fund For Nature (WWF) has set up a checklist to assess the ambition of updated NDCs (WWF, 2021). Its aim is to compare first and new NDC submissions against their #NDCsWeWant checklist, provide an analysis of each of the 20 criteria, and assign a combined rating for each country. NDCs are rated into four categories: NDC we want, short way to go, some way to go, and NDC we don't want.

Overview

- ▶ **Who is operating it?** WWF
- ▶ **Country coverage:** As of May 22, 2021, 32 countries have been included.
- ▶ **Update cycle:** Their website is updated regularly.

Table 12: Elements analysed in the WWF's NDCs we want

Elements covered in analysis		Yes/no	Description
Ambition level	Absolute mitigation ambition	Yes (drawing upon CAT)	Mitigation targets from previous and updated NDCs are included with qualitative and quantitative analysis, whether 2030 targets are (reported to be) aligned with a 1.5°C carbon budget, also drawing upon the Climate Action Tracker
	Progression in mitigation	Yes (drawing upon CAT)	Previous and updated targets are included together with a qualitative assessment of whether the updated one is more ambitious.
	Adaptation	Yes	Previous and updated adaptation contributions as mentioned in the NDC are presented together with a qualitative analysis of whether the NDC update includes an improvement based on the inclusion of clear sector specific adaptation objectives that are in line with national priorities and international commitments.
	Finance, technology transfer and capacity building	Yes	Previous and updated finance commitments as per NDCs. Qualitative analysis of comparison between previous and updated NDC is also included.
Completeness	Sector coverage	Yes	Listing of sector coverage and if separate sector targets exist for both previous and updated NDCs.
	Gas coverage	No	
	Target type	No	
Details of implementation	Alignment to net-zero target/ long-term target	Yes	Mention of the existence of a long-term/net zero target and whether it is aligned to the NDC target (for previous and updated NDCs). Qualitative analysis is also included.

Elements covered in analysis		Yes/no	Description
Transparency	Checking if targets are embedded in national policies	No	
	Clarity of methodological approach (incl. intention to use voluntary cooperation under Article 6)	No	
	Clarity of implementation	Yes	Listing of elements included in the NDC text under the criterion “a transparent national system to track implementation” and analysis of how it has changed between NDC updates.
	Fairness	No	

Available at: The following link leads to the Internet:

https://wwf.panda.org/discover/our_focus/climate_and_energy_practice/ndcs_we_want/

Table 13: WWF’s NDCs we want strengths and weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> ▶ Provides direct comparison between previous and updated NDCs. ▶ Includes qualitative analysis on the 20 criteria considered and a rating of seven main components (i.e. mitigation, adaptation, finance, fostering systemic change, inclusiveness and participation, contribution to Sustainable Development, and tracking progress), many of which are not covered by other projects. Based on this, a rating is given to the overall NDC update. ▶ The approach also includes an analysis on the process of NDC development (i.e. under their inclusiveness and participation category). 	<ul style="list-style-type: none"> ▶ When assessing the overall improvement/lack of improvement of mitigation ambition, the analysis may fall short in assessing the impact (e.g. emissions reductions) of the proposed targets. While for some countries (e.g. Brazil) the targets have been translated to emissions level and the difference between NDCs has been analysed, for most countries such an analysis has not been carried out. ▶ The analysis does not focus on the transparency of NDCs, nor the underlying assumptions and methodologies.

4 Methodology

This section describes the methodology to systematically assess NDCs that are submitted in 2020/2021, in comparison to previous submissions from the 2015 cycle and in comparison to other countries' NDCs.

The starting point for the development of this methodology was already existing NDC assessments, including the CAT Climate Target Update Tracker (2021b), the Climate Transparency NDC Transparency Check (2020), ClimateWatch 2020 NDC Tracker (WRI, 2021), Deutsches Institut für Entwicklungspolitik NDC Explorer (2020), and the WWF #NDCsWeWant (2021), which have been reviewed in detail (see chapter 3) prior to developing this method to avoid duplication and fill gaps in their analysis.

The assessment aims to cover all design elements that are critical for the success of the NDC in delivering ambitious climate action:

- ▶ **Increased mitigation ambition:** The purpose of the ambition cycle is that countries provide new NDCs that are more ambitious than the previous ones. If countries do not raise ambition when submitting a new NDC, the cycle is not fulfilling its purpose. The method described here focuses on mitigation ambition.
- ▶ **Comprehensiveness:** This element addresses whether NDCs are comprehensive in terms of coverage of emissions and sectors but also in terms of other non-mandatory topics covered, such as adaptation.
- ▶ **Implementation plan:** The purpose of NDCs is to commit Parties to national action on climate. NDCs need to be rooted in the national policy making process to ensure successful implementation.
- ▶ **Transparency:** Trust is an important prerequisite for Parties to voluntarily submit more ambitious NDCs. This trust is generated by a high level of transparency of the information provided in other NDCs.

The development of the methodology was guided by the following set of criteria:

- ▶ **Comparable:** we aim to systematically assess countries' NDCs so that they can be compared.
- ▶ **Comprehensive:** we aim to include all relevant NDC elements in the assessment (both mandatory and non-mandatory)
- ▶ **Concise:** we aim to provide a digestible and insightful assessment of NDCs.
- ▶ **Replicable:** we aim to develop a methodology that if applied by different persons would still yield the same results.

Where there is a conflict between these criteria, a careful balance that aims to provide the highest level of insight has been sought.

The approach taken is a comprehensive approach consisting of a concise analysis for each NDC design element, defined in this study as mitigation ambition, comprehensiveness, implementation plan and transparency. Taking climate change mitigation ambition as the starting point, this approach aims to analyse NDCs beyond the headline target, providing a concise yet nuanced perspective of the ambition, endeavours and orientation of countries' climate action as laid out in the NDC. The methodology in this chapter describes what is

analysed and how it is analysed for maximum transparency and to enable other researchers to systematically analyse additional NDCs.

This approach is different from other work done on the NDCs. ClimateWatch 2020 NDC Tracker and the DIE NDC Explorer replicate and categorize only the original NDC text. Such an approach is systematic and comparable but does not add much analytical insight beyond the bare NDC.

The Climate Transparency NDC Transparency Check uses a comprehensive tick box checklist. Such an approach uses the information in the NDCs and systematically categorises it. This approach is systematic but results in long lists which may be more difficult to digest.

The WWF's #NDCsWeWant approach uses a checklist of 20 criteria to assess the progress of new NDCs and rate them into "NDCs we want," "short way to go," "some way to go," and "NDCs we don't want." In addition to climate mitigation components, which are drawn from CAT analysis, the #NDCsWeWant checklist includes elements on the country's participatory processes, linkages to sustainable development, and national monitoring systems.

The CAT Climate Target Update Tracker has a focus on the analysis of the increased mitigation ambition of NDCs and the progression in mitigation.

This study therefore realized synergies with the CAT Climate Target Update Tracker, which are twofold: 1) This study adds to the CAT Climate Target Update Tracker approach a methodology for a systematic analysis of NDCs' comprehensiveness, implementation plan and transparency, and applies it to 20 countries; 2) This study draws on the CAT Climate Target Update Tracker analysis of the increased mitigation ambition of NDCs for 13 Parties while complementing the CAT Climate Target Update Tracker with an analysis of mitigation ambition and progression for 7 additional Parties.

This analysis of the NDCs is scientific in nature. It is based on the authors' careful review of the NDCs and additional sources, which are duly referenced.





4.1 Methodological guide





Each NDC assessment is prefaced by a brief summary of the evaluation of the four key elements: increased mitigation ambition, comprehensiveness, implementation plan, and transparency. This summary provides the most important findings of the NDC analysis and explains the rating given to each of the key elements. The summary is followed by a figure that includes two elements: 1) a table with the rating of all four key elements (referred to also as "overview table"), and 2) a timeseries of domestic greenhouse gas emissions including historic emissions, emissions projections based on current policies (where available), and emissions resulting from previous and new NDC targets.

The rating of the four key elements in the overview table is informed by the detailed analysis that follows later. For the mitigation ambition element, we rate the change between first and new NDC, while for the other three elements (i.e. comprehensiveness, implementation plan, and transparency) we rate exclusively the new NDC. The intention of this structure is to help the users to orient themselves and turn to the parts of the detailed analysis that are most interesting to them. The evaluation is carried out after a more detailed analysis has been conducted, but it does not draw from a quantitative aggregation of individual indicators. Table 14 provides guidance on how to evaluate the four main elements of NDC design. As these categories require some qualitative evaluation that may differ by user, we recommend that the results of the categorisation are checked after a set of countries is assessed, to ensure that they have been applied similarly across countries.

The figure includes information on historic emissions, NDC targets, and emissions projections under current policies—if available from external sources (i.e., the Climate Action Tracker’s (2021d) post-COVID current policy projections, PRIMAP-hist national historical emissions time series (Gütschow, J.; Günther, A.; Jeffery, L.; Gieseke, 2021), or if available from national communications and other submissions to the UNFCCC). The sources are documented below each figure. We show NDC emissions level(s) in the target year(s). The aim of the emissions timeseries figure is to compare the first and new NDC targets of a country to each other in the context of a country’s domestic historic and future emissions. Emissions and removals in the figure are all shown in the same units (MtCO₂e/year) using the same global warming potentials (GWP). They cover economy-wide emissions for all greenhouse gases (GHGs) excluding the land use and land use change and forestry (LULUCF) sector as far as available. All emissions pathways and levels are labelled in each of the graph’s legends.

Table 14: Categories for the overview evaluation

Element	Fulfilled 	Partly fulfilled 	Not fulfilled 	Unclear 
Increased mitigation ambition (Drawing from mitigation ambition, chapter 4.3)	Resulting domestic GHG emissions of the unconditional target are more than 1% lower in 2030 compared to the previous NDC and below “current policies” and if there is an international component, it is strengthened as well.	Resulting GHG emissions are more than 1 % lower in 2030 compared to the previous NDC and below “current policies” but: <ul style="list-style-type: none"> ▶ This applies to the total of domestic and international credit contributions only, or ▶ This applies to the conditional target only or ▶ The efforts needed to achieve the new target are lower (e.g., due to changes in BAU emissions) Resulting GHG emissions reduction is less than 1% compared to the previous NDC but: <ul style="list-style-type: none"> ▶ It can be shown that the 	Resulting GHG emissions reduction is less than 1% compared to the previous NDC or target is nominally more ambitious but can still be reached without additional policies. Targets that only change the formulation (e.g., moving from below business as usual (BAU) target to absolute target) but do not result in lower emissions.	The first and/or new NDCs and/or additional sources (i.e., external assessments, other submissions or communications to the UNFCCC) provide insufficient information to determine whether ambition increased or decreased.

Element	Fulfilled 	Partly fulfilled 	Not fulfilled 	Unclear 
		likelihood of achieving the new NDC target is clearly higher than for the previous target.		
Comprehensive (Drawing from scope, section 4.2 and mitigation completeness, chapter 4.4)	NDC covers: <ul style="list-style-type: none"> ▶ climate change mitigation; ▶ all relevant GHGs⁷; and ▶ all sectors (Information on adaptation and support is not included in this rating, but treated elsewhere.)	NDC covers: <ul style="list-style-type: none"> ▶ climate change mitigation; ▶ all relevant GHGs; and ▶ main sectors.⁸ 	NDC misses relevant GHGs and/or sectors.	Not applicable.
Implementation plan (Drawing from mitigation implementation, chapter 4.5)	Target and measures to implement are included in national legislation or equivalent. (See chapter 4.5 for more details.)	National preparation process available, but implementation not yet likely.	No signs of national process and implementation plan.	Not applicable.
Transparent (Drawing from transparency, chapter 4.6)	All information to facilitate clarity, transparency and understanding of the NDC (decision 4/CMA.1, accounting modalities and availability of information to estimate resulting emissions level of target) is available, in particular with regard to the resulting emission level under the NDC.	Some critical information is missing (decision 4/CMA.1, accounting modalities and availability of information to estimate resulting emissions level of target).	Major parts of the required information are missing or information is misleading.	Not applicable.

After the brief summary, the overview table and the figure, we include detailed information and analysis on the following five NDC elements: scope, mitigation ambition, mitigation completeness, mitigation implementation, and transparency. We assess these elements by looking at various aspects and include a comparison table for each of these elements. The

⁷ Relevant GHGs here are defined for developed countries as: Carbon dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur hexafluoride (SF₆), and Nitrogen trifluoride (NF₃); and for developing countries as the first three: Carbon dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O).

⁸ For developed countries and large emitters, the main sectors include: Energy, Industrial processes and product use (IPPU), Agriculture, Waste, and Land use, land use change, and forestry (LULUCF). For developing countries, particularly small island states with small emissions and limited data, “main sector(s)” is defined as the sector(s) with the largest source of emissions; very often this only includes the Energy sector and/or Agriculture.

comparison tables include detailed information from previous and new NDCs, and a column with the assessment of the change between the two NDC submissions.

We assess the change as either positive “+”, negative “(-)”, no change “0”, or unclear “?”. This is meant as first order indication to allow the user a quick orientation. But it can only be used as qualitative indication of change.

Whereas the overview evaluation is based on the new NDC (Table 14) (with the exception of the first category on increased mitigation ambition), the detailed analysis of the scope, mitigation ambition, mitigation completeness, mitigation implementation, and transparency compare the change between the first and second/updated NDCs.

The following sections provide details on scope, mitigation ambition, mitigation completeness, mitigation implementation, and transparency; one section per topic. In each section we include the criteria used to assess the change (i.e., positive, negative, no change and unclear) between NDCs.

4.2 Scope

In this section, we assess whether NDC submissions address the most critical aspects. The section on scope is the only place in each NDC assessment where adaptation, economic diversification, financing, and technology transfer and capacity building are discussed. Following sections look into various aspects of mitigation – including conditionality, and transparency.

Table 15: Scope

Element	Issues to be covered	Assessment of the change between NDCs
Mitigation (drawn from section below 4.3 mitigation ambition and 4.4 mitigation completeness and 4.5 mitigation implementation)	<p>We summarise which information related to mitigation targets, scope, coverage and implementation (incl. planning processes) is covered in the NDC.</p> <p>We include one sentence on whether a long-term strategy or net-zero target exist and is mentioned in the NDC (more details in section 4.3).</p> <p>We provide more details on mitigation in the following sections.</p>	Not evaluated here. We provide an assessment of the change between NDCs for most of the mitigation elements in Table 16 (mitigation ambition), Table 17 (mitigation completeness), and Table 18 (mitigation implementation).
Adaptation	<p>We summarise the adaptation-related targets and planned implementation in the NDC. We summarise whether mitigation co-benefits of adaptation actions are addressed.</p> <p>We add “Not included in the NDC” if the NDC does not include an adaptation element.</p> <p>This is the only section where adaptation is covered.</p>	<p>+: More details than the previous NDC.</p> <p>(-): Fewer details than the previous NDC.</p> <p>0: No change between NDCs.</p> <p>?: The change between NDCs is unclear.</p>

Element	Issues to be covered	Assessment of the change between NDCs
Economic diversification	<p>We summarise to which extent the NDC includes actions on economic diversification. We summarise whether mitigation co-benefits of economic diversification are addressed.</p> <p>We add “Not included in the NDC” if the NDC does not include an economic diversification element.</p> <p>This is the only section where economic diversification is covered.</p>	<p>+: More detail than the previous NDC.</p> <p>(-): Fewer detail than the previous NDC.</p> <p>0: No change between NDCs.</p> <p>?: The change between NDCs is unclear.</p>
Financing	<p>We summarise to which extent the NDC includes the provision of, or the need for receiving financing.</p> <p>We summarise any information on policy action to align finance flows with mitigation targets.</p> <p>We add “Not included in the NDC” if the NDC does not include this element. We do not analyse separate submissions on finance unless they are mentioned in the NDC.</p> <p>This is the only section where financing is covered.</p>	<p>+: The finance component of the new NDC provides more detailed quantitative and qualitative sector-specific information on financial support needed for implementing the NDC as well as strategies for mobilizing and realigning finance flows.</p> <p>(-): The finance component in the new NDC provides less detailed information than in the previous NDC, e.g., covering fewer sectors or being only qualitative.</p> <p>0: There is no change in the level of detail and coverage/inclusion of finance in the NDC.</p> <p>?: The change between previous and new NDCs is unclear.</p>
Technology transfer and capacity building	<p>We summarise to which extent the NDC includes technology transfer and capacity building.</p> <p>We add “Not included in the NDC” if the NDC does not include a technology transfer and capacity building element.</p> <p>This is the only section where technology transfer and capacity building are covered.</p>	<p>+: More details than the previous NDC.</p> <p>(-): Fewer details than the previous NDC.</p> <p>0: There is no change in the level of detail and coverage/inclusion of technology transfer and capacity building between NDCs.</p> <p>?: The change between NDCs is unclear.</p>

4.3 Mitigation ambition

Mitigation ambition is the cornerstone of an NDC. It shows in concrete terms how much a country will contribute towards achieving the Paris Agreement’s temperature goal by 2030. Here, we describe the target(s) as presented in the NDCs and translate them, to the extent possible, to a common metric (i.e., MtCO_{2e}/year). This allows for comparison of different target formulations to assess the change in the NDC ambition cycle. We contextualise the emissions level targeted by the NDC by comparing the target to a country’s historical and projected emissions under current policies, where available. This allows for the assessment of for instance overoptimistic assumptions on economic growth of a country’s baseline for a target. We include economy-wide emissions and all greenhouse gases but present the contributions of the LULUCF sector separately. We use the same global warming potentials (GWPs) to estimate all emissions so that they are comparable. For countries with conditional and unconditional targets, we provide two entries.

Table 16: Mitigation ambition

Element	Issues to be covered	Assessment of the change between NDCs
Country’s formulation of the target	We replicate the country’s formulation of the mitigation target(s). This includes emission reduction targets, and – if applicable – other targets like renewable energy or forestry targets.	<p>We rate the change between new and previous NDCs based on the following ranking:</p> <ol style="list-style-type: none"> 1. Absolute emissions limit (trajectory) 2. Absolute emissions limit (single year) 3. Emissions reduction below BAU 4. Emissions intensity per GDP 5. Other types of targets only (e.g., renewable energy targets, share of non-fossil fuels, peaking year, policies and measures, etc.) <p>+: The formulation of the target in the new NDC has moved up the ranking in comparison to the previous NDC.</p> <p>(-): The formulation of the target in the new NDC has moved down the ranking in comparison to the previous NDC.</p> <p>0: There is no change in formulation of the NDC target.</p> <p>?: The change between NDCs is unclear.</p>
Resulting emission level in 2030, excl. LULUCF	We provide the level of MtCO _{2e} (excl. LULUCF) in 2030 that would result from	We rate this element by comparing the previous and new

Element	Issues to be covered	Assessment of the change between NDCs
	<p>the implementation of the target. If emissions/removals from the LULUCF sector are included in the target, provide also the level incl. LULUCF.</p> <p>If it is not possible to estimate an emission level from the information provided in the NDC, we add “The NDC does not provide enough information to estimate resulting emission level in 2030”.</p>	<p>NDC targets in MtCO₂e excl. LULUCF.</p> <p>+: The new NDC target will result in greater emission cuts or lower emission limits than the previous one (more than 1% difference between targets).</p> <p>(-): The new NDC target is weaker (i.e. results in less than 1% difference) than the previous one.</p> <p>0: There is no change in the emissions level of the NDC target.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
Conditionality	<p>We summarise whether the targets are conditional and whether the conditions are spelled out clearly. We include the conditional and unconditional target values. We also describe if the NDC mentions any conditional circumstances, not directly linked to the target(s)’s ambition.</p>	<p>+: The contribution of the unconditional part of the target(s) is higher than in the previous NDC.</p> <p>OR</p> <p>A previously conditional target is changed to an unconditional target in the new NDC.</p> <p>(-): A previously unconditional target becomes conditional.</p> <p>OR</p> <p>The contribution of the unconditional part of the target(s) is lower than in the previous NDC.</p> <p>0: There is no change in the unconditional target.</p> <p>?: The change between previous and new NDC is unclear.</p>
Need for new policies to meet the target	<p>We describe if the target will be met with already implemented policies or if additional policies are needed (difference between NDC and “current policies”).</p> <p>For this we check information from the NDC and external sources (e.g., the Climate Action Tracker, which provides</p>	<p>We do not provide an assessment of the change between NDCs for this element.</p>

Element	Issues to be covered	Assessment of the change between NDCs
	<p>emissions projections under current policies per country as a timeseries).</p> <p>For countries where emissions projections from current policies are neither provided in the NDC nor are available from external sources, we add “Information on current policies projections is not available.”</p>	
LULUCF and removals	<p>We describe if the LULUCF sector is included in the target or is treated separately and, if so, how. Is action in this sector envisaged to reach the overall target? (Accounting rules are covered under the Transparency section below).</p>	<p>+: The contribution from the LULUCF sector in the new NDC target will result in greater emission cuts or lower emission limits than the previous one (more than 1% difference between targets).</p> <p>(-): The contribution of the LULUCF sector to the new NDC target is weaker (i.e., results in less than 1% difference) compared to the previous one.</p> <p>0: There is no change in the contribution of the LULUCF sector to the NDC target.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
Net-zero target	<p>We state the net-zero target, if there is one, including reference. Is a trajectory/pathway provided towards reaching that target? Is the role of the land use sector defined for reaching that target?</p> <p>If no net-zero target is included, state the long-term target, if included in the NDC or in a long-term strategy communicated under the Paris Agreement.⁹</p> <p>If no target is available, we specify whether or not the Party communicated a long-term strategy.</p>	<p>+: The new NDC provides a reference to a net-zero target including (more) details on the scope and how the country plans to achieve the target in comparison to the previous NDC.</p> <p>(-): The previous NDC included a reference to a long-term strategy or net-zero target but the new NDC does not.</p> <p>0: There is no change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>

⁹ The following link leads to the Internet: <https://unfccc.int/process/the-paris-agreement/long-term-strategies>.

Element	Issues to be covered	Assessment of the change between NDCs
<p>Alignment of NDC with long-term target/net-zero target</p>	<p>We state if the country claims and explains why the 2030 target is in line with its own long-term target/net-zero target.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: The new NDC claims and explains why the 2030 target is aligned with its own long-term target/net-zero target in comparison with the previous NDC.</p> <p>(-): The previous NDC claimed and explained why its 2030 target was aligned with its own long-term target but the new NDC does not.</p> <p>O: There is no change in the information provided between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between previous and new NDCs.</p>
<p>Intended use of Article 6</p>	<p>We describe the intended use of Article 6. Does the NDC state the intention to use Article 6 for reaching the target(s)? (Accounting rules and single year/trajectory target are covered in the Transparency section below). As the precise design and the accounting rules for Article 6 have not been defined yet, it remains unclear to what extent the use of Article 6 will be in line with the principles of environmental integrity and contribute to higher ambition at the international level. Therefore, to assess the ambition of an NDC, both the overall target as well as the part of the target that shall be achieved domestically need to be considered.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: Mitigation ambition is considered to rise, if the share of the target that is to be achieved domestically increases or if the domestic share of the target remains at least the same and the share of the target to be achieved through the use of Article 6 increases and the country formulates strong rules/criteria for the credits to be used.</p> <p>(-): There is no increase in the domestic share of the target and if the country intends to use Article 6, no strict quality criteria are defined.</p> <p>O: The share of the target to be achieved domestically and the intended use of Article 6 has not changed compared to the previous NDC.</p> <p>?: It is unclear/there is no information on the intended use of Article 6 is provided, but use is not excluded.</p>

Element	Issues to be covered	Assessment of the change between NDCs
Explicit consideration of cost reductions of renewables during the last 5 years	<p>We describe if and how the NDC includes consideration of the considerable cost reductions of renewables in last 5 years (no new calculations).</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: The new NDC includes these considerations compared to the previous NDC.</p> <p>(-): The previous NDC included these considerations but the new one does not.</p> <p>0: No change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
Consideration of ambition of subnational and non-state actors	<p>We describe if and how the NDC includes consideration of ambition of subnational and non-state actors.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: The new NDC includes these considerations compared to the previous NDC.</p> <p>(-): The previous NDC included these considerations but the new one does not.</p> <p>0: No change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>

4.4 Mitigation completeness

Table 17: Mitigation completeness

Element	Issues to be covered	Assessment of the change between NDCs
Sector coverage	<p>We check which of the following sectors are:</p> <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) <p>We list additional sectors if included (i.e., domestic and international aviation, and navigation/shipping)</p>	<p>+: The new NDC provides more sectors in comparison with the previous NDC.</p> <p>(-): The new NDC includes fewer sectors or is less clear than the previous NDC.</p> <p>0: No change between NDCs.</p> <p>?: The change between NDCs is unclear.</p>
Gas coverage	<p>We check which of the following gases are included:</p> <ul style="list-style-type: none"> ▶ Carbon dioxide (CO₂) 	<p>+: The new NDC provides more gases in comparison with the previous NDC.</p>

Element	Issues to be covered	Assessment of the change between NDCs
	<ul style="list-style-type: none"> ▶ Methane (CH₄) ▶ Nitrous Oxide (N₂O) ▶ Hydrofluorocarbons (HFCs) ▶ Perfluorocarbons (PFCs) ▶ Sulfur hexafluoride (SF₆) ▶ Nitrogen trifluoride (NF₃) <p>We list additional gases and climate forcers (including black carbon if relevant).</p>	<p>(-): The new NDC includes fewer gases than the previous NDC.</p> <p>○: No change between NDCs.</p> <p>?: The change between NDCs is unclear.</p>

4.5 Mitigation implementation

The purpose of the NDC is to incentivise national action on climate. To this end, we here assess information related to the possible implementation of the NDC. Successful implementation is more likely if:

- ▶ There are sectoral targets;
- ▶ The preparation process was thorough;
- ▶ The implementation process is clearly defined; and
- ▶ The targets are enshrined in national law.

Table 18: Mitigation implementation

Element	Issues to be covered	Assessment of the change between NDCs
Sectoral targets	<p>We describe sectoral targets, if any. List the indicators other than greenhouse gases, if non-greenhouse gas targets are included in the NDC, for instance in case the NDC contains targets such as “renewable energy shares,” “reforested area,” “HFC reductions,” or other gas specific targets etc.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: More detail than the previous NDC.</p> <p>(-): Less detail than the previous NDC.</p> <p>○: No change between NDCs.</p> <p>?: The change between NDCs is unclear.</p>
NDC preparation process	<p>We describe if the NDC provides information on the preparation process of the NDC. Specify whether stakeholder consultation took place, and which stakeholder groups were consulted. We specify whether all sectors that need to contribute to implementation were involved.</p>	<p>+: The NDC preparation process was more inclusive than previously, involving all relevant sector ministries, using expert input and applying a broad stakeholder consultation process as appropriate in the local context.</p>

Element	Issues to be covered	Assessment of the change between NDCs
	<p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>(-): The NDC preparation process is less inclusive than previously, involving fewer sectors’ ministries and experts and not using stakeholder consultation processes.</p> <p>○: No change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
<p>Clarity of national and sectoral implementation plans</p>	<p>We describe the availability of sectoral implementation plans and their consistency with NDC targets. This can include a timeline/period of implementation, a consistent set of sectoral strategies, details of planned policies to meet the NDC, the existence of a tracking and planning processes and/or other institutional arrangements.</p> <p>This would cover the implementation of any NDC targets, even if they are sectoral targets and not defined in terms of emissions reductions.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: More details than the previous NDC.</p> <p>(-): Fewer details than the previous NDC.</p> <p>○: No change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
<p>National climate law(s)</p>	<p>We describe if the NDC target and the long-term target are enshrined in national law.</p> <p>We describe if the targets are transposed into sectoral targets and what the accountability mechanisms are.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: More legal strength than previous NDC, e.g., law approved or under consideration.</p> <p>(-): Less legal strength than previous NDC.</p> <p>○: No change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>

4.6 Transparency

Table 19: Transparency

Element	Issues to be covered	Assessment of the change between NDCs
Availability of information to estimate resulting emissions level of target	We describe if all information is available to estimate resulting emissions level of target. If not, we describe what is missing.	<p>+: More details than the previous NDC.</p> <p>(-): Fewer details than the previous NDC.</p> <p>o: No change between NDCs.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	<p>We summarise if in general the required information to facilitate clarity, transparency and understanding of NDCs was provided. Check the following broad elements: planning process, assumptions and methods.</p> <p>We add “Not applicable” for first NDCs.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: The new NDC followed the guidance in Decision 4/CMA.1.</p> <p>(-): This option is not applicable as the element was not applicable for first NDCs.</p> <p>o: The new NDC does not include guidance in Decision 4/CMA.1.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
Accounting modalities	<p>We describe if the accounting modalities are described clearly. Issues include Article 6 or LULUCF, target trajectory vs. single year target, use of IPCC guidelines, GWPs, methodological consistency.</p> <p>We add “Not included in the NDC” if the NDC does not include this information.</p>	<p>+: The NDC includes a clearer description of the accounting modalities. The coverage of issues where accounting modalities are described is higher than in the previous NDC.</p> <p>(-): The NDC includes less information on accounting modalities. The coverage of issues for which accounting modalities are described is lower than in the previous NDC.</p> <p>o: There is no change to the description of the accounting modalities and the issues covered remain the same.</p> <p>?: It is unclear/there is not enough information to assess the change between NDCs.</p>
Explanation why the target is a fair	We describe if the country has explained why the target is a fair contribution	<p>+: The new NDC provides explanation on why the target is</p>

Element	Issues to be covered	Assessment of the change between NDCs
contribution towards the global goal	<p>towards the global goal and its main argument. (This does not include an evaluation whether the description is convincing.)</p> <p>If an NDC does not explicitly mention a “contribution to the global goal” but includes arguments indirectly, we include them here.</p> <p>We add “Not included in the NDC” if the NDC does not include an explanation why the target is a fair contribution towards the global goal.</p>	<p>considered to be a fair contribution and the previous NDC did not.</p> <p>(-): The new NDC does not provide an explanation on why target is a fair contribution towards the global goal and previous NDC did provide one.</p> <p>○: No change between NDCs.</p> <p>?: The change between NDCs is unclear.</p>

4.7 Selection of NDCs to be analysed

Out of the countries that have submitted their updated or second NDC by 23 April 2021, 20 countries were selected to test and apply the methodology. In order to develop a methodology that is robust yet can be applied to all NDCs, the selection of countries aimed to include a diversity of geographic contexts and NDCs with different emphasis, target types, and approaches to climate change mitigation. In addition, the selection aimed to cover major greenhouse gas emitting countries and realise synergies with the CAT Climate Target Update Tracker.

5 NDC assessments (listed in alphabetical order)

5.1 Argentina

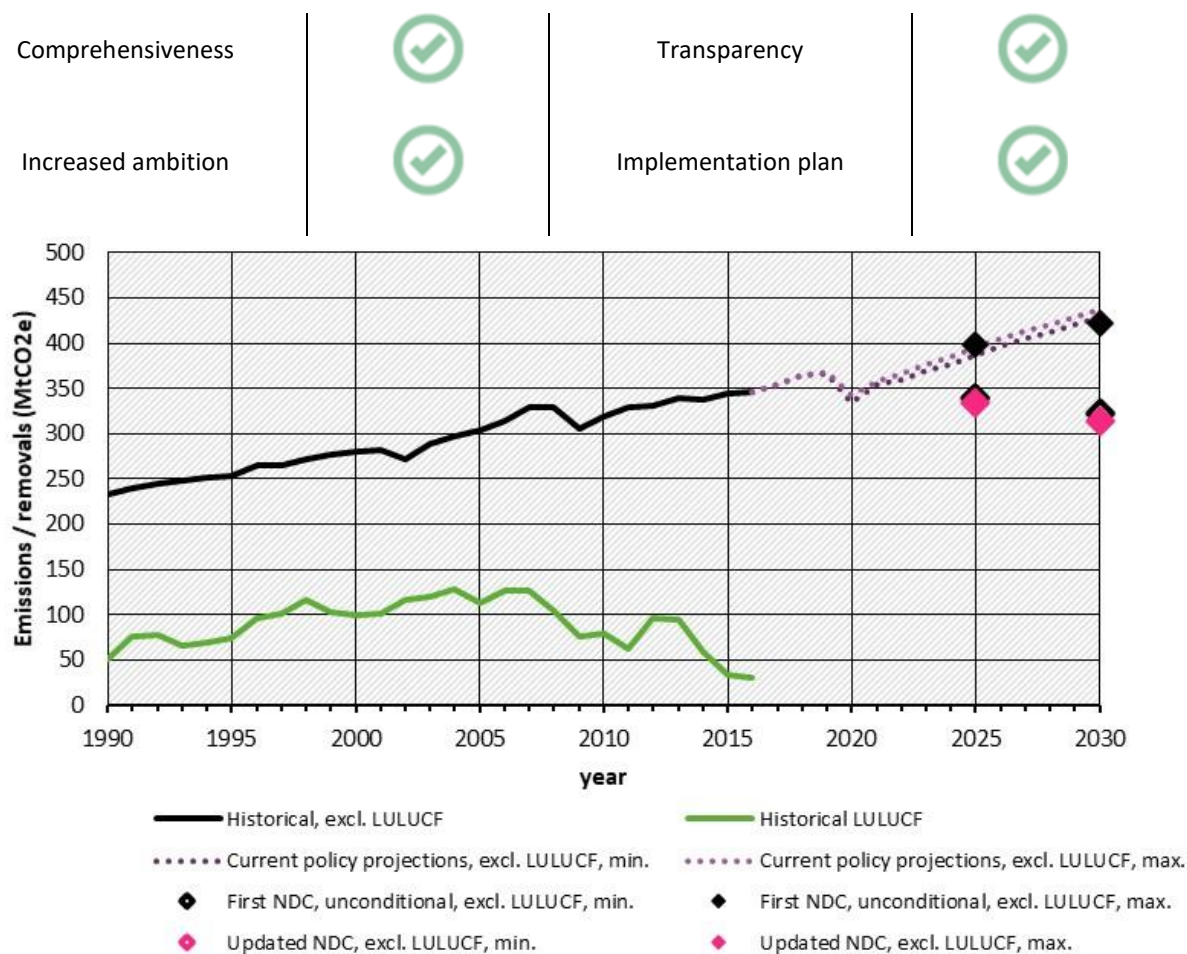
The Republic of Argentina submitted its first NDC in November 2016 (Government of Argentina, 2016) and its second NDC in December 2020 (Government of Argentina, 2020).

Argentina’s second NDC is more elaborate on many fronts than its first NDC. The second NDC’s greenhouse gas (GHG) emission reduction target is more ambitious, committing to a GHG emission level of 359 MtCO₂e (using SAR GWP) in 2030, which corresponds to 313 MtCO₂e using AR4 GWP.

The mitigation target is an absolute GHG emission level target for 2030, is economy-wide, covers all GHGs except for SF₆ and NF₃, as required under the Paris Agreement, and includes a chapter on adaptation targets and adaptation-related measures.

The new NDC holds a higher level of detail regarding implementation plans and provides information to facilitate clarity, understanding and transparency in the 4/CMA.1 decision’s format. However, details relating to the accounting of LULUCF emissions and removals are not provided.

Figure 6: Argentina: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020a, 2020b).

5.1.1 Scope

Table 20: Argentina: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC gives an absolute GHG emission level target for 2030. The target covers all sectors and all GHGs except for NF ₃ . The NDC provides limited information on implementation measures. The NDC does not present a long-term or net-zero target.	The NDC gives an absolute GHG emission level target for 2030. The target covers all sectors and GHGs, except for SF ₆ and NF ₃ . The NDC presents an implementation plan and describes Argentina's intention to present a long-term carbon neutrality target during COP26.	We do not evaluate change between NDCs here, but rather in the following sections.
Adaptation	The NDC presents an adaptation component, which covers national circumstances, vulnerability and climate change impact, efforts done and in process and concrete needs. The design and implementation of these plans will be covered in a forthcoming National Adaptation Plan.	<p><i>"By 2030, Argentine men and women will have knowledge about the adverse effects of climate change, the corresponding adaptation measures, and will have built capacities that allow them to respond in solidarity to the urgent challenge of protecting the planet."</i></p> <p>The NDC contains a chapter which serves as the Second Adaptation Communication under the Paris Agreement. This chapter describes several adaptation measures in 7 sectors and one cross-cutting area to meet this goal. In addition, the NDC describes a forthcoming National Adaptation Plan, that will function as a framework for adaptation planning processes.</p> <p>The NDC describes mitigation co-benefits from several adaptation measures.</p>	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	The NDC mentions finance instruments to reduce vulnerability in the agricultural sector. The NDC does not describe other finance-related details.	The NDC acknowledges the possibility of receiving finance from developed countries and highlights the importance of receiving finance for enhanced mitigation ambition in developing countries, but states it does not depend on it. A Sustainable Finance Working Group was formed to align finance flows with the Argentinean climate action and to strengthen the country's Article 6 position (see Table 21). In addition, an International Finance Unit will	+

Element	First NDC	New NDC	Change
		evaluate and monitor projects submitted to climate investment funds. Climate investments will be included in the national budget.	
Technology transfer and capacity building	Technology transfer and capacity building are described as conditions to fulfil a higher mitigation target. Further details are not provided.	Technology transfer and capacity building are central elements of the implementation plans. The NDC acknowledges the potential benefits of international cooperation, both within Latin America, as well as beyond.	+

5.1.2 Mitigation ambition

Table 21: Argentina: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Argentina shall not exceed a net emission of 483 MtCO _{2e} by the year 2030 (SAR GWP, 422 MtCO _{2e} in AR4 GWP). Argentina has also calculated the impact of conditional measures, which could bring emissions to 369 MtCO _{2e} in 2030 (SAR GWP, 322 MtCO _{2e} in AR4 GWP).	Absolute, economy-wide and unconditional goal of not exceeding the net emission of 359 MtCO _{2e} in 2030 (SAR GWP, 313 MtCO _{2e} in AR4 GWP).	○
Resulting emission level in 2030, excl. LULUCF	The emissions level excluding LULUCF is not available. The emissions level including LULUCF is 422 MtCO _{2e} (AR4 GWP).	The emissions level excluding LULUCF is not available. The emissions level including LULUCF is 313 MtCO _{2e} (AR4 GWP).	+
Conditionality	The target is unconditional. However, the NDC also describes that Argentina had calculated the impact of additional conditional measures, which are subject to international funding, technology transfer and capacity building. These could lead to a GHG emissions level of 369 MtCO _{2e} in 2030 (AR4 GWP).	The target is unconditional.	○
Need for new policies to meet the target	The first NDC's mitigation target could only be met with additional policies, as described in the NDC.	The new NDC's mitigation target cannot be met with current policies.	We do not provide an assessment of the change between NDCs for

Element	First NDC	New NDC	Change
			this element.
LULUCF and removals	The LULUCF sector is not treated separately.	The LULUCF sector is not treated separately.	○
Net-zero target	Not included in the NDC.	Not yet included in the NDC; the NDC describes that Argentina will present a carbon-neutral target for 2050 during COP26.	+
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	○
Intended use of Article 6	The NDC states that any emission reductions within the Argentine territory will be accounted for the accomplishment of the mitigation target.	The NDC describes that Argentina will not take any decisions on the use of Article 6 until the related UNFCCC negotiations are final. The NDC presents five key conditions for potential use of Article 6: <ol style="list-style-type: none"> 1. Intrinsic value of natural resources cannot be captured solely through market mechanisms; 2. Any cooperative mechanism must be transparent, contribute to ensuring environmental integrity, avoid double-counting, increase global GHG mitigation ambition, and be in line with SDGs; 3. Market mechanisms cannot deepen inequity in the distribution of climate change efforts; 4. The market mechanisms and operations should contribute to the capacity of developing countries to honour their NDCs and in no case should they constitute disguised mechanisms of trade protectionism or unilateral impositions; 5. Market mechanisms should ensure full respect for national and provincial legislation and Paris Agreement frameworks. 	+
Explicit consideration of cost reductions	Not included in the NDC.	Not included in the NDC.	○

Element	First NDC	New NDC	Change
of renewables during the last 5 years			
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC, but the NDC acknowledges the need for implementation by subnational actors.	0

5.1.3 Mitigation completeness

Table 22: Argentina: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change and forestry (LULUCF) 	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change and forestry (LULUCF) 	0
Gas coverage	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ 	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs 	(-)

5.1.4 Mitigation implementation

Table 23: Argentina: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC.	Not included in the NDC.	0
NDC preparation process	Not included in the NDC.	The NDC is a result of joint work of 15 working groups, roundtables of federal articulation and working meetings with different sectors of society. The National Climate Change Cabinet (NCCC) then framed the NDC. The NCCC is cross-ministerial, combining different sectors develop climate change policy.	+

Element	First NDC	New NDC	Change
Clarity of national and sectoral implementation plans	Not included in the NDC; the NDC describes the intention to develop implementation measures.	The NDC has a chapter on implementation, featuring a (non-binding and non-exhaustive) list of priority measures. Argentina describes possible implementation practices per sector, including needs for capacity building, technology transfer and finance. The NDC also includes policy plans for monitoring mitigation and adaptation efforts. The NDC does not specify the mitigation potential of the implementation measures.	+
National climate law(s)	Not included in the NDC.	The NDC is not enshrined in national law, but in December 2019, the Argentine government ratified its political commitment to fight climate change by approving Law No. 27,520. This law reaffirms and regulates the international commitments assumed, and institutionalises national climate policy and subnational planning, establishing minimum environmental protection budgets to guarantee adequate actions, instruments and strategies for adaptation and mitigation to climate change throughout the national territory.	+

5.1.5 Transparency

Table 24: Argentina: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC includes all information to estimate the targeted emission level.	The NDC includes all information to estimate the targeted emission level.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	Detailed information is provided regarding clarity and transparency. The NDC follows the 4/CMA.1 guidelines.	+

Element	First NDC	New NDC	Change
Accounting modalities	The NDC states which GWP, guidelines and target type are used and presents some explanation on methods and assumptions.	The NDC states which GWP, guidelines and target type are used and how Argentina would treat Article 6. The NDCs is methodologically consistent and in line with IPCC guidelines.	+
Explanation why the target is a fair contribution towards the global goal	The NDC gives two reasons why the unconditional mitigation target is a fair contribution to the global goal: 1) In 2014, Argentina accounted for 0.7% of global GHG emissions while the NDC's target accounts for 2.8% of the global unconditional targeted reductions in 2030; 2) Argentina claims that 0.6% of the 2°C-compatible global reductions in 2030 would come from Argentina, if the NDC were to be implemented. This is close to the 0.7% of global emissions Argentina was responsible for in 2014.	The NDC gives two reasons why the unconditional mitigation target is a fair contribution to the global goal: 1) Argentine emissions by 2030 will be at the same level as the most recent years (which could mean that emissions do not grow, despite Argentina being a developing country); 2) The NDC states that Argentina will be responsible for 0.9% of global emissions if it achieves its mitigation target. This means that Argentina will not exceed its 2007 share of global emissions, the year in which Argentina's emissions, notably including LULUCF, peaked.	0

5.2 Australia

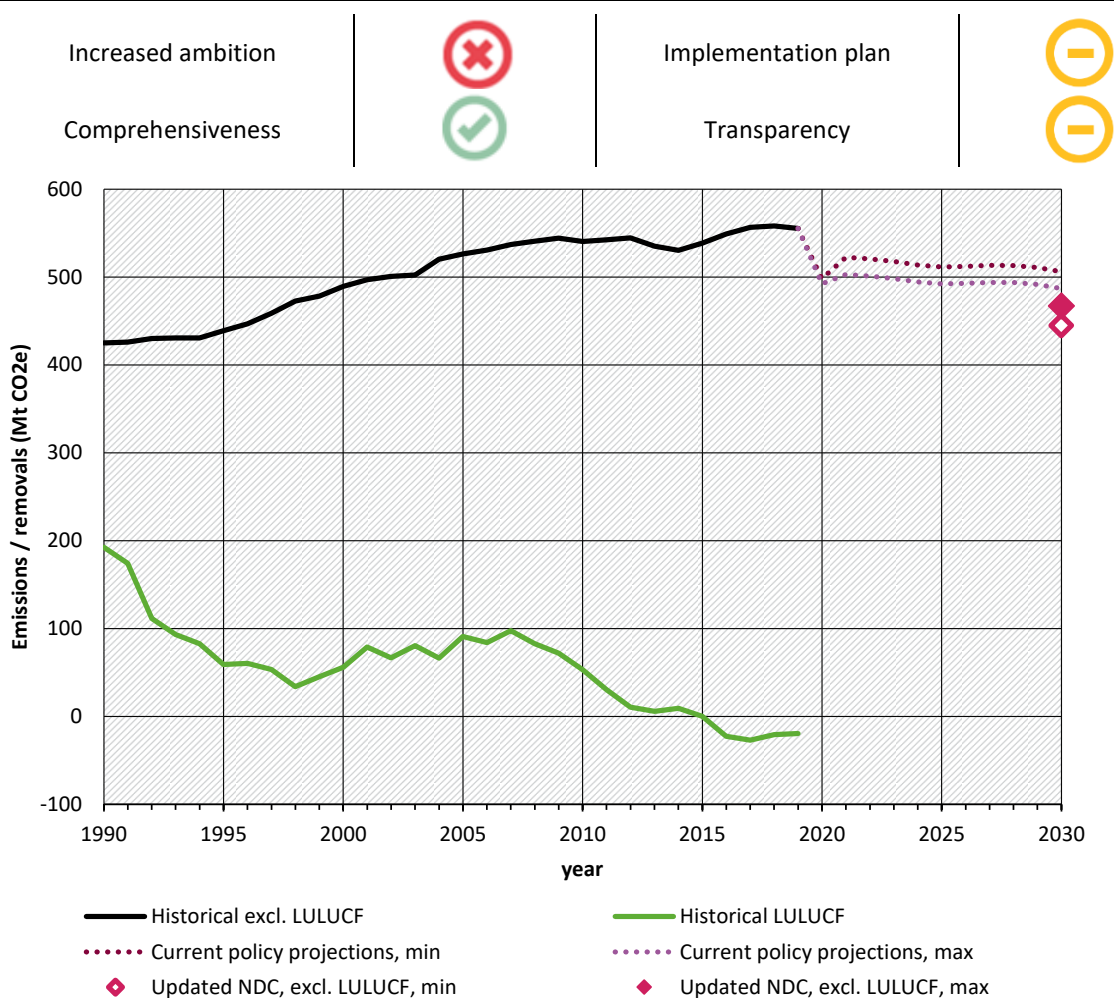
Australia's INDC submitted in August 2015 (Government of Australia, 2015) became its first NDC in November 2016 after it ratified the Paris Agreement. Australia submitted an updated NDC in December 2020 (Government of Australia, 2020).

Australia's updated NDC does not constitute an increase in ambition. It contains the same target as its first NDC, which is to reduce economy-wide emissions by 26 to 28% below 2005 levels by 2030. The NDC covers all sectors and greenhouse gases required under the Paris Agreement. It focuses on mitigation.

Most of the information to facilitate clarity, understanding and transparency is provided as laid out in decision 4/CMA.1, but details on the implementation of the NDC are not included.

Compared to the first NDC, the updated NDC includes information on newly planned policies and measures. A net-zero emissions target is mentioned, but without a timeline.

Figure 7: Australia: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020c, 2020d).

5.2.1 Scope

Table 25: Australia: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC contains a description of the target and sectoral and gas coverage, but no detailed information relating to implementation is provided. A long-term strategy or net-zero target is not mentioned in the NDC.	The NDC contains a description of the target and sectoral and gas coverage. Information on newly planned policies and measures, but no further details relating to the implementation of the NDC is provided. The NDC states that it is Australia's ambition to achieve net zero emissions as soon as possible and that a long-term strategy is under development.	We do not evaluate change between NDCs here, but rather in the following sections.
Adaptation	Not included in the NDC. The NDC mentions the development of a National Climate Resilience and Adaptation Strategy, but it does not form part of the NDC.	A separate section on adaptation was added. In this section, domestic investments in adaptation to climate change are addressed and it is stated that Australia is committed to developing an adaptation communication ahead of COP26.	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	o
Financing	Not included in the NDC.	The NDC provides information on funding for domestic measures, but it does not include information on the provision of financial support to developing countries.	o
Technology transfer and capacity building	Not included in the NDC.	Not included in the NDC.	o

5.2.2 Mitigation ambition

Table 26: Australia: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Economy-wide target to reduce greenhouse gas emissions by 26 to 28% below 2005 levels by 2030. The target will be developed into an emissions budget covering the period 2021-2030.	Absolute economy-wide emissions reduction of 26 to 28% below 2005 levels by 2030, to be implemented as an emissions budget covering the period 2021-2030.	o
Resulting emission level in	The target can be translated into an emissions level excl. LULUCF of 445-467 MtCO ₂ e in 2030.	The target can be translated into an emissions level excl. LULUCF of 445-467 MtCO ₂ e in 2030.	o

Element	First NDC	New NDC	Change
2030, excl. LULUCF	The target incl. LULUCF is 376-386 MtCO _{2e} in 2030.	The target incl. LULUCF is 376-386 MtCO _{2e} in 2030.	
Conditionality	Australia's target is unconditional based on methodological assumptions set out in the attachment to the NDC. Australia will implement the 28% target should circumstances allow, taking into account opportunities to reduce emissions and factors such as the costs of technology.	The NDC states that Australia is aiming to overachieve on the target. No conditions are mentioned.	0
Need for new policies to meet the target	The NDC states that the Australian Government will in 2017-2018 undertake consultations to determine further post-2020 domestic emissions reduction policies.	The NDC does not state whether new policies are needed to meet the target. According to Australia's emissions projections of December 2020, the target will only be met if a "technology sensitivity scenario" is followed.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is included in the target. No information on actions in this sector is provided.	The LULUCF sector is included in the target. No information on actions in this sector is provided.	0
Net-zero target	Not included in the NDC.	The NDC states that it is Australia's ambition to achieve net zero emissions as soon as possible. However, no information on a timeline is given.	+
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	The NDC states that Australia's Long-Term Greenhouse Gas Emissions Reduction Strategy is under development and will be submitted to the UNFCCC ahead of COP26. However, no further information on the strategy or its alignment with the NDC is provided.	0
Intended use of Article 6	Not included in the NDC.	Not included in the NDC.	0
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	The NDC states that the policies and measures presented in the NDC will drive significant emission reductions by driving down the cost of low emissions technologies. However, cost reductions in recent years were not considered explicitly.	0
Consideration of ambition of	Not included in the NDC.	Not included in the NDC.	0

Element	First NDC	New NDC	Change
subnational and non-state actors			

5.2.3 Mitigation completeness

Table 27: Australia: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Land use, land use change and forestry (LULUCF) ▶ Waste 	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Land use, land use change and forestry (LULUCF) ▶ Waste 	0
Gas coverage	Greenhouse gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ ▶ NF₃ 	Greenhouse gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ ▶ NF₃ 	0

5.2.4 Mitigation implementation

Table 28: Australia: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC.	Not included in the NDC.	0
NDC preparation process	Not included in the NDC.	Not included in the NDC.	0
Clarity of national and sectoral implementation plans	Not included in the NDC.	In the updated NDC, newly planned policies and measures are described. However, no information is provided on a national or sectoral implementation plan, or on planning and tracking processes.	+
National climate law(s)	Not included in the NDC.	Not included in the NDC.	0

5.2.5 Transparency

Table 29: Australia: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	GHG emissions in the year 2005 are available in Australia’s National Inventory Report. They allow for estimating the target level.	GHG emissions in the year 2005 are available in the Australia’s National Inventory Report. They allow for estimating the target level.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which largely follows the guidance in decision 4/CMA.1. However, information relating to the planning process is not provided.	+
Accounting modalities	Australia intends to account based on UNFCCC inventory reporting categories using a net-net approach. Australia will apply IPCC guidance for treatment of natural disturbance and variation.	Australia’s 2030 target will take the form of an emissions budget for the period 2021 to 2030. Australia will account based on UNFCCC inventory reporting sectors using a net-net approach across all sectors. Australia will apply the natural disturbance provision in reporting net emissions from infrequent, extreme wildfires.	0
Explanation why the target is a fair contribution towards the global goal	The NDC states that it is an ambitious, fair and responsible contribution. It points out that the target is a significant progression beyond Australia’s 2020 commitment and that it is comparable to the targets of other advanced economies.	The NDC states that it is an ambitious, fair and responsible contribution. The NDCs states that the target is a floor on Australia’s ambition.	0

5.3 Brazil

Brazil's INDC submitted in September 2015 (Government of Brazil, 2015) became its first NDC in September 2016 after it ratified the Paris Agreement. Brazil submitted an updated NDC in December 2020 (Government of Brazil, 2020).

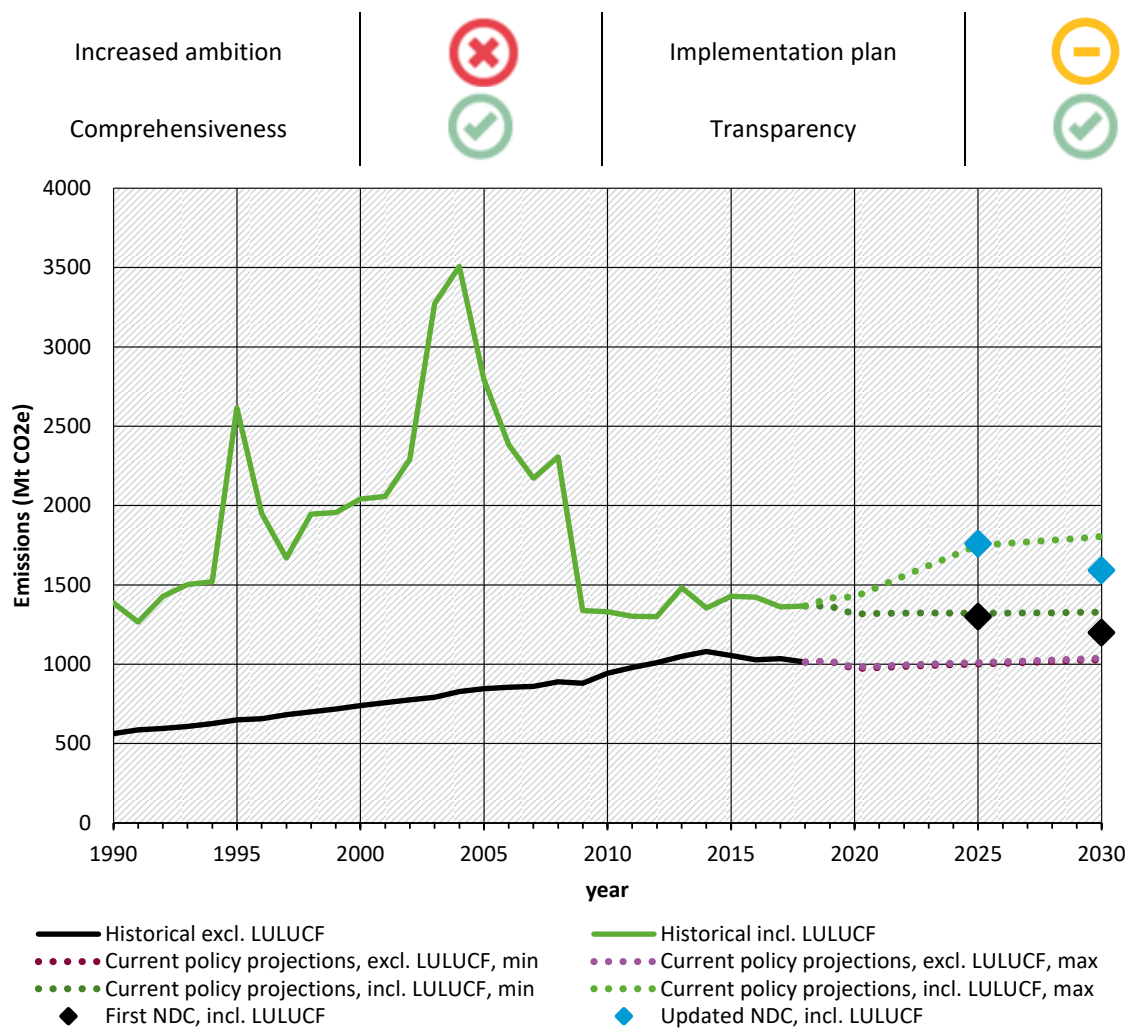
In the updated NDC, Brazil provided the same percentage emissions reductions target as in its first NDC. It has to be noted that the reference year for the targets in the first and the updated NDC is 2005, but the emission inventory for 2005 has been updated in the meantime and emissions are now higher. Therefore, the resulting emissions are higher than in the first NDC, and they are above recent emission levels. As can be seen in Figure 8 below, emissions in the reference year 2005 were close to the all-time emissions high and were considerably lower from 2009 onwards.

The NDC covers total net emissions reported in the national inventory of all greenhouse gases required under the Paris Agreement, except NF₃.

No details on the implementation of the target are provided in the NDC.

Brazil's NDC focuses on mitigation. Information to facilitate clarity, understanding and transparency is provided as laid out in decision 4/CMA.1.

Figure 8: Brazil: Overview evaluation and greenhouse gas emissions



Note: “Current policy projections, incl. LULUCF, Min” was calculated from the current policy (Min) scenario and government LULUCF projections. “Current policy projections, incl. LULUCF, Max” was calculated from the current policy (Max) scenario and LULUCF projections by (Rochedo *et al.*, 2018).

Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020e, 2020f).

5.3.1 Scope

Table 30: Brazil: Scope

Element	First NDC	New NDC	Change
Mitigation	The first NDC contains a clear description of the target, scope and coverage of the NDC, but limited information on implementation. A net-zero target or long-term strategy is not included.	The updated NDC contains a clear description of the target, scope and coverage of the NDC, but limited information on implementation. The NDC states that it is compatible with an indicative long-term objective of reaching climate neutrality in 2060.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
Adaptation	Not included in the NDC. The NDC points out the importance of adaptation and provides information on Brazil's national adaptation plan, but it does not include adaptation-related targets.	Not included in the NDC.	○
Economic diversification	Not included in the NDC.	Not included in the NDC.	○
Financing	The NDC confirms that the NDC is not contingent upon international support.	The NDC states that as of 2021, Brazil will require at least USD 10 billion per year to address the numerous challenges it faces, including the conservation of native vegetation in its various biomes.	○
Technology transfer and capacity building	Not included in the NDC. However, the NDC mentions the importance of south-south cooperation, including capacity building.	Not included in the NDC.	○

The first NDC contains several elements which are no longer provided in the updated NDC. These include the information on adaptation undertakings, information on further measures in all main sectors which Brazil intends to adopt, and information on the global temperature potential metric. However, this information is not specifically required in the reporting guidance. Overall, the scope of the NDC remains largely unchanged.

5.3.2 Mitigation ambition

Table 31: Brazil: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	The first NDC contains a greenhouse gas emissions reduction target of 37% below 2005 levels in 2025 and an indicative target of 43% below 2005 levels in 2030. The target levels are provided in terms of absolute values.	The updated NDC contains a greenhouse gas emissions reduction targets of 37% below 2005 levels in 2025 and 43% below 2005 levels in 2030. However, the absolute values are not provided in the NDC; they can be calculated from the base year level provided in Brazil's Third National Communication.	○
Resulting emission level in 2030, excl. LULUCF	The emissions level including LULUCF is 1.2 GtCO ₂ e, calculated from the base year level provided in Brazil's Second National Communication (2.2 GtCO ₂ e). The target level translates into approx. 0.9 GtCO ₂ e excl. LULUCF.	The emissions level including LULUCF is 1.6 GtCO ₂ e, calculated from the base year level provided in Brazil's Third National Communication (2.8 GtCO ₂ e). The target level translates into approx. 1.3 GtCO ₂ e excl. LULUCF.	(-)

Element	First NDC	New NDC	Change
Conditionality	The NDC is unconditional.	The NDC is unconditional.	0
Need for new policies to meet the target	It does not follow from the NDC whether the target can be met with current polices.	It does not follow from the NDC whether the target can be met with current polices. According to various scenarios, the target can be met with current policies (Climate Action Tracker, 2020e).	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is included in the target; the target is formulated as net emissions. The NDC contains measures including targets for stopping illegal deforestation, restoring forests and enhancing native forest management.	The LULUCF sector is included in the target; the target is formulated as net emissions.	(-)
Net-zero target	Not included in the NDC.	No explicit net-zero target is included, but the NDC states that it is compatible with an indicative long-term objective of reaching climate neutrality in 2060. It states that the final determination of any long-term strategy for the country, in particular the year in which climate neutrality may be achieved, will, however, depend on the proper functioning of the market mechanisms provided for in the Paris Agreement.	0
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	The NDC states that it is compatible with an indicative long-term objective of reaching climate neutrality in 2060.	+
Intended use of Article 6	Brazil reserves the right to decide about the possible use of any market mechanisms that may be established under the Paris agreement.	Brazil intends to use voluntary cooperation under Article 6 of the Paris Agreement, when appropriate.	0
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of	Not included in the NDC.	Not included in the NDC.	0

Element	First NDC	New NDC	Change
subnational and non-state actors			

5.3.3 Mitigation completeness

Table 32: Brazil: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	Not included in the NDC.	Sectors are not mentioned explicitly. The NDC states that it covers total net emissions reported in the national inventory.	0
Gas coverage	Greenhouse gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ 	Greenhouse gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ 	0

5.3.4 Mitigation implementation

Table 33: Brazil: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The NDC states that Brazil intends to adopt further measures, in the areas of energy, transport, industry, agriculture and LULUCF. Quantitative targets are provided for these measures. However, it also states that Brazil's NDC is economy-wide and therefore is based on flexible pathways to achieve 2025 and 2030 objectives. Hence, the NDC does not include specific sectoral targets.	Not included in the NDC.	0
NDC preparation process	Not included in the NDC.	The NDC explains that the institutional framework for the elaboration and implementation of public policies in the area of climate change is set by the Interministerial Committee on Climate Change. The institutional interaction between government and civil society takes place through the Brazilian Forum on	?

Element	First NDC	New NDC	Change
		Climate Change. However, no further details on the NDC preparation process are provided.	
Clarity of national and sectoral implementation plans	Not included in the NDC. The NDC describes intended actions in various sectors, but no national or sectoral implementation plans.	Not included in the NDC. The NDC briefly describes the institutional framework for the elaboration and implementation policies and measures, but national or sectoral implementation plans are not addressed.	0
National climate law(s)	The NDC list the national legislation under which the policies and measures are carried out, but the NDC is not enshrined in national law. The target is not transposed into sectoral targets.	The NDC lists the legal acts governing the institutional framework, but the NDC is not enshrined in national law. The target is not transposed into sectoral targets.	0

5.3.5 Transparency

Table 34: Brazil: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The target level (including LULUCF, rounded to 0.1 Gt CO ₂ e) is provided in the NDC. The corresponding GHG emissions in the year 2005 are available Brazil's Second National Communication.	GHG emissions in the year 2005 are available in Brazil's Third National Communication.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The required information, including on the planning process, on assumptions and methods, is provided. Where elements of the guidance are not applicable to the NDC, this is stated clearly.	+
Accounting modalities	The accounting modalities are described concisely, including the use of IPCC guidelines, GWPs, LULUCF accounting and the possible use of market mechanisms.	Accounting modalities are described, including IPCC guidelines, methods for estimating emissions and GWP. The NDC states that approaches relating to natural disturbances and age-class structure in forests will be defined later.	0
Explanation why the target is a fair contribution	The NDC explains the fairness of the target by referring to the extent of the absolute emissions	The NDC discusses Brazil's contribution in comparison to other countries. It points out that it	0

Element	First NDC	New NDC	Change
towards the global goal	reduction and the decrease of per capita emissions and emissions intensity. The NDC also discusses its target in light of Brazil’s national capabilities and historical responsibility.	has a 2025 and a 2030 target, and it discusses its target in light of Brazil’s national capabilities and historical responsibility.	

5.4 Cambodia

Cambodia's INDC, submitted in September 2015 (The Kingdom of Cambodia, 2015), became its first NDC in February 2017 after it ratified the Paris Agreement. Cambodia submitted an updated NDC in December 2020 (The Kingdom of Cambodia, 2020).

The updated NDC constitutes an increase in ambition compared to the first NDC. The emission reductions excluding LULUCF in the updated NDC result in greater emission cuts than in the original NDC. In the LULUF sector, the new NDC also contains large emission reductions; however, they cannot be compared to the first NDC.

Regarding the agriculture and waste sectors, the scope of the updated NDC was broadened when compared to the first NDC which only included mitigation actions in the energy, industry and LULUCF sectors. Like the first NDC, the updated NDC covers carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O).

As far as implementation is concerned, several sector strategies have been formulated, but they are not yet included in national legislation.

The updated NDC includes comprehensive information on the scenarios and baselines used for preparing the NDC. It further includes a table to facilitate clarity, transparency and understanding that however includes only some elements of decision 4/CMA.1.

Figure 9: Cambodia: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. Cambodia’s National Inventory Report (The Kingdom of Cambodia, 2019), Cambodia’s updated NDC (The Kingdom of Cambodia, 2020).

Note: The high emissions from the FOLU sector from 2010 onwards are explained by major deforestation experienced during these years (the economic land concessions had increased significantly from 2009). Business as usual emissions are taken from the updated NDC. In 2016, there is a discrepancy between these business-as-usual emissions and the historic values presented in Cambodia’s national inventory report and biennial update report. This difference is depicted in the updated NDC, but an explanation is not provided.

5.4.1 Scope

Table 35: Cambodia: Scope

Element	First NDC	New NDC	Change
Mitigation	The first NDC includes information on the mitigation contribution, including its scope and coverage. Existing plans, strategies and actions that support NDC implementation are listed. A net-zero or long-term target is not included.	The updated NDC includes information on the mitigation contribution, its scope and coverage. In addition, comprehensive information is provided on the development of the BAU scenario. A net-zero or long-term target is not included.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
Adaptation	The NDC identifies agriculture, infrastructure, forestry, human health and coastal zones as the most vulnerable sectors to climate change and lists priority actions. A reference to a National Adaptation Programme of Action to Climate Change and the NAP is included.	The adaptation component of the updated NDC lists the same priority sectors as the first NDC but is more comprehensive, including an overview of adaptation priority needs and actions. An Appendix to the NDC provides information on resilience building potential, co-benefits, finance costs and benefits and gender considerations for several actions.	+
Economic diversification	Not included in NDC.	Not included in NDC.	0
Financing	The NDC states that a detailed analysis of the support needs will be required at the start of the implementation. Further, a figure for implementation of activities up to 2018 is provided. Information is provided on the channels for support that Cambodia would use.	The updated NDC includes an overview of finance needs for mitigation and adaptation broken down by sector. Financing cost and benefits are provided for several mitigation actions in an Appendix to the NDC.	+
Technology transfer and capacity building	The NDC states that sectoral climate action plans contain capacity building needs, with the development of an MRV and monitoring and evaluation system being identified as a priority. The NDC further references the technology needs assessment conducted for mitigation and adaptation.	The updated NDC includes an overview of capacity needs grouped by line ministry. The updated NDC references the technology needs assessment conducted for mitigation and adaptation. An Appendix to the NDC provides technology needs for several mitigation and adaptation actions.	+

5.4.2 Mitigation ambition

Table 36: Cambodia: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	The NDC lists conditional mitigation actions in key sectors, including the resulting emission reductions in 2030 compared to the baseline.	The NDC states that in result of several mitigation actions, emission reductions of 64.6 MtCO _{2e} (incl. FOLU) compared with BAU are expected by 2030, which corresponds to a 41.7% reduction compared to BAU.	+
Resulting emission level in 2030, excl. LULUCF	The NDC states a maximum reduction of 3.1 MtCO _{2e} compared to baseline emissions of 11.6 MtCO _{2e} by 2030 for the	The NDC states that the overall emission level under the NDC 2030 scenario is expected to be 90.5 MtCO _{2e} (incl. FOLU) compared to 155 MtCO _{2e} under the BAU	+

Element	First NDC	New NDC	Change
	energy, manufacturing industries, transport and other sectors. For the LULUCF sector, the NDC contains a commitment to a voluntary conditional action to increase forest cover to 60% of national land area by 2030. The NDC does not provide enough information to estimate the resulting emission level in 2030.	scenario. In the updated NDC a different baseline for 2030 BAU emissions is used than under the first NDC. The emission reductions (excluding LULUCF) in the updated NDC are greater than in the first NDC.	
Conditionality	The targets are subject to the availability of international support in particular in accordance with Article 4.3 of the UNFCCC.	Most mitigation measures are indicated as conditional to international support. In an Annex to the NDC, it is stated for each mitigation measure whether it is conditional or not.	0
Need for new policies to meet the target	The NDC states that existing strategies and plans will need to be revised.	Key policies for implementation cited in the NDC are the Cambodia Climate Change Strategic Plan 2014-2023 and related sectoral action plans as well as the National Strategic Plan on Green Growth and the REDD+ strategy.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is addressed through a separate activity that originates from the National Forest Programme 2010-2029. However, the NDC does not provide enough information to estimate the emission reduction from the LULUCF sector in 2030.	The FOLU sector is included in the target and is projected to generate the highest overall emission reduction compared to BAU in 2030 (approx. 38 Mt CO ₂ e). Projections for the 2030 BAU are presented with and without the FOLU sector.	?
Net-zero target	Not included in the NDC. The country did not yet submit a LTS to the UNFCCC.	Not included in the NDC. The country did not yet submit a LTS to the UNFCCC.	0
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	0
Intended use of Article 6	The NDC states that Cambodia looks to receive support through bilateral and multilateral mechanisms, including market-based mechanisms. No further details are provided.	The updated NDC states that Cambodia will look into market mechanisms for future resource mobilisation purposes.	0
Explicit consideration of cost reductions	Not included in the NDC.	The updated NDC notes that due to the downward trend of cost for	+

Element	First NDC	New NDC	Change
of renewables during the last 5 years		renewables they will be a cost-effective mitigation strategy.	
Consideration of ambition of subnational and non-state actors	The NDC states that explicit efforts have been made in mainstreaming climate change into national and sub-national planning.	The updated NDC reiterates that significant progress was made in mainstreaming climate change in national and sub-national development planning.	0

5.4.3 Mitigation completeness

Table 37: Cambodia: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy industries ▶ Manufacturing industries ▶ Transport ▶ Other sectors ▶ Land use, land use change, and forestry (LULUCF) 	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Forestry and land use (FOLU) ▶ Agriculture ▶ Waste 	+
Gas coverage	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	0

5.4.4 Mitigation implementation

Table 38: Cambodia: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The NDC provides potential emission reductions in various sectors, but no sectoral targets.	The updated NDC provides GHG emission reductions per sector in the NDC scenario, but it is unclear whether they constitute binding sectoral targets.	0
NDC preparation process	The NDC was developed under the coordination of the National Council for Sustainable Development. An NDC preparation team was formed with representatives from different Ministries.	A preliminary assessment of NDC implementation and identification of gaps was conducted before starting the NDC preparation process. For planning the NDC update a NDC Roadmap and Stakeholder Engagement Plan was developed, including initial engagement of stakeholders in key sectors. A kick-off event with line ministries initiated the actual update process that included	+

Element	First NDC	New NDC	Change
		engagement with sector experts, local communities, indigenous peoples, the private sector as well as development partners.	
Clarity of national and sectoral implementation plans	The NDC includes an Annex that lists the relevant existing climate change strategy or plan for each of the adaptation and mitigation priority actions. Most of these are sectoral strategies up to 2018. The NDC highlights the need to revise them for the upcoming implementation period.	The update NDC includes an Appendix that provides comprehensive information for each mitigation action, including the sectoral strategy in which it is embedded.	0
National climate law(s)	Not included in the NDC.	Not included in NDC.	0

5.4.5 Transparency

Table 39: Cambodia: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	For each sector the emission reductions resulting from the mitigation actions in 2030 compared to the baseline are provided. No detailed information is provided on individual mitigation actions, or the methodologies applied for measuring their impact.	The Appendix to the updated NDC includes a comprehensive overview of all mitigation actions. This includes information on the GHG mitigation potential, baseline and targets, finance costs and finance benefits and availability of technology.	+
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC includes a table to facilitate clarity, transparency and understanding that includes only some elements of decision 4/CMA.1.	(-)
Accounting modalities	The NDC includes information on the IPCC guidelines used, GWPs, emission factors and activity data for preparing the historical GHG inventory. For projections in the energy sector the LEAP model was used.	The updated NDC includes information on the IPCC guidelines used, GWPs, emission factors and activity data for preparing the historical GHG inventory. Projections were generated using the PROSPECT+ modelling tool for electricity, transport, buildings, cement, other industry (excluding cement), agriculture and waste sectors. Scenarios for the FOLU	0

Element	First NDC	New NDC	Change
Explanation why the target is a fair contribution towards the global goal	The NDC states that the proposed actions would keep per capita emissions at an estimated 2.04 tCO ₂ e which would be below the world average for a 2°C pathway.	<p>sector were developed using the EX-ACT tool.</p> <p>The updated NDC states that Cambodia is proposing an ambitious set of sectoral targets although its per capita emissions are only 1/8th of the global average emissions.</p>	0

5.5 Colombia

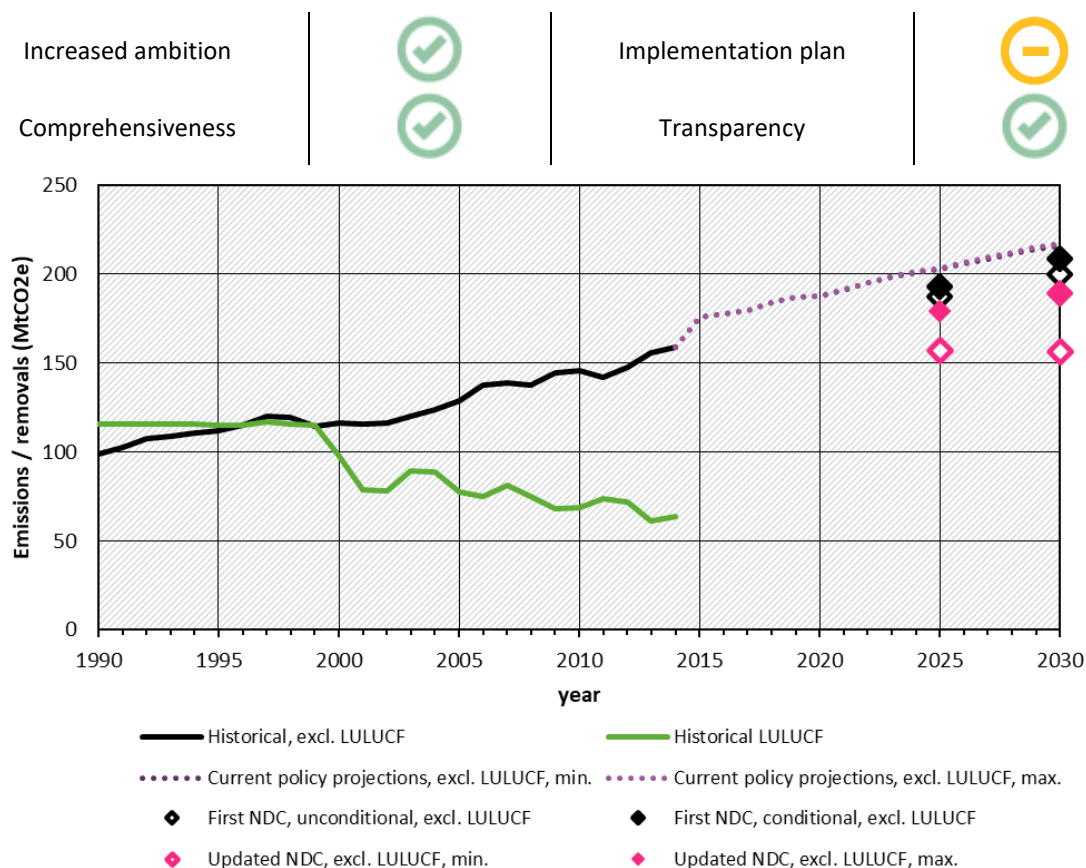
Colombia’s INDC, submitted in September 2015 (Government of Colombia, 2015), became its first NDC in July 2018 after Colombia ratified the Paris Agreement. Colombia submitted an updated NDC in December 2020 (Government of Colombia, 2020).

Colombia has increased its climate change mitigation ambition with its updated NDC. The targeted GHG emission levels under the updated NDC are lower than under the first NDC. Where the first NDC still included a conditional and an unconditional target, the updated NDC only has an unconditional target. The NDC however describes that the realisation of the unconditional target is subject to international support.

The updated NDC is comprehensive on many fronts: the adaptation and mitigation targets cover all relevant sectors and GHGs. Colombia’s updated NDC includes an extensive Annex with detailed sectoral targets, developed by the relevant ministries and other stakeholders. However, these targets and measures are not included in national legislation or equivalent.

Colombia’s updated NDC follows the guidance for the information to facilitate clarity, transparency and understanding to a large extent.

Figure 10: Colombia: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2021c).

Note: The conditional target leads to higher GHG emission level projections than the unconditional target, due to different LULUCF accounting methods. The full CAT country assessment is forthcoming (Climate Action Tracker, 2021c).

5.5.1 Scope

Table 40: Colombia: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC includes two relative GHG emission reduction targets, below a BAU projection for 2030, an unconditional target of 20% reduction and a conditional of up to 30% reduction subject to international support. The targets are economy-wide. There is little detail on the implementation and the NDC does not refer to a net-zero or long-term target.	The NDC includes an unconditional absolute GHG emissions limit for 2030. The target is economy-wide. It also aims for an emissions peak after 2027 and to establish a carbon budget for the period 2020-2030 by 2023 at the latest. The NDC presents two separate deforestation targets and an emissions reduction target for black carbon. The NDC refers to an upcoming long-term strategy, including a carbon neutrality target for 2050.	We do not evaluate change between NDCs here, but rather in the following sections.
Adaptation	The NDC includes a section on adaptation and states that Colombia will focus on resilience with eight strategic lines. These strategic lines also aim for synergies between adaptation and mitigation. The eight strategic lines are the basis for ten priority adaptation actions for 2030. These actions cover different areas, e.g., MRV targets, diversity, water resource management, nature conservation and agriculture.	The NDC presents 30 adaptation goals for six sectors: - transport (5), - energy (3), - agriculture (3), - buildings & health (7), - commerce, tourism & industry (1), and - environment (11) For all the goals, the NDC presents the related Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction targets. SDG 13, climate action, is mentioned with 29 of the 30 adaptation goals, implying mitigation co-benefits. The NDC also presents planning processes for adaptation goals, including their status, implementation cost and need for international support.	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	The NDC describes that Colombia has been making progress in the identification of finance sources and the definition of a climate finance strategy. However, the NDC recognises that financial resources in Colombia are limited, which signals the need for increased financial resources.	Colombia has identified 56 needs for finance (for the adaptation goals), presented in the NDC's Annex A4. The NDC states that these needs are still being developed further. Furthermore, financing is one of the implementation areas for meeting the goals and measures of the NDC. The NDC describes financial schemes that respond to	+

Element	First NDC	New NDC	Change
		mitigation and adaptation goals and Colombia's intention to implement economic instruments to alter consumption and production patterns.	
Technology transfer and capacity building	The NDC describes the need for the development and transfer of technologies and the construction of institutional capacity at different government levels. Further details on the realisation of these are not provided.	Colombia has identified 41 needs for technology development and transfer and 35 needs for capacity building, presented in the NDC's Annex A4.	+

5.5.2 Mitigation ambition

Table 41: Colombia: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	The Republic of Colombia commits to reduce its greenhouse gas emissions by 20% compared to projected BAU emissions by 2030. Subject to the provision of international support, Colombia could increase its ambition from a 20% to a 30% reduction in projected BAU emissions by 2030.	Emit at most 169.44 MtCO ₂ e in 2030 (equivalent to a 51% reduction in emissions compared to projected emissions in 2030 in the baseline scenario), initiating a decrease in emissions between 2027 and 2030 trending towards carbon-neutrality by mid-century. Establish carbon budgets for the period 2020-2030 by 2023 at the latest. Reduce black carbon emissions by 40% from the 2014 level.	+
Resulting emission level in 2030, excl. LULUCF	200 MtCO ₂ e (unconditional); 208 MtCO ₂ e (conditional) (Climate Action Tracker, 2020g, 2021c).	156 – 188 MtCO ₂ e ¹⁰ (Climate Action Tracker, 2020g, 2021c).	+
Conditionality	The NDC has an unconditional target of 20% GHG emission reduction by 2030, compared to the BAU scenario. The NDC has a conditional target of up to 30% GHG emission reduction by 2030, compared to the BAU scenario. The NDC states that the conditional target is subject to international support.	The targets are unconditional.	+

¹⁰ The resulting GHG emission levels for both NDCs are converted to AR4 GWP by the Climate Action Tracker.

Element	First NDC	New NDC	Change
Need for new policies to meet the target	According to CAT analysis, Colombia's current policies are not sufficient to meet the NDC targets (Climate Action Tracker, 2021c).	According to CAT analysis, Colombia's current policies are not sufficient to meet the NDC targets (Climate Action Tracker, 2021c).	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is partially included in the economy-wide target and the corresponding BAU scenario. GHG emissions and removals from forest plantations and permanent crops are included. Carbon removals from natural forests are excluded from the BAU scenario and target.	Colombia includes the LULUCF sector in their overall emissions reduction target. However, due to lack of data availability, the NDC does not include removals from marine and coastal ecosystems, high mountain ecosystems and urban green areas. The updated NDC also includes two additional targets on reducing deforestation: <ol style="list-style-type: none"> 1. The reduction of the yearly deforestation rate to 50,000ha/year by 2030 (equivalent to 59.18 MtCO_{2e} by 2030), and 2. an aspirational additional goal of 0 ha/year by 2030 with the use of Article 6. <p>The deforestation targets are calculated separately.</p>	?
Net-zero target	Not included in the NDC.	The NDC refers to Colombia's announcement during the 2019 Climate Action Summit. Colombia expressed its aspiration towards carbon neutrality in 2050.	+
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	The NDC refers to a Long-Term Strategy, which is still under development, and states that the 2030 target is in line with this Strategy.	+
Intended use of Article 6	Not included in the NDC.	The NDC describes that Colombia intends to cooperate internationally under Article 6, in accordance with the relevant decisions and with the environmental integrity approach indicated by the San José Principles (a declaration on benchmarks for fair and robust carbon markets). However, detailed information is not available to assess whether the	?

Element	First NDC	New NDC	Change
		participation in Article 6 activities contributes to enhanced ambition.	
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	The NDC describes that Colombia considered 89 subnational measures and 24 non-state actors' measures with a bottom-up approach to determine national ambition. The NDC also describes elsewhere that a gradual process of involving subnational and non-state actors into the decision-making has been started, including the consideration of subnational and non-state targets, but it does not mention the explicit consideration of actors' ambition here.	+

5.5.3 Mitigation completeness

Table 42: Colombia: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	Although not further specified, the NDC states that it covers all emission sectors acknowledge by the IPCC: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	Although not further specified, the NDC states that it covers all sectors of the economy: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	0
Gas coverage	Greenhouse gases included: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ 	Greenhouse gases included: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ 	+

Element	First NDC	New NDC	Change
		Other: ▶ Black carbon	

5.5.4 Mitigation implementation

Table 43: Colombia: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC.	<p>The NDC presents 32 sectoral measures and targets in the Annex. The following measures and mitigation potentials are presented by sector for the period 2018-2030:</p> <ul style="list-style-type: none"> ▶ Energy sector: 4 measures incl. energy efficiency, demand side management, fugitive emissions, and diversifying electricity production with renewable energy sources with a targeted total reduction potential of 11.2 MtCO₂e (already adopted in Resolution 40807 of 2018) ▶ Waste: 2 measures; one on solid waste management and another for developing 6 wastewater treatment plants equivalent to 1.31 MtCO₂e and 0.02 MtCO₂e respectively. ▶ Buildings: 2 measures incl. 100% of new buildings to be sustainable by 2026 and until 2030 and the promotion of 8 thermal districts for the substitution of cooling systems in cities. ▶ Agriculture: 5 measures; including sustainable cattle farming of 3,628,959 ha, measures to reduce life cycle emissions from cocoa plantations, adoption of AMTEC 2.0 technology for rice 	+

Element	First NDC	New NDC	Change
		<p>production, and measures to reduce emissions from coffee and panela production.</p> <ul style="list-style-type: none"> <li>▶ Forestry: 2 measures; Development and consolidation of the production chain of commercial forestry plantations, 300,000 ha equivalent to 10.37 MtCO₂e between 2015 and 2030 and reducing the deforestation rate to 50,000 ha/year. <li>▶ Industry: 8 measures incl. energy efficiency, management of N₂Ox emissions from fertilizer production, optimized cement production, project management to improve logistics operations and product handling in supply centres, reducing HFCs, implementing efficient cooling, and implementing a carbon pricing scheme for liquid fuels. <li>▶ Transport: 7 measures incl. 6000 electric vehicles, Performance-based navigation in 100% of Colombia’s flights and airports, Modernisation Programme for Motor Cargo Transport, change from road to river cargo transport mode - Magdalena River, Increase Active Transport and Demand Management (e.g. Bicycles), to 5.5% of modal transport, transport Oriented Development, and rehabilitation of the La Dorada - Chiriguaná - Santa Marta railway corridor. <li>▶ Environment: 2 measures incl. the ecological restauration of 	

Element	First NDC	New NDC	Change
		962,615 ha, and replacing 1 million. traditional cookers with efficient cookers between 2021 and 2030.	
NDC preparation process	The NDC describes that the Colombian government had dialogues with experts from public and private entities, academia, and civil society, to identify mitigation measures that align with sectoral development objectives. The agreements from these dialogues were the basis for the BAU and mitigation scenarios. After this technical advisory process, the government included high-level public actors.	The NDC describes that it was developed under a governmental process, led by the technical teams of the sectoral ministries and other entities. The process involved participation of actors from diverse backgrounds, including public, private, academic and civil society actors. The NDC's commitments were reviewed and discussed in sectoral technical roundtables, to which public and private sector actors also contributed.	+
Clarity of national and sectoral implementation plans	The NDC states that Colombia has prioritised eight Sectorial Mitigation Action Plans to fulfil its mitigation goals. These sectors cover agriculture and rural development, commerce, industry and tourism, transport, housing, city and territory and mines and energy. For the LULUCF sector, mitigation measures were identified under the REDD+ Strategy and Amazon Vision Program, among others. Further details on the actual content of the Sectorial Mitigation Action Plans are not provided.	The NDC includes 148 measures to help realise the NDC's target. There are 32 national measures (see Table 42, sectoral targets), 89 subnational measures, 24 company measures and three black carbon measures. The implementation plans have a high level of detail and include five fields: 1. Planning; 2. Information, science, technology and innovation; 3. Financing and economic instruments; 4. Education and sensibilisation; and 5. Capacity building.	+
National climate law(s)	Not included in the NDC.	The NDC describes several laws including the National Climate Change Policy from 2017 and the Climate Change Law from 2018 that are related to climate change and the NDC targets, but it does not state that the NDC is legally binding. The NDC states that some of the sectoral mitigation measures are binding.	+

5.5.5 Transparency

Table 44: Colombia: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC gives sufficient information to estimate the targeted GHG emission level. The NDC includes the GHG emission reduction target under a BAU scenario and the corresponding GHG emissions of the BAU scenario.	The NDC gives sufficient information to estimate the targeted GHG emission level. The NDC includes the targeted absolute GHG emissions level.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	Colombia followed the Decision 4/CMA.1 guidance on transparency to a large extent, but the NDC does not present in the information in the common tabular format.	+
Accounting modalities	The NDC uses the GWP from IPCC's SAR and provides the BAU scenario corresponding to the GHG emission reduction target. The NDC gives limited information about the (projected) LULUCF emissions. Further details on accounting modalities are not provided.	The NDC describes most of the accounting modalities clearly. The NDC uses the GWP values from the IPCC's AR5. Country-specific emission factors from national research were used where possible and IPCC emission factors were used in other cases. The NDC describes how LULUCF emissions were considered. Colombia will use Article 6 in accordance with the relevant decisions and with the environmental integrity approach indicated by the San José Principles.	+
Explanation why the target is a fair contribution towards the global goal	The NDC states that Colombia's targets are realistic, ambitious and equitable, considering its capabilities and development challenges the country is facing. Furthermore, the NDC explains that by realising the targets, Colombia's per capita GHG emission level will be nearly 4.6 tCO ₂ e/capita by 2030, which is consistent with the pathway established in the UNEP Emissions Gap Report (2014).	Colombia's NDC states that their target is fair as it considers Colombia's vulnerability to the impacts of Climate Change as a middle-income developing country. Furthermore, it states that their updated target of 176 MtCO ₂ e is significantly more ambitious than their 2015 emissions reduction target. Their NDC mentions that Colombia is responding to the call of science, indicated in the IPCC 1.5°C Report.	0

5.6 European Union

The European Union's INDC, submitted in March 2015 (European Commission, 2015), became its first NDC in October 2016 after it ratified the Paris Agreement. The EU submitted an updated NDC in December 2020 (European Commission, 2020).

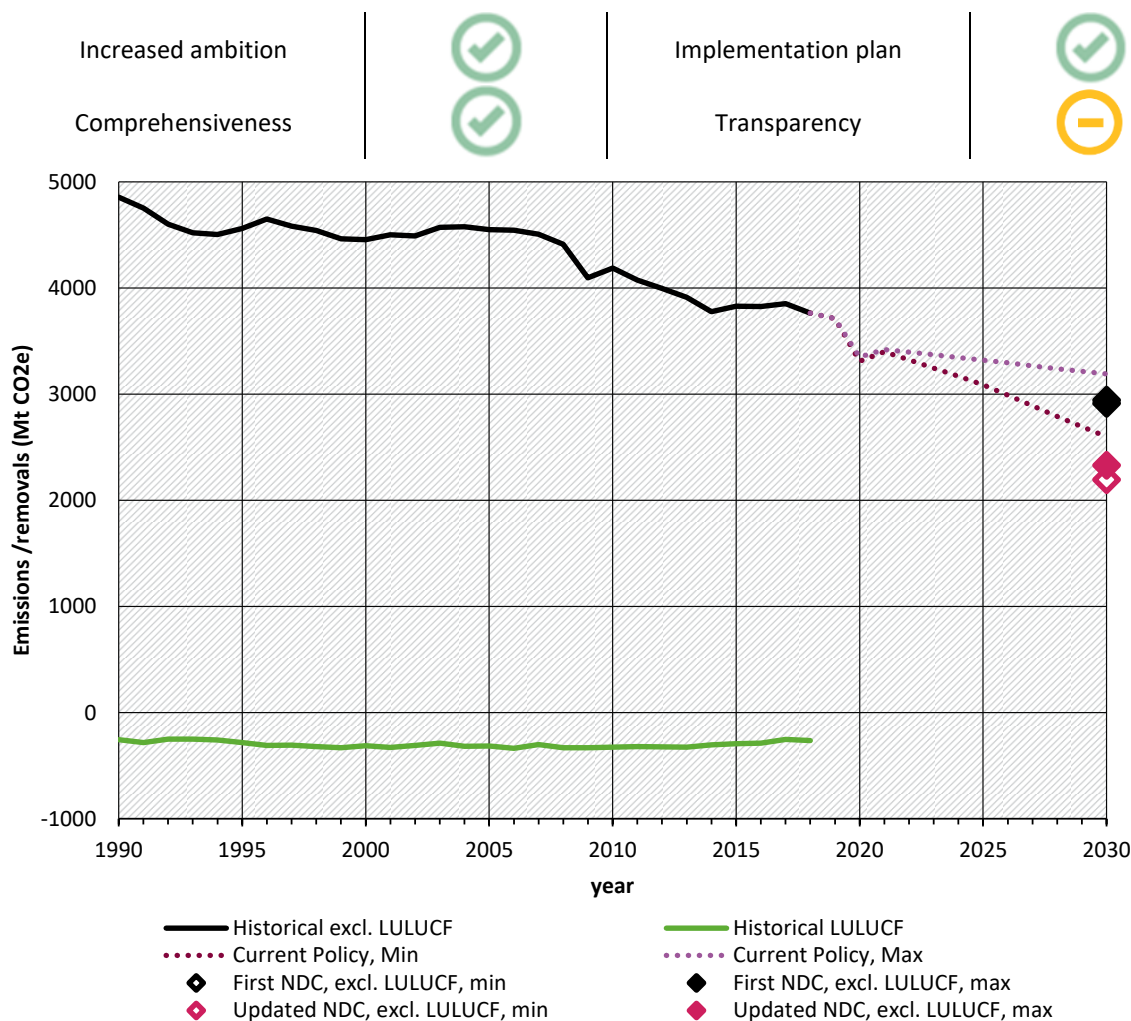
The EU's updated NDC provides a more ambitious emissions reduction target than in its first NDC, committing to an at least 55% emissions reduction by 2030 compared to 1990, instead of at least 40%. In contrast to the first NDC, the LULUCF sector is included in the target of the updated NDCs.

The NDC covers all sectors and greenhouse gases required under the Paris Agreement. It focuses on mitigation.

At the time of submission of the updated NDC, the target was not yet included in national legislation. However, in April 2021, the European Parliament and the Council agreed on the EU Climate Law (News European Parliament, 2021), which enshrines the emissions reduction target in EU law. The key measures to implement the EU NDC are in place, although they are currently under revision to be adapted to the increased target.

Information to facilitate clarity, understanding and transparency is provided as laid out in decision 4/CMA.1. Yet, some questions on the accounting modalities remain open: The NDC states that it is foreseen that the accounting approach will be in accordance with the accounting guidance for NDCs contained in Annex II of decision 4/CMA.1 by 2024, and open questions remain relating to the inclusion of international aviation and navigation (cf. Table 49, below, for details).

Figure 11: EU: Overview evaluation and greenhouse gas emissions



Note: All numbers are for the EU excluding the United Kingdom. The target for first NDC is shown as emissions of the EU excluding the United Kingdom in 1990 minus 40%. Hence it differs from the target which was communicated while the United Kingdom was still part of the EU.

Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020h, 2020i).

5.6.1 Scope

Table 45: EU: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC contains a clear description of the mitigation target, its scope and coverage. The NDC states that legislative proposals to implement the 2030 climate and energy framework are to be submitted in 2015-16. The NDC refers to the EU’s long-term objective at the time of submission, which was to reduce	Information on the mitigation target, its scope and coverage, is provided in line with decision 4/CMA.1. The NDC lists the main instruments that need to be revised to be in line with the -55% target. The NDC refers to the EU’s long-term low greenhouse gas emission development strategy and its 2050 climate neutrality objective.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
	its emissions by 80-95 % by 2050 compared to 1990.		
Adaptation	Not included in the NDC.	Not included in the NDC. Among various initiatives listed in the NDC, the upcoming new adaptation strategy is mentioned, but it does not form part of the NDC.	○
Economic diversification	Not included in the NDC.	Not included in the NDC.	○
Financing	Not included in the NDC.	Not included in the NDC.	○
Technology transfer and capacity building	Not included in the NDC.	Not included in the NDC.	○

5.6.2 Mitigation ambition

Table 46: EU: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	At least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990.	Economy-wide net domestic reduction of at least 55 % in greenhouse gas emissions by 2030 compared to 1990.	○
Resulting emission level in 2030, excl. LULUCF	3391 MtCO _{2e} . This value includes the emissions of the United Kingdom. The emission level of the UK in 1990 was 794 Mt CO _{2e} .	2185 MtCO _{2e} incl. LULUCF, not provided for excluding LULUCF. This value excludes the emissions of the United Kingdom. As the target is formulated as net emissions (including LULUCF), the actual target excluding LULUCF may differ, depending on the size of the LULUCF sink in 2030 vs. 1990.	+
Conditionality	The NDC is unconditional.	The NDC is unconditional.	○
Need for new policies to meet the target	New policies are needed to meet the target, because the policies in place at the time of submission of the first NDC cover the time period up to 2020 only.	New policies are needed to meet the target, because the policies in place at the time of submission of the updated NDC are in line with the 40 %, but not the 55 % target.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The way how the LULUCF sector would be included in the target	Emissions and removals from the LULUCF sector are included in the	?

Element	First NDC	New NDC	Change
	<p>was still open at the time of submission of the first NDC. It was later defined in the LULUCF Regulation (EU) 2018/841. This regulation contributes to reaching the NDC target through the commitment of each Member State that total emissions do not exceed total removals of all land accounting categories.</p>	<p>target, a change in definition to the first NDC. However, a separation of the contribution of the LULUCF sector cannot be determined with the provided information. It is stated in the updated NDC that the policy framework at the time of the submission is subject to revision. The current LULUCF Regulation (EU) 2018/841 contributes to reaching the NDC target through the commitment of each Member State that total emissions do not exceed total removals of all land accounting categories.</p>	
Net-zero target	<p>The first NDC does not refer to a net-zero target, but to the EU's long-term objective at the time of submission, which was to reduce its emissions by 80-95 % by 2050 compared to 1990.</p>	<p>The updated NDC refers to the EU's long-term low greenhouse gas emission development strategy¹¹. It follows from this strategy that the European Council endorsed the objective of achieving a climate-neutral EU by 2050. Information on a trajectory or on the role of the LULUCF sector is not provided.</p>	+
Alignment of NDC with long-term target	<p>The first NDC states that the target is in line with the EU's long-term objective. However, the NDC does not provide an explanation on why it is in line with this objective.</p>	<p>The updated NDC states that the target is in line with the EU's objective of achieving a climate-neutral EU by 2050. However, the NDC does not provide an explanation why it is in line with the climate neutrality target.</p>	o
Intended use of Article 6	<p>The first NDC states that it does not include contributions from international credits.</p>	<p>The updated NDC states that the target is to be achieved through domestic measures only, without contribution from international credits.</p>	o
Explicit consideration of cost reductions of renewables during the last 5 years	<p>Not included in the NDC.</p>	<p>Not included in the NDC.</p>	o
Consideration of ambition of	<p>Not included in the NDC.</p>	<p>Not included in the NDC.</p>	o

¹¹ The EU long-term strategy, available at: The following link leads to the Internet: <https://unfccc.int/process/the-paris-agreement/long-term-strategies>.

Element	First NDC	New NDC	Change
subnational and non-state actors			

5.6.3 Mitigation completeness

Table 47: EU: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste <p>LULUCF is accounted separately. Aviation, including international flights that start in the EU, is included, but not international flights that arrive in the EU. Domestic navigation is included, but international navigation is not.</p>	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ LULUCF ▶ Waste <p>Inclusion of aviation and shipping is subject to revision in light of the enhanced target. Details on these revisions are not included in the NDC.</p>	?
Gas coverage	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ and ▶ NF₃ 	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC; ▶ SF₆ and ▶ NF₃ 	○

5.6.4 Mitigation implementation

Table 48: EU: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC.	Not included in the NDC.	○
NDC preparation process	Not included in the NDC.	The process of adopting the new target and NDC is described briefly. A reference to the impact assessment document and a link to the stakeholder consultations are provided.	+
Clarity of national and sectoral	The NDC states that legislative proposals to implement the 2030 climate and energy framework are to be submitted in 2015-16.	The NDC lists the main instruments that need to be revised to be in line with the -55% target, i.e. the EU Emissions Trading System (EU ETS),	+

Element	First NDC	New NDC	Change
implementation plans		the Effort Sharing Regulation, the LULUCF Regulation and the Governance Regulation.	
National climate law(s)	The target and the long-term objective were not enshrined in a law at the time of the NDC submission. The target was agreed by the European Council.	The target and the climate neutrality objective are currently not enshrined in a law. Both were agreed by the European Council. A “European Climate Law” is under development, which is to include the 2030 target and the climate neutrality objective.	0

5.6.5 Transparency

Table 49: EU: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	GHG emissions in the year 1990 are available in the EU’s National Inventory Report. They allow for estimating the target level (excluding LULUCF).	GHG emissions in the year 1990 are available in the EU’s National Inventory Report. They allow for estimating the target level only including LULUCF. However, open questions remain relating to LULUCF accounting and to the inclusion of international aviation and navigation.	(-)
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1. Information is provided for each of the elements. However, several elements under “scope and coverage,” “planning process,” “assumptions and methodological approaches” are subject to revision.	+
Accounting modalities	The NDC states that a comprehensive accounting framework for LULUCF will be used, but it is not described.	The accounting modalities are not described. It is stated that they are in accordance with methodologies assessed by the IPCC and that it is foreseen that they will be in accordance with the accounting guidance in decision 4/CMA.1 at the latest by 31 December 2024.	?
Explanation why the target is a fair contribution towards the global goal	An explanation why the target is considered fair and ambitious is provided, addressing the consistency with the long-term	An explanation why the target is considered fair and ambitious is provided, addressing the consistency with the climate neutrality objective and the	0

Element	First NDC	New NDC	Change
	objective and the progression beyond the 2020 target.	progression compared to the first NDC.	

5.7 Jamaica

Jamaica's INDC, submitted in November 2015 (Government of Jamaica, 2015), became its first NDC in April 2017 after it ratified the Paris Agreement. Jamaica submitted an updated NDC in July 2020 (Government of Jamaica, 2020).

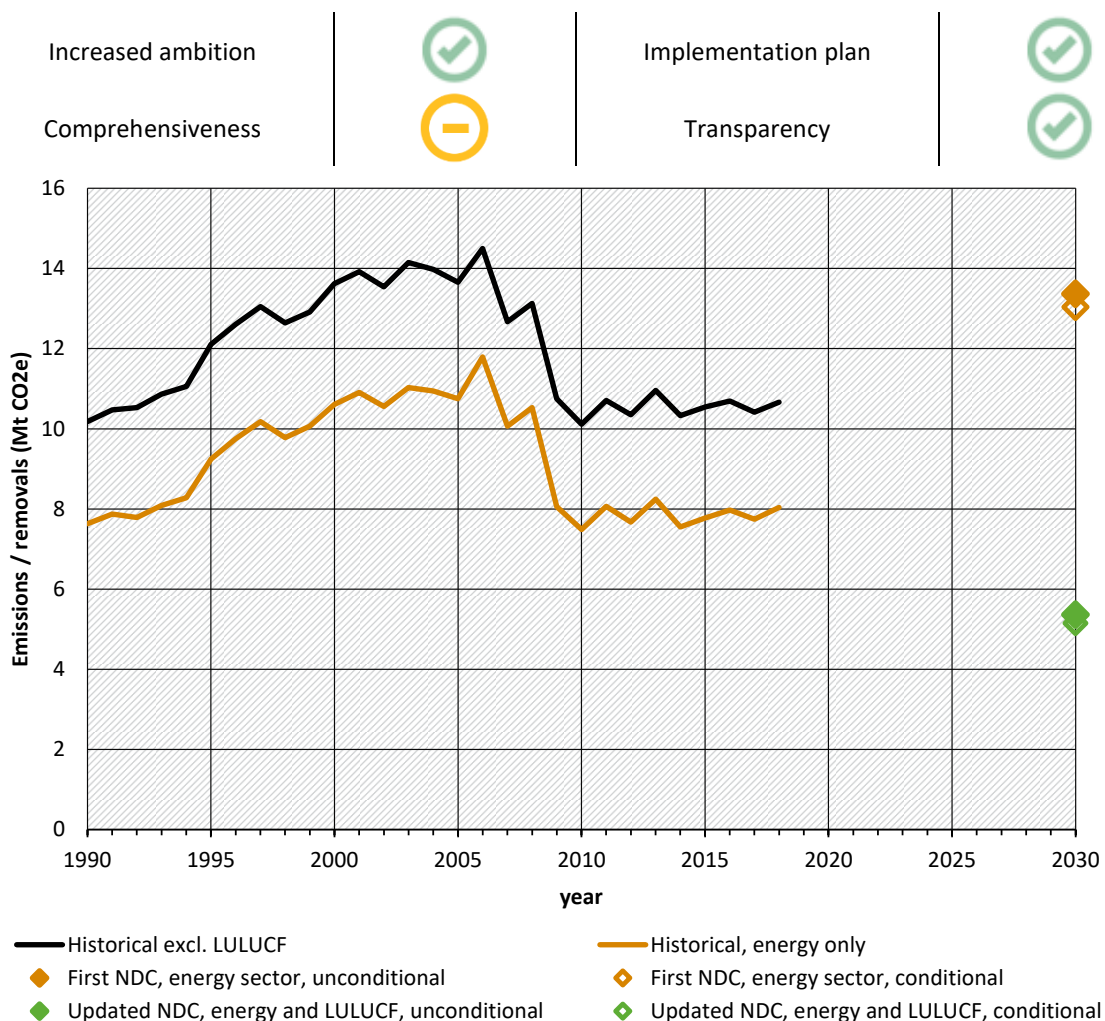
Jamaica's updated NDC represents an increase in mitigation ambition. The previous NDC set the unconditional target to reduce GHG emissions by 7.8% below BAU levels by 2030 and the conditional target to reduce up to 10% below BAU levels by that same year, covering only the energy sector.

The updated NDC covers the energy and land use change and forestry sectors and sets an unconditional target to reduce GHG emissions by 25.4% below BAU levels by 2030 and a conditional target to reduce up to 28.5% by that same year. The updated NDC uses lower BAU emissions for the energy sector in 2030. While the previous NDC assumed emissions of approx. 14.5 MtCO_{2e} in 2030, in the new baseline for the updated NDC these emissions are 8.2 MtCO_{2e} in 2030. The land use change and forestry sector is considered a sink in the baseline, removing 1 MtCO_{2e} in 2030. No details are provided on how much each of the two sectors will contribute to the updated 2030 target. In its first BUR, submitted in 2016, Jamaica reported removals of 1.6 MtCO_{2e} for LULUCF in 2012. In any case the new absolute target is considerably lower in the updated NDC.

In addition to the sectors covered by quantitative commitments of the NDC target, Jamaica states that it will undertake further actions in the agriculture and waste sectors. The NDC states that the country conducted a detailed assessment to determine whether other sources and sinks could be included in the updated NDC but concluded that the data needed to rigorously assess the impact of policies and actions on emissions in other sectors was not available.

The NDC provides the information to facilitate clarity, understanding and transparency as laid out in decision 4/CMA.1.

Figure 12: Jamaica: Overview evaluation and greenhouse gas emissions



Note: The targets of the first NDC apply to the energy sector only. The targets of the updated NDC apply to the sum of the energy and LULUCF sectors.

Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on PRIMAP-hist (Gütschow, J.; Günther, A.; Jeffery, L.; Gieseke, 2021).

5.7.1 Scope

Table 50: Jamaica: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC contains information on the conditional and unconditional mitigation targets, coverage, scope, baseline emissions and planning process. The NDC also contains information on emissions under a BAU scenario for the energy sector. The NDC makes no reference to a long-term target.	The updated NDC includes information on the conditional and unconditional mitigation targets, coverage, scope, baseline emissions and planning process. In addition to BAU emissions for the energy sector, the updated NDC also includes these emissions for the land use change and forestry sector.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
Adaptation	The NDC includes information on the adaptation planning process, referencing the Jamaica Vision 2030 National Development Plan and the Climate Change Policy Framework, as well as the institutional framework and actions taken in implementing adaptation efforts.	The updated NDC makes no reference to a long-term target. Adaptation co-benefits of the mitigation actions in the energy and land-use sector are mentioned; however, no specific adaptation element is included in the updated NDC.	(-)
Economic diversification	Not included in the NDC.	Not included in the updated NDC.	0
Financing	The NDC states that Jamaica will conditionally increase its ambition [...] subject to the provision of international support, seeking in particular support for the expansion of energy efficiency initiatives in the electricity and transportation sectors.	The updated NDC states that Jamaica will conditionally increase its ambition upon international support. The updated NDC stresses the need for sufficient financial resources to undertake the aspired transition in highlights the challenges that result from high debt levels and vulnerability to climate change.	0
Technology transfer and capacity building	Not included in the NDC.	The updated NDC highlights the need for the availability and transfer of technologies to support low carbon and climate-resilient development. It further stresses that opportunities for technology transfer are not always readily accessible for small island developing states (SIDS); therefore Jamaica is looking for intensified cooperation under the Paris Agreement.	+

5.7.2 Mitigation ambition

Table 51: Jamaica: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Unconditional commitment to reduce energy GHG emissions by 7.8% (1.1 MtCO ₂ e) below BAU by 2030. Conditional commitment to reduce energy GHG emissions by 10% (1.5 MtCO ₂ e) below BAU by 2030.	Unconditional commitment to reduce emissions in the energy and land use change and forest sector emissions by 25.4% (1.8 MtCO ₂ e) below BAU by 2030. Conditional commitment to reduce energy and forest sector emissions by 28.5% (2.0 MtCO ₂ e) below BAU in 2030.	0

Element	First NDC	New NDC	Change
		Note: The BAU 2030 scenario has been updated in the new NDC.	
Resulting emission level in 2030, excl. LULUCF	Energy Sector 13.4 MtCO ₂ e (Unconditional) 13.0 MtCO ₂ e (Conditional)	The NDC does not provide enough information to estimate resulting emission levels in 2030 excl. LULUCF.	?
Conditionality	The conditional target is subject to the provision of international support, in particular for the expansion of energy efficiency initiatives in the electricity and transportation sectors.	The conditional target is subject to the provision of international support. No further specification on the nature of the support included in the NDC. Both, the unconditional and conditional target increase in ambition.	+
Need for new policies to meet the target	The NDC will be implemented through the Climate Change Policy Framework and the National Energy Policy 2009-2030. A NAMA for the scale-up renewable energy will form a central component for the implementation of the NDC. There are ongoing processes to develop strategies and action plans within the forestry, agriculture and fisheries sector. Further sectors to address in the near term include human health, tourism, water, human settlement and coastal resources, transport, energy, waste and the finance sector.	The NDC is based on policies, initiatives and commitments that the country has already made.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	Emissions and removals from the LULUCF sector are not included in the NDC target.	The updated NDC target includes emissions and removals from the LULUCF sector (referred to as 'land use change and forestry sector'). The updated NDC provides no details on the contribution of the LULUCF sector to the 2030 target. This sector is a sink in the 2030 BAU scenario.	+
Net-zero target	The NDC does not include a net-zero target.	The NDC does not include a net-zero target.	0
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	0
Intended use of Article 6	The NDC target does not include any contribution from market mechanisms.	The NDC states that Jamaica will explore how it can use Article 6 mechanisms either to support the achievement of its own NDC or to provide additional mitigation	?

Element	First NDC	New NDC	Change
		outcomes to support NDC attainment by other countries once Article 6 rules are agreed.	
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in NDC.	Not included in NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in NDC.	Not included in NDC.	0

5.7.3 Mitigation completeness

Table 52: Jamaica: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy 	<ul style="list-style-type: none"> ▶ Energy ▶ Forestry, and other land use 	+
Gas coverage	<p>Greenhouse gases</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O <p>Other gases</p> <ul style="list-style-type: none"> ▶ NO_x ▶ CO ▶ NMVOCs ▶ SO₂ <p>Jamaica states that these other gases are included in the NDC. However, they do not contribute to the target which is expressed in CO₂e.</p>	<p>Greenhouse gases</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs 	+

5.7.4 Mitigation implementation

Table 53: Jamaica: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The NDC target covers the energy sector only.	The updated NDC covers the energy and land use change and forestry sectors. A sectoral	0

Element	First NDC	New NDC	Change
		breakdown of 2030 BAU emissions for the two sectors is provided but no sector specific targets.	
NDC preparation process	Not included in the NDC.	The planning preparation process was coordinated by the Ministry of Economic Growth and Job Creation using a twelve-months participatory process with public and private sector stakeholders. Representatives from more than 10 ministries, departments and agencies of the government along with international development partners, private sector entities and civil society.	+
Clarity of national and sectoral implementation plans	The NDC will be implemented through the Climate Change Policy Framework which was adopted in 2015. The NDC mentions the National Energy Policy (NEP) 2009-2030 as key for implementation. It includes a target to reduce GHG emissions from the energy sector to 3.5 Mt (no metric provided) per year by 2030. The NDC states that the NDC target of reducing GHG emissions 7.8% below the projected BAU emissions of 14.5MtCO ₂ e in 2030 is predicated on the current level of implementation of the NEP and the existing pipeline of projects.	The updated NDC maintains the reference to the Climate Change Policy Framework. The specific reference to the National Energy Policy 2009-2030 is not included in the updated NDC. The Forest Policy for Jamaica, adopted in 2017, has a goal of achieving no net loss of forest cover (referenced in the NDC) and to increase the area of forest cover by at least 2% over the next ten years (not referenced in the updated NDC). The framework document creating the country's forestry department requires the maintenance of not less than 30% of the country's land mass as forests (not referenced in the updated NDC).	o
National climate law(s)	Not included in NDC.	Not included in NDC.	o

5.7.5 Transparency

Table 54: Jamaica: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC includes the BAU reference value as well as BAU emissions by 2030 in the energy sector which is the only sector covered. The BAU scenario is based on the assumption that all fuels used in	The updated NDC includes the BAU reference value as well as BAU emissions in the energy and forestry sectors by 2030. The BAU scenario in the energy sector was calculated assuming policies in place as of 2005 and	+

Element	First NDC	New NDC	Change
	the energy sector grow at rates consistent with the GDP growth rate, GDP per capita growth rate or a compound annual growth rate calculated by best-fit regression on energy sector data from 2000-2005.	using the LEAP model assuming a GDP growth of 2% per year between 2019 and 2030 using IMF projections. Further, gradual population growth is assumed from 2.7 million in 2018 to 2.8 million. in 2040 based on historical data from the Statistical Institute of Jamaica and projections from the UN. The baseline for the land use change and forestry sector was determined using Jamaica's 2013 Land Use Change Assessment, taking account of historical trends as well as Jamaica's agricultural production targets set out in the national development plan Vision 2030 Jamaica. The change of land use patterns as a result of key policies (no net loss of forest cover, tree planting) was calculated using the 2006 IPCC Guidelines for National GHG inventories.	
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1 and provides information for each of the elements.	+
Accounting modalities	The NDC provides information on the methodologies for estimating emissions (i.e. 2006 IPCC guidelines, national and international statistics, GDP growth projections). The NDC includes a mid-term target for 2025.	The updated NDC provides more details on the assumptions for the baseline scenarios. The NDC does not specify the expected contribution of the LULUCF sector to the 2030 target. The NDC only includes a single year target and not a target trajectory. The 2025 mid-term target is not mentioned in the NDC.	0
Explanation why the target is a fair contribution towards the global goal	The NDC states that it will result in per capita emissions of 4.7 tonnes of CO ₂ which would be consistent with 1.5°C of warming and thus more ambitious than the global goal of 2°C.	The updated NDC states that it reflects Jamaica's strong commitment to the implementation of the Paris Agreement. Although Jamaica is a developing country and a SIDS, the NDC will move it closer to decoupling economic growth from its emission profile. It also notes that the country's emissions per	0

Element	First NDC	New NDC	Change
		capita will remain substantially lower than the global average.	

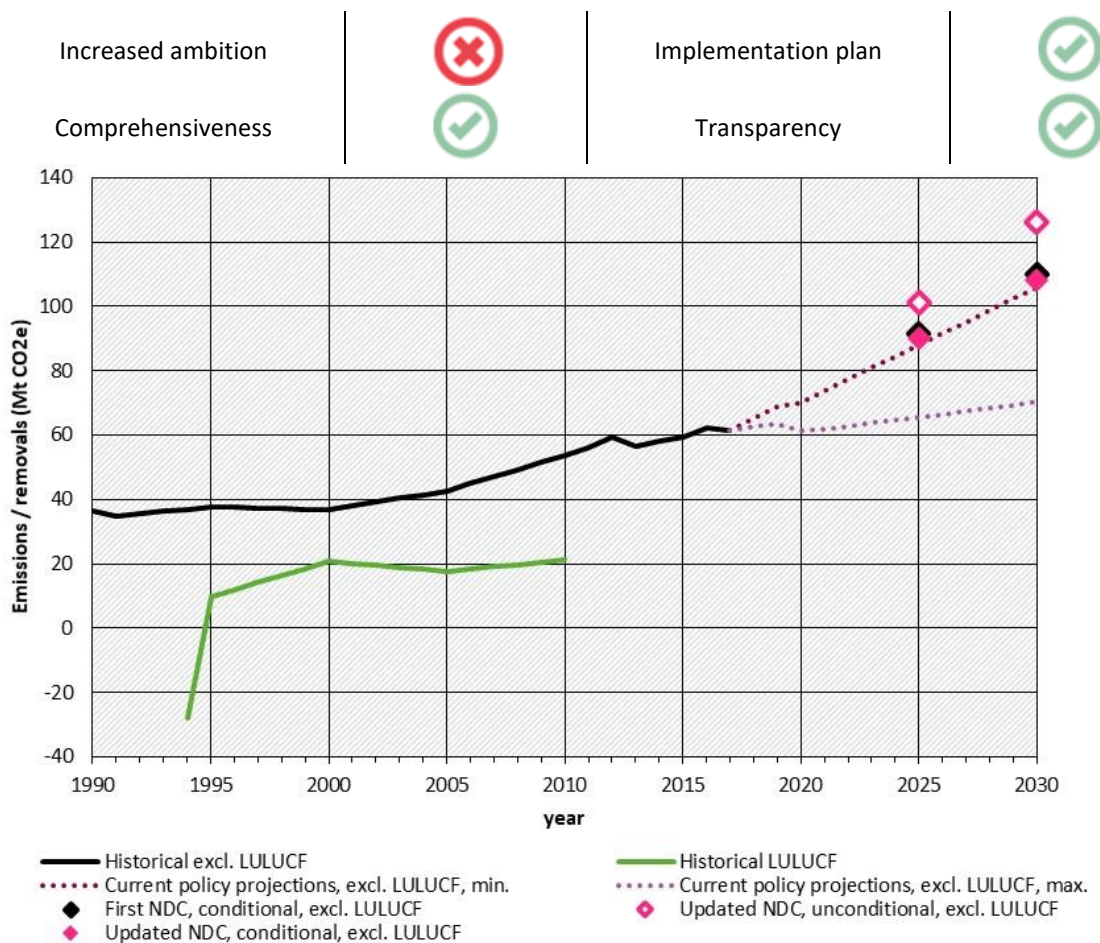
5.8 Kenya

Kenya’s INDC (Government of Kenya, 2015) from July 2015 became its first NDC in December 2016, after Kenya ratified the Paris Agreement. Kenya submitted an updated NDC in December 2020 (Government of Kenya, 2020).

While Kenya’s updated NDC increased the conditional target from a 30% to a 32% reduction in GHG below the reference value of 143MtCO_{2e}¹² by 2030 and introduced an unconditional component, the new NDC does not represent an increase in ambition. Projections that include currently implemented policies result in lower emissions than the new conditional and unconditional targets. Achievement of these targets does not require the implementation of additional climate policies.

Kenya’s updated NDC covers all sectors and greenhouse gases required under the Paris Agreement. It includes a mitigation and an adaptation component. The NDC provides the information to facilitate clarity, understanding and transparency, as laid out in decision 4/CMA.1.

Figure 13: Kenya: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020j, 2020k).

¹² Expressed in IPCC Second Assessment Report (SAR) values. This value converts to 131 MtCO_{2e} in IPCC Fourth Assessment Report (AR4) GWP values.

5.8.1 Scope

Table 55: Kenya: Scope

Element	First NDC	New NDC	Change
Mitigation	<p>The first NDC contains information on Kenya’s conditional mitigation target, coverage, scope, baseline emissions and planning process. The NDC does not provide information on sectoral emissions or sectoral contributions to the 2030 target. The first NDC contains no reference to a net-zero or other long-term target.</p>	<p>The updated NDC contains information on the same aspects as the first NDC, but generally provides more detailed information. The updated NDC does not include information on sectoral emission reduction targets, or on a long-term target. Whereas Kenya’s first NDC was fully conditional, the updated NDC includes an unconditional component.</p>	<p>We do not evaluate change between NDCs here, but rather in the following sections.</p>
Adaptation	<p>The first NDC has a strong focus on adaptation measures. Kenya commits to “ensure enhanced resilience to climate change [...] by mainstreaming climate change adaptation into the Medium Term Plans (MTPs) and implementing adaptation actions.” Kenya’s first NDC outlines 18 priority adaptation actions, including to “increase the resilience of current and future energy systems” and to “integrate climate change adaptation into the public sector reforms.” All actions are presented in Kenya’s National Climate Change Action Plan (NCCAP) and further elaborated in the National Adaptation Plan (NAP).</p>	<p>Like the previous NDC, Kenya’s updated NDC has a strong focus on adaptation. Kenya’s adaptation goal is to ensure a climate resilient society; the country aims at achieving this by mainstreaming climate change adaptation into the MTPs and County Integrated Development Plans, and by implementing adaptation actions. Kenya estimates that the cost of adaptation up to 2030 is USD 43.9 billion. The government intends to “mobilise domestic resources to cater for 10% of the adaptation costs.” The country will require international support for the remaining 90%. The updated NDC includes 50 prioritised adaptation programmes across 13 sectors. The updated NDC provides that “mitigation co-benefits of adaptation actions will be included in the mitigation contribution of this NDC.”</p>	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	<p>The mitigation component of Kenya’s first NDC is fully conditional and subject to international support. Achievement of the adaptation component also depends on international support.</p>	<p>The updated NDC provides an estimate of the required mitigation and adaptation costs: USD 17.7 and 43.9 billion until 2030, respectively. Kenya intends to bear 21% of the mitigation costs and 10% of the adaptation costs from domestic</p>	+

Element	First NDC	New NDC	Change
	<p>The government estimates that over USD 40 billion is needed for adaptation and mitigation actions until 2030.</p> <p>The Kenyan government states that its NDC will be implemented “with both domestic and international support.” Considering that the mitigation target is fully conditional, this suggests that Kenya will bear a share of the adaptation costs itself, but further details are missing.</p>	<p>resources. International support should cover the remaining costs.</p> <p>Kenya will consider “any climate finance in terms of loans as part of her domestic contribution.”</p>	
Technology transfer and capacity building	<p>The first NDC provides that Kenya needs “international support in the form of finance, investment, technology development and transfer, and capacity-building to fully realise her intended contribution.”</p> <p>Kenya’s mitigation goal is fully dependent on such international support.</p>	<p>Like the first NDC, Kenya’s updated NDC states that the country needs international support, including in the form of technology transfer and capacity building, to achieve its mitigation and adaptation goals.</p>	0

5.8.2 Mitigation ambition

Table 56: Kenya: Mitigation ambition

Element	First NDC	New NDC	Change
Country’s formulation of the target	To abate GHG emissions by 30% by 2030 relative to the scenario of 143 MtCO _{2e} ¹³ [...] subject to international support in the form of finance, investment, technology development and transfer, and capacity building.	To abate GHG emissions by 32% by 2030 relative to the scenario of 143 MtCO _{2e} ¹⁴ [...] subject to national circumstances, Kenya intends to bear 21% of the mitigation costs from domestic resources.	+
Resulting emission level in 2030, excl. LULUCF	Conditional target: 110 MtCO _{2e} (AR4 values)	Conditional target: 108 MtCO _{2e} (AR4 values) Unconditional target: 126 MtCO _{2e} (AR4 values) ¹⁵	+
Conditionality	The first NDC target is fully conditional.	The updated NDC is partly unconditional. However, the NDC	+

¹³ Expressed in SAR values. This value converts to 131 MtCO_{2e} in AR4 GWP values.

¹⁴ We assume this is expressed in SAR values. This value converts to 131 MtCO_{2e} in AR4 GWP values. The new NDC states that Kenya will use AR5 GWP values to calculate CO₂ equivalents (emphasis added). See also Section 5.8.5 on Transparency.

¹⁵ The updated NDC provides that Kenya will bear 21% of the mitigation costs itself. For the purpose of this assessment, we assumed that 21% of the new NDC target is unconditional; this is a reduction of 16 MtCO_{2e} by 2030 from BAU levels.

Element	First NDC	New NDC	Change
		<p>does not specify what share of reductions are unconditional.</p> <p>Kenya estimates that mitigation measures will require USD 17.7 billion and will bear 21% of the mitigation costs itself. For the purpose of this assessment, we assumed that 21% of the new NDC target is unconditional; this is a reduction of 16 MtCO_{2e} by 2030 from BAU levels.</p>	
Need for new policies to meet the target	Kenya's first NDC target, which was fully conditional, lay above current policy projections (Climate Action Tracker, 2020j). This means that Kenya could reach its target without the implementation of additional policies. In fact, the country could substantially increase emissions and still reach its NDC target.	Same as for the previous NDC target. Kenya's unconditional NDC target lies above the range of current policy projections and its conditional NDC within this range (Climate Action Tracker, 2020j). Achievement of the unconditional or conditional target does not require the implementation of additional climate policies.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The first NDC includes the LULUCF sector, which is responsible for a substantial share of Kenya's GHG emissions ¹⁶ . Whereas the NDC provides no sectoral emission reduction target for the LULUCF sector, the <i>Nationally Determined Contribution Sector Analysis Report</i> outlines that the LULUCF sector is to reduce GHG emissions by 20.1 MtCO _{2e} by 2030 (MENR, 2017a). This translates to 47% of Kenya's NDC goal.	Like the first NDC, Kenya's updated NDC covers the LULUCF sector, but provides no sectoral target.	○
Net-zero target	Not included in the NDC.	While Kenya is currently working on its long-term emission reduction development strategy, the NDC provides no information on this strategy or any long-term targets.	○
Alignment of NDC with long-term target/net-zero target	Not applicable.	Not applicable.	○
Intended use of Article 6	In its first NDC, Kenya "[did] not rule out the use of international market-based mechanisms in line with agreed accounting rules." No further information is provided.	In its updated NDC, Kenya states that it intends to use both market and non-market mechanisms under Article 6 of the Paris agreement if the country exceeds its NDC target.	○

¹⁶ 31% in 2015, according to the *Nationally Determined Contribution Sector Analysis Report 2017* (MENR, 2017a).

Element	First NDC	New NDC	Change
		Use of Article 6 will be subject to guidance adopted by the CMA and domestic legislation.	
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

Under Kenya's baseline scenario, greenhouse gas emissions are projected to increase to 143 MtCO_{2e} by 2030¹⁷, which is an increase of more than 100% compared to 2017 emissions (Climate Action Tracker, 2020j). The baseline scenario is based on Kenya's National Climate Change Action Plan 2013-2017. In 2017, the Ministry for Environment and Natural Resources released updated emission projections for Kenya, which show that economy-wide GHG emissions will be 124 MtCO_{2e} instead of 143 MtCO_{2e} in 2030 (MENR, 2017a).

Further, the Ministry of Environment and Natural Resources published a sectoral analysis of the first NDC in 2017 (MENR, 2017a). The report identified the mitigation potential of each economic sector and found that Kenya has the potential to reduce emissions by 60% below the baseline by 2030 (MENR, 2017a).

5.8.3 Mitigation completeness

Table 57: Kenya: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Forestry and other land use ▶ Waste 	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Forestry and other land use ▶ Waste 	0
Gas coverage	<p>The NDC states that the following gases are prioritised:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O <p>PFC, HFC, SF₆ and NF₃ may be included in subsequent NDCs. According to Kenya's updated NDC,</p>	0

¹⁷ Expressed in SAR GWP values. This value converts to 131 MtCO_{2e} in AR4 GWP values.

Element	First NDC	New NDC	Change
		these gases are currently negligible.	

5.8.4 Mitigation implementation

Table 58: Kenya: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC. However, in 2017, the Kenyan government presented such targets in the <i>Nationally Determined Contribution Sector Analysis Report</i> (MENR, 2017a).	Not included in the NDC.	○
NDC preparation process	The first NDC builds on “the participatory multi-stakeholder and cross-sectoral consultative processes during the development of National Climate Change Response Strategies and the National Climate Change Action Plan at national and county levels.” Further details are not provided.	The updated NDC contains a section on the NDC revision process. The Climate Change Directorate under the Ministry of Environment and Forestry led this process. Stakeholders from various national and county government sectors, civil society, academia and the private sector were consulted. This happened in person prior to the COVID-19 pandemic and online thereafter.	?
Clarity of national and sectoral implementation plans	The first NDC provides that Kenya’s planning process for mitigation and adaptation actions is based on the National Climate Change Action Plan and the National Adaptation Plan. These plans are to be reviewed every five years to inform the Medium-Term Plan (MTP), which is updated every five years. The MTPs outline main policies and legal reforms, as well as programmes and projects that the government plans to implement within that five-year period. The NDC lacks more detailed information on implementation plans.	The updated NDC states that Kenya’s planning process is based on Vision 2030 (Kenya’s development programme), the Medium-Term Plans, the National Climate Change Action Plans I and II, and the National Adaptation Plan. As in the first NDC, more specific information is lacking.	○
National climate law(s)	Not included in the NDC. The NDC states that “a National Climate Change Framework Policy and legislation are in their final stages of enactment to facilitate	Not included in the NDC.	○

Element	First NDC	New NDC	Change
	<p>effective response to climate change.”</p> <p>Kenya’s Climate Change Act entered into force in 2016. This law provides the regulatory framework for climate change action but does not include an emission reduction target for 2030.</p>		

5.8.5 Transparency

Table 59: Kenya: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The information to estimate the target emission level is provided. The first NDC sets the target of reducing GHG emissions by 30% relative to the BAU scenario of 143 MtCO _{2e} ¹⁸ by 2030.	Same as in the previous NDC.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1 and provides information for each of the elements.	+
Accounting modalities	The NDC provides information on the metric applied (GWPs of SAR) and methodologies for estimating emission (i.e. IPCC guidelines, national statistics, sector activity and economic forecasts). Specifics, however, are lacking.	Besides the information on the metric applied, the new NDC provides the same information as the first NDC. Regarding the metric applied, the new NDC states that Kenya will use IPCC AR5 GWP to calculate CO ₂ equivalents. As this is written in future tense, we assume the reference to the baseline value of 143 MtCO _{2e} is still expressed in SAR values.	0
Explanation why the target is a fair contribution towards the global goal	The NDC states that Kenya’s mitigation target is fair, because the country has a low historical contribution (i.e. 0.1% of total global emissions). Further, Kenya’s ability to implement mitigation actions is limited; and poverty alleviation and sustainable	As in the previous NDC, Kenya considers its updated NDC fair, because the country’s responsibility for climate change is low and its capacities limited. Poverty alleviation remains the country’s key priority.	0

¹⁸ Expressed in SAR GWP values. This value converts to 131 MtCO_{2e} in AR4 GWP values.

Element	First NDC	New NDC	Change
	<p>economic growth are the country's priorities.</p>	<p>Further, Kenya states its updated NDC represents a progression in ambition, with a higher conditional target.</p> <p>While not explicitly mentioned in its updated NDC, Kenya also included an unconditional mitigation component.</p>	

5.9 Mexico

Mexico's INDC submitted in 2015 (Government of Mexico, 2015) became its first NDC in September 2016, after Mexico ratified the Paris Agreement. Mexico submitted an updated NDC in December 2020 (Government of Mexico, 2020).

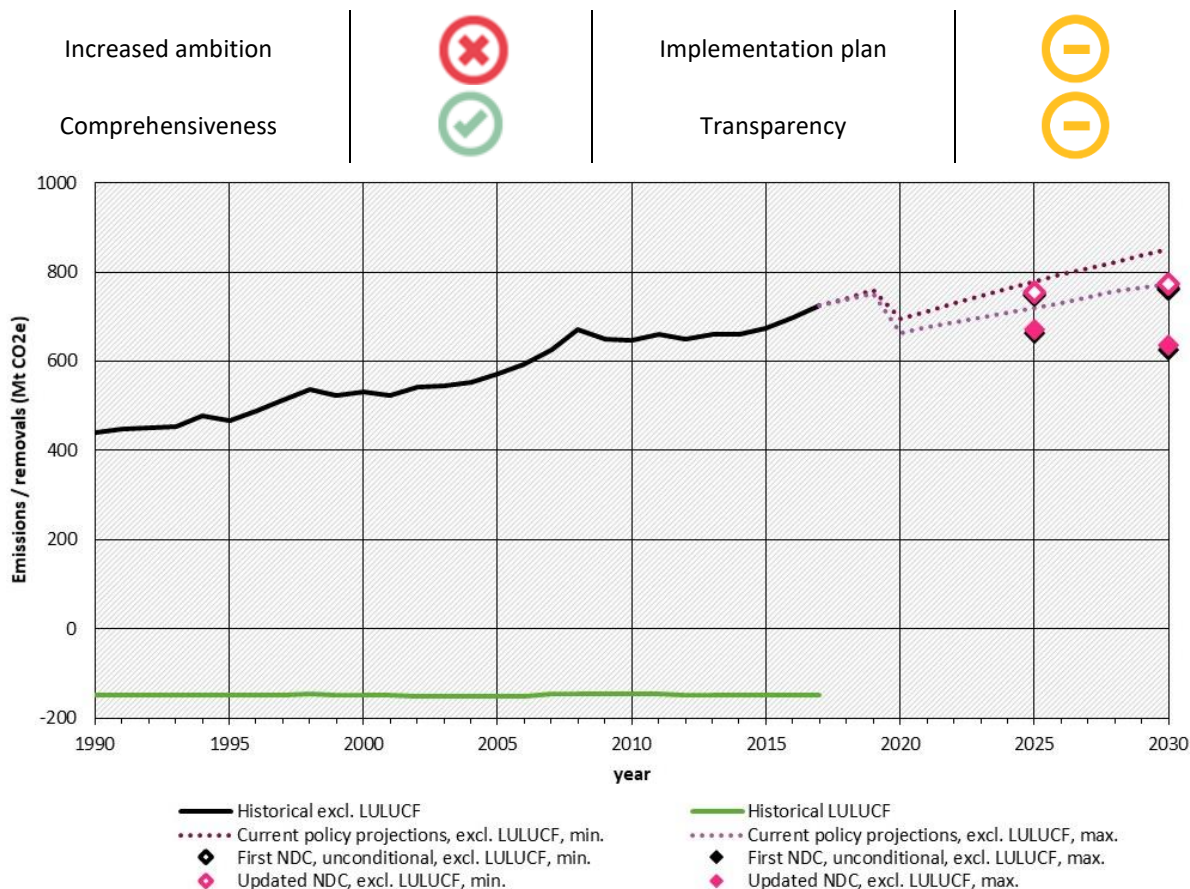
Mexico's updated NDC represents a decrease in mitigation ambition. Both the previous and updated NDC set the unconditional target to reduce GHG emissions by 22% below BAU levels by 2030 and the conditional target to reduce up to 36% below BAU levels by that same year. However, the updated NDC considers higher BAU emissions. Targeted emission levels are 11 MtCO_{2e} higher under the new NDC, as compared to the previous submission.

The updated NDC also presents a conditional GHG target to increase the envisaged emission reductions to 36% below BAU by 2030. In addition, the NDC provides the unconditional target to reduce black carbon by 51% below BAU by 2030, and the conditional target to increase these reductions to 70%. These targets are identical to those in the previous NDC submission.

Mexico's NDC targets and some of the policies to implement it are enshrined in the General Law on Climate Change (Ley General de Cambio Climático, LGCC), but the process and agreed policies are currently only partially implemented.

Mexico's updated NDC covers all sectors and greenhouse gases required under the Paris Agreement. It includes a mitigation and an adaptation component. The NDC provides the information to facilitate clarity, understanding and transparency, as laid out in decision 4/CMA.1. However, whereas the previous NDC laid down sectoral emission reduction targets, the updated NDC lacks this information.

Figure 14: Mexico: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020l, 2020m).

5.9.1 Scope

Table 60: Mexico: Scope

Element	First NDC	New NDC	Change
Mitigation	<p>The first NDC contains information on the conditional and unconditional mitigation targets, coverage, scope, baseline emissions and planning process. The NDC also outlines sectoral emissions under a BAU scenario and sectoral contributions to the NDC target.</p> <p>Mexico enshrined its 2016 NDC target in law through an amendment of the General Law on Climate Change in 2018.</p> <p>The first NDC refers to Mexico’s long-term target to reduce</p>	<p>The updated NDC includes information on the conditional and unconditional mitigation targets, coverage, scope, baseline emissions and planning processes. Unlike the first NDC, this new NDC provides neither a sectoral breakdown of 2030 BAU emissions, nor sector-specific targets.</p> <p>The new NDC also makes no reference to a long-term target.</p>	<p>We do not evaluate change between NDCs here, but rather in the following sections.</p>

Element	First NDC	New NDC	Change
	emissions by 50% by 2050, compared to 2000.		
Adaptation	Information on 21 actions to be taken in the period 2020-2030 across three areas (social sector; ecosystem-based adaptation; and strategic infrastructure and productive systems). These actions include to reach a zero deforestation rate by 2050 and to strengthen the adaptive capacity of at least half of the most vulnerable municipalities.	Information on 27 actions in 5 areas to be taken in the period 2020-2030. Specifically, new actions relate to ensuring a “resilient production systems and food security” and “protection of strategic infrastructure and tangible cultural heritage.” Further, the updated NDC identifies where mitigation co-benefits exist.	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	The NDC provides little information on finance needs. It states that Mexico could increase its unconditional target subject to “a global agreement addressing important topics including international carbon price, carbon border adjustments, technical cooperation, access to low-cost financial resources and technology transfer.” Further, under the heading “Capacity building, transfer of technology and finance for adaptation,” the NDC provides that Mexico needs “international support for the development of its own [adaptation] technologies.” However, it is not specified whether this support should come in the form of finance, technical assistance or capacity-building.	The new NDC refers to a “climate finance strategy”, which includes the participation of the national and international financial sector and which will help to direct financial resources to the economic sectors where those resources are most needed. Further, the NDC mentions that Mexico has “made progress in the implementation” of a number of economic instruments, including an emissions trading system, a carbon tax, and green bonds.	+
Technology transfer and capacity building	The NDC states that Mexico needs international support for technology transfer and innovation to increase its adaptive capacity.	The NDC states that technology transfer and technological assistance and capacity building are necessary to achieve the conditional NDC targets.	0

5.9.2 Mitigation ambition

Table 61: Mexico: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Unconditional commitment to reduce GHG emissions by 22% below BAU by 2030. Conditional commitments to reduce emissions by 36% below BAU by 2030.	Same as the first NDC. Unconditional commitment to reduce GHG emissions by 22% below BAU by 2030. Conditional commitments to reduce emissions by 36% below BAU by 2030.	0
Resulting emission level in 2030, excl. LULUCF	763 MtCO _{2e} ¹⁹	774 MtCO _{2e} ²⁰ (due to higher BAU)	(-)
Conditionality	The NDC includes a conditional target of reducing GHG emissions by 36% and black carbon emissions by 70% below BAU by 2030. These targets are subject to global agreement on topics such as international carbon price, carbon border adjustments, technical cooperation, access to low-cost financial resources and technology transfer.	The NDC includes a conditional target to increase GHG emission reductions to 36% and black carbon emission reductions to 70% below BAU by 2030 if the following conditions are met: 1) countries with the highest emissions and greatest economic development take the lead in achieving greater ambition; 2) Mexico obtains additional financial resources to implement reduction measures at scale; 3) international cooperation facilitates the transfer of available technology; and 4) progress is made to establish an international carbon price and adjustments on tariffs for carbon contents.	We do not provide an assessment of the change between NDCs for this element
Need for new policies to meet the target	Yes. In addition to the General Climate Action Law of 2012 and the National Strategy on Climate Change of 2013, there are ongoing processes for a new set of standards and regulations to achieve the NDC.	Yes. The Special Climate Change Programme and the National Development Plan end in 2024. Mexico will prepare an NDC implementation roadmap to provide more details on the mitigation actions it will undertake	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	Emissions and removals from the LULUCF sector are included in the target. The sector is projected as a source of emissions in the 2030 BAU scenario, but as a small sink in the target.	Emissions and removals from the LULUCF sector are included in the target. The updated NDC provides no details on the contribution of the LULUCF sector to the 2030 target.	0

¹⁹ The NDC provides the level of GHG emissions in AR5 GWP values. We converted these values to AR4 GWP.

²⁰ Idem.

Element	First NDC	New NDC	Change
		The NDC includes a zero-net deforestation rate.	
Net-zero target	The NDC includes no net-zero target but refers to Mexico's long-term target of a 50% emissions reduction below 2000 levels by 2050.	The NDC refers to its Mid-Century Strategy, which sets the target of a 50% emissions reduction below 2000 levels by 2050. However, the NDC does not explicitly reiterate this goal.	(-)
Alignment of NDC with long-term target/net-zero target	Mexico claims that its first NDC is consistent with the country's pathway to reduce GHG emissions by 50% by 2050 compared to 2000 levels. No further explanation is provided.	The second NDC does not explicitly refer to the long-term goal of reducing emissions by 50% below 2000 levels by 2050. Accordingly, the NDC does not claim that the 2030 and 2050 targets are aligned.	(-)
Intended use of Article 6	Mexico will reach its unconditional NDC regardless of international market-based mechanisms (including Article 6). To achieve its conditional target of reducing emissions by 36% below BAU, Mexico needs "fully functional bilateral, regional and international market mechanisms."	The NDC expresses Mexico's interest in participating in international carbon markets under Article 6 of the Paris Agreement. The Mexican governments expects that these transfers will help increase the NDC target from 22% to 36% GHG emission reductions below BAU.	0
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

Whereas Mexico's first NDC referred to the country's long-term target of reducing GHG emissions by 50% by 2050 compared to 2000, the updated NDC target does not mention a long-term target. As global CO₂ emissions must reach net-zero around mid-century to stand a reasonable chance of limiting global warming to 1.5°C above pre-industrial levels, a 50% reduction target would not be sufficient.

5.9.3 Mitigation completeness

Table 62: Mexico: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	► Energy	► Energy	0

Element	First NDC	New NDC	Change
	<ul style="list-style-type: none"> ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Forestry, and other land use ▶ Waste 	<ul style="list-style-type: none"> ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Forestry, and other land use ▶ Waste 	
Gas coverage	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ <p>Other climate forcers:</p> <ul style="list-style-type: none"> ▶ Black carbon 	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ <p>Other climate forcers:</p> <ul style="list-style-type: none"> ▶ Black carbon 	0

5.9.4 Mitigation implementation

Table 63: Mexico: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The NDC provides sectoral emissions under the 2030 BAU scenario as well as the sectoral contributions to the 2030 target.	The NDC provides neither a sectoral breakdown of 2030 BAU emissions, nor sector-specific targets.	(-)
NDC preparation process	The NDC states that multiple stakeholders were consulted during the preparation of the NDC. No further information is provided.	The NDC provides a description of the preparation process. Several working groups with representatives from the public, private and social sectors worked on specific studies for each sector of the economy. Mexico also held a citizen consultation process at the national level and involved citizens, specialists, private sector, federal and subnational public administration departments and youth associations.	+
Clarity of national and sectoral implementation plans	Not included in the NDC.	The NDC outlines identified mitigation opportunities in all sectors. Mexico will develop an NDC implementation roadmap, which will lay out the details of mitigation actions.	+
National climate law(s)	The General Law on Climate Change was amended in 2018 to include the unconditional NDC	The updated NDC provides the same emission reduction goal as the previous NDC. This goal was	0

Element	First NDC	New NDC	Change
	target (i.e. reduce GHG by 22% below BAU levels by 2030).	already enshrined in the General Law on Climate Change.	

The updated NDC provides no sectoral emission reduction targets. In its previous submission, the Mexican government expected the LULUCF sector to be a source of emissions in 2030 in the BAU scenario, but to contribute to about a fifth of the reductions needed to achieve the unconditional target. Mexico will present an implementation roadmap, including details of mitigation actions, in forthcoming Biennial Update Reports.

The General Law on Climate Change of 2012 was amended in 2018 to include the unconditional target to reduce emissions by 22% below the baseline by 2030 (Congreso de la Union, 2018). Although the General Law provides the basis for developing and implementing climate policies to achieve the 2030 NDC target, implementation of mitigation policies is not yet ensured. The Law does not provide clear mandates or implementation guidelines for responsible institutions. As a result, the government has not prepared a sufficient number of specific goals. The government has also not yet allocated sufficient public resources to climate mitigation measures (Averchenkova and Guzman Luna, 2018).

5.9.5 Transparency

Table 64: Mexico: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC includes the BAU reference value, as well as BAU emissions in all economic sectors by 2030. Further, the NDC outlines sectoral mitigation targets and sectoral breakdown for a target achievement scenario. The BAU scenario is based on economic growth in the absence of climate change policies. The NDC gives no information as to what sources the Mexican government used to determine the baseline.	The NDC includes the BAU reference value, as well as BAU emissions in all economic sectors by 2030. No sectoral breakdown is provided. The BAU scenario is based on economic growth in the absence of climate change policies. While the NDC outlines which sources the Mexican government used to estimate BAU emissions, the NDC does not provide specific information on the assumptions the government made.	(-)
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1; and provides information for each of the elements.	+
Accounting modalities	The NDC provides information on the metric applied (GWPs of AR5) and methodologies for estimating	The NDC provides that the methodological approach employed to estimate GHG	o

Element	First NDC	New NDC	Change
	emissions (i.e. IPCC guidelines, national statistics, sector activity and economic forecasts). Specifics, however, are lacking. The NDC included a graph with a target trajectory, with the peak in 2026, but it was not part of the official target.	emissions is established by the IPCC 2006. It lists the sources on which the Mexican government based its assumptions. The NDC does not specify the expected contribution of the LULUCF sector to the 2030 target, nor the relative importance of transfers under Article 6 in achieving the conditional target. Subsequent Biennial Update Reports will update the methodology, activity data and emission factors. The NDC includes only a single year target (and no target trajectory), which would make it difficult to apply Article 6.	
Explanation why the target is a fair contribution towards the global goal	The NDC states that Mexico's contribution is fair because Mexico is a developing country whose emissions account for 1.4% of the global total. Further, the NDC includes an unconditional target and aims for a peak in emissions in the commitment period.	The updated NDC states that the 2030 target is a fair contribution. given the challenges of an economic crisis and the country's level of development. It cites its contribution to global emissions (1.3%) and its per capita emissions of 3.7 tons compared to the global average of 5 tons per capita.	0

The updated NDC presents higher BAU emissions than the previous NDC but provides no explanation as to why this is the case. In both NDCs, the baseline reflects a BAU scenario in the absence of climate policies. However, Mexico has implemented some climate policies. Current policy projections show that Mexico's emissions rise to 765-823 MtCO₂e by 2030 – at least 100 MtCO₂e emissions lower than the Mexican government assumes in its baseline (Climate Action Tracker, 2020). Further, the COVID-19 pandemic has led to a decrease in emissions in 2020 and will likely result in lower emission levels until 2030 than previously anticipated. As a result, Mexico's previous NDC target is in reach without implementing any new policies (Climate Action Tracker, 2020). However, the Mexican government has not considered the pandemic's impact on its BAU scenario in the preparation of its updated NDC.

5.10 Nepal

Nepal submitted its first NDC in October 2016 (Government of Nepal, 2016) and its second NDC in December 2020 (Government of Nepal, 2020).

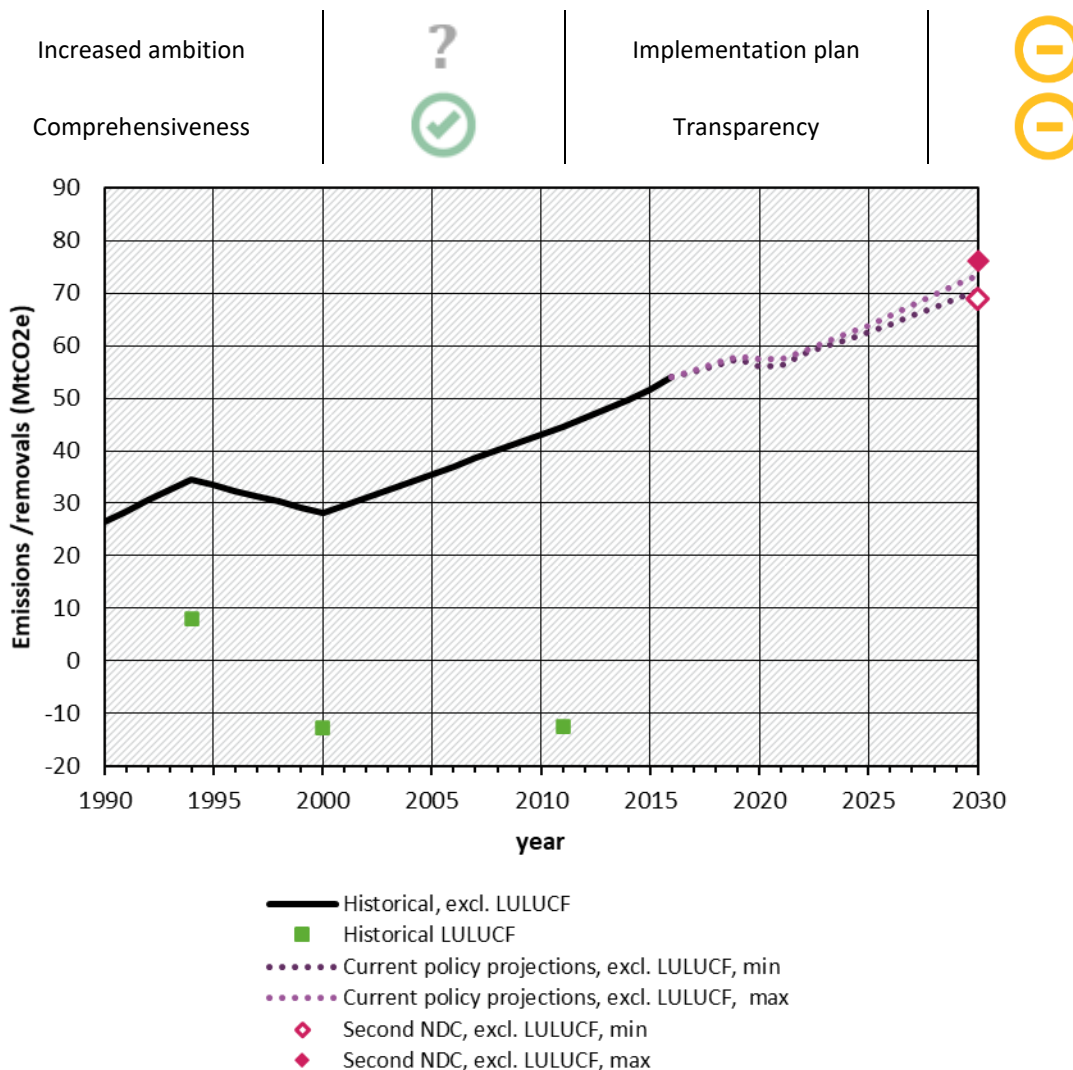
Nepal’s second NDC includes sectoral, activity-based targets for 2030. However, the first NDC also includes targets, but relating to different mitigation measures and different target years (2020 and 2050). Hence, there is not enough information available to judge whether the second NDC constitutes an increase in ambition compared to the first NDC.

The NDC covers the main greenhouse gases and sectors, and mitigation actions in these sectors, hence it can be considered comprehensive.

Nepal presents some detailed sectoral mitigation plans in its updated NDC and describes that a more comprehensive implementation plan is still under development; the targets and implementation measures are not yet included in national legislation.

The NDC is transparent in many aspects, but lacks some levels of detail regarding the sectoral, activity-based targets for a detailed assessment.

Figure 15: Nepal: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020, 2021).

5.10.1 Scope

Table 65: Nepal: Scope

Element	First NDC	New NDC	Change
Mitigation	Nepal's first NDC presents various mitigation actions including targets for key sectors, namely energy, forestry, transport, agriculture and waste. Some of these actions include target years, however, neither an implementation plan nor planning processes are mentioned in the NDC. It is not clear which GHGs are covered under the NDC. The NDC includes a few long-term (i.e. 2050) activity-based targets for the energy sector.	Nepal's new NDC presents activity-based targets for key sectors, and emission reduction projections for the transport and waste sector. The NDC covers the sectors energy, industrial processes and product use (IPPU), agriculture, forestry and other land-use (AFOLU) and waste. The activity-based target for the energy sector is partially unconditional; other targets of the NDC are conditional to international support. The NDC does not include an implementation plan but describes key elements of the forthcoming strategy. The NDC covers the GHGs CO ₂ , CH ₄ and N ₂ O. The NDC states that it was developed through an inclusive and participatory process, with a series of consultations at national and subnational levels. Nepal is in the process of formulating a long-term low GHG emissions strategy, which is expected to be final by the end of 2021. This strategy will include a net-zero target for 2050.	We do not evaluate change between NDCs here, but rather in the following sections.
Adaptation	The NDC presents four policy targets, which are described in plans and frameworks to enhance Nepalese climate change adaptation and resilience. The four targets mainly relate to knowledge development and monitoring of climate change impact. The future adaptation needs will be described in a National Adaptation Plan (NAP) and local implementation plans are given in the National Framework on Local Adaptation Plan for Action (LAPA).	The NDC presents 14 key adaptation policy priorities, covering eight thematic and four cross-cutting areas. The various policy priorities cover: <ul style="list-style-type: none"> • Gender equality, social inclusion and diversity; • Planning and updating processes; • Enhancing climate and weather information, monitoring and warning systems; • Improving water supply • Implementing circular economy mechanisms and resource efficiency. Furthermore, the NDC notes that Nepal is in the process of developing its National Adaptation	+

Element	First NDC	New NDC	Change
		Plan (NAP) and the NDC highlights several other relevant policy plans and frameworks. The NAP will be published by end of 2021.	
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	The NDC describes the need for financial support to realise the targets. It lists priority areas for which bilateral and multilateral grant support would be required.	The cost of achieving Nepal's conditional NDC mitigation targets is estimated to be USD 25 billion. The cost of the unconditional targets is USD 3.4 billion. The NDC's conditional (sectoral) targets depend on international support and financing; Nepal anticipates global financial support to realise the NDC. The forthcoming NDC implementation plan will include alignment of finance with the NDC targets. The NDC notes that a financing and investment framework will be developed, to ensure efficient access to climate funds.	+
Technology transfer and capacity building	The NDC states that Nepal will need capacity building support from development partners to realise its targets.	To realise the NDC's conditional target, Nepal needs international support on technology transfer and/or capacity building. The NDC also indicates that Nepal would like to update its future GHG inventories with wider sectoral coverage and requires technical support to do so.	+

5.10.2 Mitigation ambition

Table 66: Nepal: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Nepal's first NDC presents various mitigation actions including targets for key sectors. They cover the following sectors and are given in more detail in Table 68 below: Energy, agriculture and livestock, forests, industry, human settlements and waste, transport, commercial sectors.	Activity-based targets and policy targets in key sectors, including emissions reduction in some sectors. The activity-based targets cover the following sectors and are given in more detail in Table 68 below: Energy (energy generation, transport, residential cooking and biogas), AFOLU, Waste.	0

Element	First NDC	New NDC	Change
Resulting emission level in 2030, excl. LULUCF	The NDC does not provide enough information to estimate the resulting emission level in 2030.	69 – 76 MtCO ₂ e ²¹ .	?
Conditionality	Not available.	The NDC describes that the vast majority of the targets are conditional upon international support (e.g., financial and technical). The target of realising an additional 5 GW of renewable energy generation is unconditional.	?
Need for new policies to meet the target	The NDC does not provide sufficient information to quantify the targets, so a comparison with national policies is not possible.	The CAT estimated that Nepal's current policies will lead to emission reductions of 70.4 – 73.4 MtCO ₂ e in 2030. Hence, current policies are sufficient to meet the estimated GHG emission levels in 2030 under the NDC sectoral activity-based targets. However, there is insufficient data available to assess whether these sectoral targets will be realised under current policies – only an assessment of the two resulting GHG emission levels is possible.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The NDC treats the LULUCF sector separately and provides two sector-specific targets regarding the share of land area to remain covered with forest (40%) and the reduction of deforestation and forest degradation. The latter is projected to reduce Nepal's GHG emissions by 14 MtCO ₂ e by 2020.	The NDC treats the LULUCF sector separately and includes two sector-specific targets for 2030 mainly in terms of targeted forest coverage (45% of land area) and sustainable forest management of shares of specified areas.	0
Net-zero target	The NDC does not include a net zero target, but it includes a few long-term (i.e. 2050) activity-based targets for the energy sector.	The NDC states that Nepal is in the process of formulating a long-term low GHG emissions strategy, which is expected to be final by the end of 2021. This strategy will include a net-zero target for 2050. None of the presented activity-based targets are for 2050.	0
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	0

²¹ This range is taken from CAT Nepal assessment (Climate Action Tracker, 2021a). For this range, a selection of Nepal's NDC targets was quantified. For the upper end of the range, the targets for the transport, residential and waste sector were quantified. For the lower end of the range, the second target for the energy generation sector (15% of the total energy demand to be supplied with clean energy) and the waste sector were quantified. Nepal's NDC does not provide a BAU. The CAT has estimated the resulting emissions level in 2030 by subtracting reductions from the aforementioned sectors from their current policy projection.

Element	First NDC	New NDC	Change
Intended use of Article 6	The NDC includes some references to selling carbon credits, available after sustainable forest management and renewable electricity generation.	The NDC states that Nepal may explore potential markets that allow higher mitigation ambition, while promoting sustainable development and environmental integrity.	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

5.10.3 Mitigation completeness

Table 67: Nepal: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	0
Gas coverage	Not specified in the NDC.	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	+

5.10.4 Mitigation implementation

Table 68: Nepal: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	<p>A list of sectoral targets is provided:</p> <ul style="list-style-type: none"> ▶ By 2050, 80% of electrification based on renewable energy. Reduce dependency on fossil fuels by 50%. 	<p>Energy generation:</p> <p>1. By 2030, expand clean energy generation from approximately 1,400 MW to 15,000 MW, of which 5-10% will be generated from mini and micro-hydro power, solar, wind and bioenergy. Of this, 5,000 MW will be built using national</p>	+

Element	First NDC	New NDC	Change
	<ul style="list-style-type: none"> ▶ Achieve 25 MW of installed mini and micro hydro power capacity. Achieve 600,000 solar home systems. Achieve 1,500 institutional solar power systems. Achieve 4,000 improved water mills. Achieve 475,000 improved cooking stoves. Achieve 130,000 biogas household systems and 1,000 institutional and 200 community biogas plants. ▶ By 2020, expand energy mix with 20% with a focus on renewables and diversify energy consumption patterns to more industrial and commercial sectors. ▶ By 2020, increase share of EVs up to 20% compared to the 2010 share. ▶ By 2050, decrease dependency on fossil fuels in the transport sector by 50%. ▶ By 2040, develop electrical (hydro-powered) rail network. ▶ Maintain 40% of total land area under forest cover. ▶ Pilot a subnational REDD+ project to reduce 14 MtCO₂e by 2020. 	<p>resources (the unconditional target).</p> <p>2. By 2030, ensure 15% of the total energy demand is supplied from clean energy sources.</p> <p>Transport:</p> <p>1. By 2030, increase sales of e-vehicles to cover 90% of all private passenger vehicle sales, including two-wheelers and 60% of all four-wheelers public passenger vehicle sales.</p> <p>2. By 2030, develop 200 km of the electric rail network to support public commuting and mass transportation of goods.</p> <p>Residential sector:</p> <p>1. By 2030, ensure 25% of households use electric stoves as their primary mode of cooking.</p> <p>2. By 2025, install 500,000 improved cookstoves, specifically in rural areas.</p> <p>3. By 2025, install an additional 200,000 household biogas plants and 500 large scale biogas plants.</p> <p>Agriculture, Forestry and Other Land Use (AFOLU):</p> <p>1. By 2030, maintain 45% of the total area of the country under forest cover (including other wooded land limited to less than 4%).</p> <p>2. By 2030, manage 50% of Tarai and Inner Tarai forests and 25% of middle hills and mountain forests sustainably.</p> <p>Waste:</p> <p>By 2025, 380 million liters/day of wastewater will be treated before being discharged, and 60,000 cubic meters/year of fecal sludge will be managed.</p>	
NDC preparation process	The NDC states that it was prepared through a broad-based stakeholder consultation processes.	The NDC states that it was developed through an inclusive and participatory process, with a series of consultations at national and provincial levels. Nepal used a “leave no one behind”-approach. The policies and targets were	+

Element	First NDC	New NDC	Change
		developed by a group of experts, and were then verified through consultations with ministries, experts, local peoples, indigenous peoples and youth. The revised targets were then used as input for Low Emissions Analysis Platform (LEAP) models and further revised at the ministry level.	
Clarity of national and sectoral implementation plans	The clarity of implementation plans of the NDC’s activity-based targets differs per target. The implementation plans related to mitigation targets lack detail.	The NDC presents detailed sectoral mitigation targets, including the related timeline of implementation. The NDC states that the targets are integrated in national budgets and that they are aligned with existing policies and plans. The NDC gives five key elements (Governance; Finance; Economic Efficiency and Cost Effectiveness; Equity and Inclusiveness; Monitoring, Reporting and Verification) that will guide the implementation processes. The NDC states that Nepal will prepare an implementation framework/roadmap/plan, to ensure that the targets will be achieved in a systematic manner. The NDC presents six key elements (capacity building; knowledge management; institutional mechanism; communication and coordination; finance; tools) of this forthcoming implementation framework.	+
National climate law(s)	The NDC describes Nepal’s Climate Change Policy, established in 2011, as a policy that drives decarbonisation in the country. It lists a few more sector-specific policies that are (in)directly linked to sectoral targets but does not state that the targets are enshrined in national law.	The NDC lists a variety of policies which are (in)directly linked to the activity-based sectoral targets but does not state that the targets are enshrined in national law.	0

5.10.5 Transparency

Table 69: Nepal: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	As the NDC includes activity-based sectoral targets with limited quantitative context, there is not sufficient information provided to estimate Nepal's resulting emissions level.	The NDC provides some quantitative context to a number of activity-based sectoral targets, including BAU emissions and the expected emissions reduction in 2030 that make it possible to do a rough estimate of Nepal's resulting emissions level. However, further details on how the BAU was estimated, the global warming potentials values used and more details on some sectoral targets are lacking.	+
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The NDC follows the guidance for NDCs as presented in Decision 4/CMA.1 but lacks some detail regarding the planning process and specifying assumptions on the construction of the BAU scenario and the emissions quantification of the sectoral activity-based targets.	+
Accounting modalities	Not included in the NDC.	The NDC states that it uses the 2006 IPCC guidelines for national GHG inventories and that two additional guidelines will be used for quality assurance (2000 IPCC good practice guidance, 2003 IPCC good practice guidelines for LULUCF). The NDC lacks detailed information to quantify the GHG emission reductions of the proposed activity-based sectoral targets without substantive assumptions.	+
Explanation why the target is a fair contribution towards the global goal	The NDC does not provide an explanation as to why Nepal's targets are a fair contribution to the global goal. The NDC however does describe Nepal's insignificant share of global GHG emissions and that the NDC will contribute to global efforts to reduce GHG emissions.	The NDC states that Nepal is a least developed country with an insignificant contribution to global GHG emissions. It also states that the targets reflect Nepal's commitment to the Paris Agreement goals. However, the NDC does not explicitly explain why the targets are fair or link the targets to the global goal.	o

5.11 Panama

Panama submitted its first NDC in April 2016 (Government of Panama, 2016) and an update of this NDC in December 2020 (Government of Panama, 2020).

The NDC includes a GHG target in the energy sector, which is the key source of emissions, and a forest cover target in the LULUCF sector, which is of special importance to Panama due to the abundance of forest areas. Additionally, Panama has formulated 29 policies and measures as targets for 10 other sectors or “priority areas”.

The impact of these policies and measures is not quantified. Additionally, information on the BAU scenario for the energy sector is incomplete and information on historic emissions is not available in the NDC. Hence, not enough information is available to judge whether the updated NDC constitutes an increase in ambition compared to the original NDC.

Some information on the regulatory framework for implementing the NDC is provided but lacks detail. In the Annex of the NDC, the targets are presented in tabular format including information to facilitate clarity, transparency and understanding of NDCs according to Decision 4/CMA.1. The updated NDC covers the energy and LULUCF sectors only. Nevertheless, it is more comprehensive than the first NDC as it covers more gases, is based on an updated emissions inventory and the mitigation impact of the two main targets in the energy and LULUCF sector is quantified. Panama has submitted an Adaptation Communication together with its NDC. Regarding financial support, the NDC makes some general statements that implementation of the NDC depends upon international support, but this is not further specified.

Figure 16: Panama: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Panama’s Second Biennial Update Report (Ministerio de Ambiente República de Panamá, 2021).

Scope

Table 70: Panama: Scope

Element	First NDC	New NDC	Change
Mitigation	The first NDC contains mitigation targets for the energy and the LULUCF sector for 2050. For the energy sector, an interim target for 2030 is indicated as well.	The updated NDC contains mitigation targets for the energy sector and LULUCF sector for 2050. For the energy sector, an interim target for 2030 is indicated as well. Additionally, commitments for 10 sectors and strategic areas are included in the NDC.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
Adaptation	Not included in the NDC.	Measures to enhance adaptation are referred to in general but no specific target is formulated. An Adaptation Communication is included in the Annex (B) of the NDC, including goals and strategies for each sector.	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	Not included in the NDC. However, the NDC highlights a donation to the GCF of USD 1 million and planned domestic funding of USD 250,000 for the operation of an international centre for the implementation of REDD+ activities (Spanish acronym ICIREDD).	It is stated that to implement the Energy Transition Agenda, which the commitment for the energy sector is based on, as well as for the implementation of the National Forest Restoration Programme, international support is needed. Additionally, financial needs and support received are outlined, but not quantified.	+
Technology transfer and capacity building	Not included in the NDC. However, the NDC refers to measures for national capacity building in the context of forest management.	The needs for capacity building and technology transfer are outlined but not quantified.	+

5.11.1 Mitigation ambition

Table 71: Panama: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	<p>Sector-specific non-GHG targets for the energy and the LULUCF sector:</p> <ul style="list-style-type: none"> ▶ Increase the installed capacity in the energy sector for electricity generation from renewable sources (wind, solar, biomass) by 30% by 2050 compared to 2014. This means a share of renewables of 15% in 2030 and of 30% in 2050. ▶ Increase the carbon absorption capacity by 10% compared to the baseline scenario by 2050 in the LULUCF sector. 	<p>Sector-specific GHG and non-GHG targets:</p> <ul style="list-style-type: none"> ▶ Reduce energy sector emissions by at least 11.5% by 2030 and at least 24% by 2050 compared to BAU, representing up to 10 MtCO₂e (cumulated) during 2022-2030 and 60 MtCO₂e (cumulated) during 2022-2050. ▶ Establish a National Climate Change Plan for the Energy sector with mitigation and adaptation components. 	+

Element	First NDC	New NDC	Change
		<ul style="list-style-type: none"> ▶ Forest restoration of 50,000 ha nationwide, which will contribute to the carbon absorption of approximately 2.6 million tons of CO₂e by the year 2050, representing an increase of 10% compared to the average of absorptions between 1994-2017. ▶ Develop and initiate the implementation of the National REDD+ Strategy; develop a national technical guide on climate change for forests. <p>Additionally, commitments/policies and measures are formulated for 10 sectors and strategic areas (integrated management of water basins; marine-coastal systems; biodiversity; sustainable agriculture, livestock and aquaculture; resilient human settlements; public health; sustainable infrastructure; circular economy; capacity building for determining loss and damage and enhancing MRV through a National Platform on Climate Transparency).</p>	
Resulting emission level in 2030, excl. LULUCF	The NDC does not provide enough information to estimate resulting emission level in 2030.	The NDC does not provide enough information to estimate resulting emission level in 2030. Quantified information for the energy sector is available, but no information on the emission level in other sectors.	?
Conditionality	Increase in carbon sequestration capacity by 80% compared to the reference scenario by 2050 conditional upon support.	Unclear. A general statement is made that the target for the LULUCF sector is conditional upon international support.	?
Need for new policies to meet the target	Some qualitative information is provided on current policies, but information on projections is not available.	The NDC does not include quantitative information on projections for current policies.	We do not provide an assessment of the change between NDCs for this element.

Element	First NDC	New NDC	Change
LULUCF and removals	Part of the target: Increase of carbon sequestration capacity by 10% compared to the baseline scenario by 2050.	Part of the target: Restoration of 50,000 ha (to absorb approx. 2.6 MtCO ₂ e by 2050), and restoration of 130,000 ha of degraded land by 2050, to the extent of the international support received.	?
Net-zero target	Not included in the NDC.	No explicit net-zero target is formulated but the NDC states that the long-term national target is to achieve carbon neutrality by 2050.	+
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	0
Intended use of Article 6	The NDC states that Panama plans to design a carbon market and will continue to participate in international emissions trading.	The NDC states that Panama intends to use the cooperation mechanisms under Article 6 of the Paris Agreement.	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

5.11.2 Mitigation completeness

Table 72: Panama: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ LULUCF 	<ul style="list-style-type: none"> ▶ Energy ▶ LULUCF <p>+ various non-quantified policies and measures in other sectors and “priority areas.”</p>	+
Gas coverage	Greenhouse gases: <ul style="list-style-type: none"> ▶ CO₂ 	Greenhouse gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	+

5.11.3 Mitigation implementation

Table 73: Panama: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	<p>The NDC consists of two sectoral targets:</p> <ul style="list-style-type: none"> ▶ Increase the installed capacity in the energy sector for electricity generation from renewable sources (wind, solar, biomass) by 30% by 2050 compared to 2014. This means a share of renewables of 15% in 2030 and of 30% in 2050. ▶ Increase the carbon absorption capacity by 10% compared to the baseline scenario by 2050 in the LULUCF sector. 	<p>The NDC consists of two sectoral targets:</p> <ul style="list-style-type: none"> ▶ Reduce energy sector emissions by at least 11.5% by 2030 and at least 24% by 2050 compared to BAU, representing up to 10 MtCO_{2e} during 2022-2030 and 60 MtCO_{2e} during 2022-2050. ▶ Establish a National Climate Change Plan for the Energy sector with mitigation and adaptation components. ▶ Forest restoration of 50,000 ha nationwide, which will contribute to the carbon absorption of approximately 2.6 MtCO_{2e} by the year 2050, representing an increase of 10% compared to the average of absorptions between 1994-2017. ▶ Develop and initiate the implementation of the National REDD+ Strategy; develop a national technical guide on climate change for forests. <p>Additionally, commitments/policies and measures are formulated for 10 sectors and strategic areas.</p>	+
NDC preparation process	<p>The NDC states that a citizen participation process was carried out.</p>	<p>The NDC states that a consultation process involving important sectoral institutions took place, led by the Environmental Ministry. A peer review process was carried out as well. Additionally, 9 interactive workshops with the broader public took place. The process of updating the NDC resulted from an update and enhancement of the national GHG</p>	+

Element	First NDC	New NDC	Change
		inventory, resulting in a time series of GHG for the energy and forestry sector. An Executive Decree of 2020 established the governance framework for the updating, submission, implementation, monitoring and reporting of the NDC. The process is described in the Annex (C).	
Clarity of national and sectoral implementation plans	<p>No detailed information is included.</p> <p>Law 8 of 25 March 2015 and National Energy Plan 2015-2050 are referred to which lay down measures for the energy sector; further regulatory framework for electricity generation is referred to which includes incentives for renewable electricity generation.</p> <p>In the LULUCF sector, collaboration agreements established by the alliance for restoring one million hectares of forest over a period of 20 years are referred to. The NDC states that a new regulatory framework for the LULUF sector is being prepared.</p>	<p>An overview of sectoral commitments is included in the Annex (A), providing information on relevant policies and responsibilities for the implementation. However, no quantitative information on the sectoral commitments or specific policies and measures is provided.</p> <p>The NDC states that the implementation plans for the energy sector is based on the Energy Transition Agenda and the National Energy Plan 2015-2050. Additionally, Panama commits to establish a Climate Change Plan for the energy sector.</p> <p>For the forestry sector, the National Forest Restoration Programme (PNRF), the National Forestry Development Plan, the Million Hectare Alliance and the Forestry Master Plan (currently developed) are being referred to. Administrative responsibilities for these instruments are briefly described. Under the PNRF, a monitoring system of hectares restored has been created.</p> <p>Additionally, the NDC refers to:</p> <ul style="list-style-type: none"> ▶ The National Strategic Plan “Panama 2030” (PEN 2030); ▶ The National Climate Strategy 2050; ▶ The National Climate Change Policy; ▶ The Executive Decree 100 (Dec 2020) i.e. creates the National Climate Transparency Platform 	+

Element	First NDC	New NDC	Change
		<p>(PNTC) for implementation of inventories and setting out institutional arrangements for updating, submission, implementation, monitoring and reporting of Panama's successive NDCs;</p> <ul style="list-style-type: none"> ▶ The Law 69 (2017) creating an incentives programme for forests; ▶ The National Forest Strategy 2018-2050; and ▶ The National Strategy for Reducing Emissions from Deforestation and Degradation (ENREDD+) (to be adopted). 	
National climate law(s)	Law 8 of 25 March 2015 includes a national strategy and initiatives to enhance adaptation and to promote the national transition to low-carbon economic development.	Law 8 of 25 March 2015, Executive Decree 100 (2020) i.e. creating the National Climate Transparency Platform (PNTC) for implementation of inventories and setting out institutional arrangements for updating, submission, implementation, monitoring and reporting of Panama's successive NDCs, Law 69 (2017) creating an incentives programme for forests.	+

5.11.4 Transparency

Table 74: Panama: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	<p>Information to estimate resulting emissions level of the target is missing, particularly:</p> <ul style="list-style-type: none"> ▶ Information on emissions of the energy sector; ▶ Information on the baseline scenario for the LULUCF sector. 	<p>Information to estimate resulting emissions level of the target is missing, particularly:</p> <ul style="list-style-type: none"> ▶ Information on emissions of the energy sector; ▶ Information on the baseline scenario for the energy sector; ▶ Quantification of other sectoral commitments. 	0

Element	First NDC	New NDC	Change
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	Tabular information is provided in the Annex, covering the planning process, assumptions and methods as required by decision 4/CMA.1.	+
Accounting modalities	Not included in the NDC. Information provided is not clear regarding Article 6; information on methodologies applied is not provided.	Information related to accounting modalities is included in the Annex (IPCC guidelines, GWPs, gases included, some information on establishment of BAU scenario, Article 6). However, it is not fully transparent how the BAU scenario has been established.	+
Explanation why the target is a fair contribution towards the global goal	It is stated that taken into consideration the historical GHG emissions of Panama, the national efforts reflected in the NDC are considered to be fair and ambitious.	The NDC states that it is fair and ambitious because it focuses on the sectors responsible for the largest share of emissions in Panama, because the absorption figures were clarified and because additional commitments in 10 sectors have been included.	+

5.12 Republic of Korea

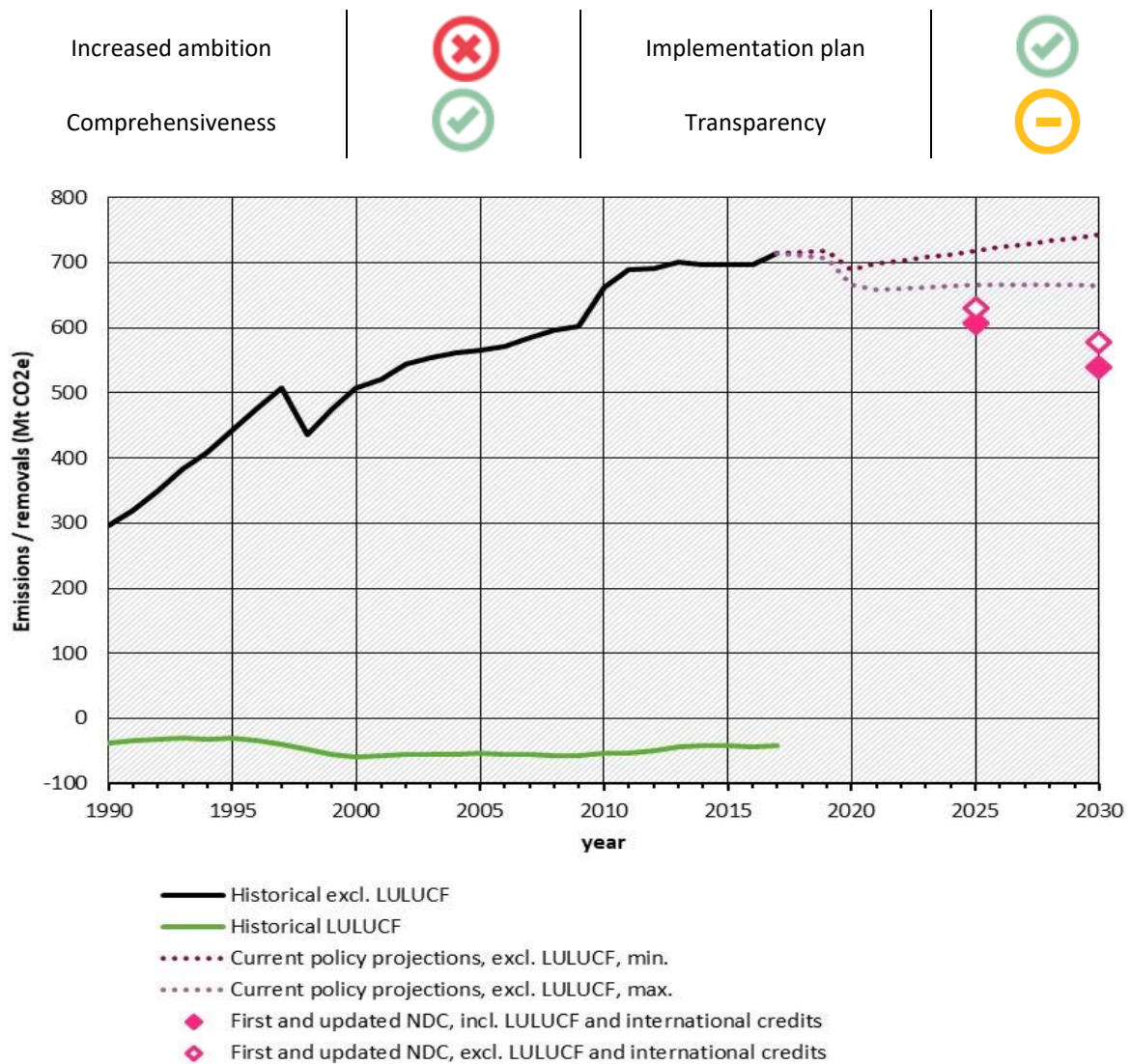
The Republic of Korea's INDC submitted in June 2015 (Government of the Republic of Korea, 2015) became its first NDC in November 2016, after the Republic of Korea ratified the Paris Agreement. The Republic of Korea submitted an updated NDC in December 2020 (Government of the Republic of Korea, 2020).

The Republic of Korea has improved the formulation of its NDC target from an emissions reduction from business-as-usual to an absolute emissions limit in 2030. However, after comparing both targets in terms of emissions level in 2030 (both as total greenhouse emissions incl. LULUCF, due to data availability), it becomes clear that the updated target is not more ambitious. Both previous and updated NDC targets translate to an emissions level of 540 MtCO_{2e} (Climate Action Tracker, 2020p). The government states that it will “further raise its ambition level” for the 2030 mitigation target and communicate any NDC updates “at the earliest possible time before 2025” (Government of the Republic of Korea, 2020). In May 2021, president Moon Jae-in announced that the government plans to “raise its national greenhouse gas reductions targets for 2030” and present it at COP26, which is planned for November 2021 (Hyun-woo, 2021a).

The updated NDC is comprehensive and follows the transparency guidance – although the NDC is not clear on what share of the target will be achieved through international offset credits. In 2018 the Republic of Korea's government had increased the domestic share of its 37% below BAU target. The updated NDC states that the Republic of Korea has increased its share of domestic reductions, but it is unclear if this refers to the change made in 2018. The targeted emission levels for 2030 are enshrined in national law, which helps to ensure implementation.

After submission of the updated NDC, Korea adopted a net zero carbon target for 2050 (Republic of Korea, 2020a).

Figure 17: Republic of Korea: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020p, 2020q).

5.12.1 Scope

Table 75: Republic of Korea: Scope

Element	First NDC	New NDC	Change
Mitigation	The first NDC provides information on the 2030 mitigation target, baseline emissions, scope, coverage and planning processes. The NDC does not specify what share of the mitigation target is to come from international credits and the LULUCF sector. This information is available in the 2030 Roadmap, which was released at a	The new NDC provides information on the 2030 mitigation target, scope, coverage and planning processes. Like in the previous NDC, there is no detailed information on the relative importance of international credits and the LULUCF sector in emission reductions. The NDC rerefers to the Republic of Korea’s goal of carbon neutrality by 2050.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
	later stage (Ministry of Environment, 2018). The NDC does not include any long-term or net-zero goal.		
Adaptation	<p>The first NDC refers to the National Climate Change Action Plan, which was developed in 2010 and implemented at the time of the first NDC submission. The NDC mentions that the Republic of Korea is developing guidance and tools to support the assessment of vulnerability and risks. Further, the NDC includes five broad strategic actions:</p> <ul style="list-style-type: none"> ▶ Strengthening infrastructure for climate change monitoring, forecasting and analysis; ▶ Developing a management system for disaster prevention and stable water supply; ▶ Developing a climate-resilient ecosystem; ▶ Making a systemic transition to a climate-resilient social and economic structure; and ▶ Enhancing the system for the management of negative impacts of climate change on health. 	<p>The new NDC does not list any strategic adaptation actions. It does outline what adaptation policies and assessment reports have been developed in the past decade. These include <i>the 3rd National Climate Change Adaptation Plan for 2021-2025</i>. Further, the Republic of Korea's government has provided support to public institutions that own social infrastructure and for climate-vulnerable businesses since 2016.</p>	0
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	Not included in the NDC.	Not included in the NDC.	0
Technology transfer and capacity building	Not included in the NDC.	The NDC states that the Republic of Korea has supported developing countries' capacity-building for adaptation but provides no further information.	+

5.12.2 Mitigation ambition

Table 76: Republic of Korea: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	To reduce greenhouse gas emissions by 37% from business as usual (BAU, 850.6 MtCO _{2e} ²²) level by 2030 across all economic sectors.	To reduce total national greenhouse gas emissions by 24.4% below 2017 levels (709.1 MtCO _{2e} ²³) by 2030. Formulation moved from "below BAU" target to absolute target.	+
Resulting emission level in 2030, excl. LULUCF	539 MtCO _{2e} (including the contribution of LULUCF and international credits). ²⁴ The Republic of Korea does not report on the exact contribution of the LULUCF sector to its 2030 target. According to the 2030 Roadmap, international credits and LULUCF will jointly reduce emissions by 4.5% below BAU levels (Ministry of Environment, 2018). If these reductions are excluded, the resulting emission levels in 2030 are 578 MtCO _{2e} .	540 MtCO _{2e} (including the contribution of LULUCF and international credits). ²⁵ The NDC states that the Republic of Korea will increase the domestic share of emission reductions but fails to provide further details. If we assume the same share as in the 2030 Roadmap, the resulting emission levels in 2030 are 578 MtCO _{2e} .	○
Conditionality	The mitigation target is unconditional.	The mitigation target is unconditional.	○
Need for new policies to meet the target	Additional policies are needed. Pre-COVID current policy projections from CAT (Climate Action Tracker, 2018) show that emissions will fall in the range 720-735 MtCO _{2e} by 2030. The Republic of Korea's target (539 MtCO _{2e} incl. LULUCF and international contributions) falls below this range.	Additional policies are needed. Post-COVID current policy projections from CAT (Climate Action Tracker, 2020q) show that emissions will fall in the range 666-733 MtCO _{2e} by 2030. The Republic of Korea's target (540 MtCO _{2e} incl. LULUCF and international contributions) falls below this range.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The Republic of Korea's first NDC states that the government will take the decision on whether to include the LULUCF sector in its emission reduction target at a later stage.	The Republic of Korea's new NDC provides that the LULUCF sector is to contribute to the 2030 target but does not specify to what extent. As the new NDC refers to the 2030 Roadmap multiple times, we	○

²² The Republic of Korea uses SAR GWP values to report its historical emissions, BAU scenarios and NDC targets. To ease comparison with other countries' emission trajectories and NDCs, we converted the Republic of Korea's emissions data and target AR4 GWP values. 850.6 MtCO_{2e} in SAR GWP converts to 856 MtCO_{2e} in AR4 GWP values.

²³ 709 MtCO_{2e} in SAR GWP converts to 714 MtCO_{2e} in AR4 GWP values.

²⁴ Expressed in AR4 GWP values.

²⁵ Expressed in AR4 GWP values. Please note that the difference with the Republic of Korea's previous target is a result from converting the GWP values from SAR to AR4. Expressed in SAR GWP values, the Republic of Korea's previous and updated NDC target are both set at 536 MtCO_{2e}.

Element	First NDC	New NDC	Change
	In the 2030 Roadmap, which was revised in 2018, the government clarified that the domestic LULUCF sector and international credits combined are to realise 4.5% of the target by 2030 (Ministry of Environment, 2018).	assume that the contribution of the LULUCF sector to the NDC target as outlined in that policy document still applies: LULUCF and international credits combined will reduce emissions by 4.5% below BAU by 2030. This is a reduction of 24MtCO ₂ e by 2030.	
Net-zero target	The Republic of Korea's first NDC includes no long-term target.	The new NDC refers to the Republic of Korea's commitment to become carbon neutral by 2050. According to the country's long-term strategy, which was submitted in December 2020, all economic sectors and gases are covered by this target.	+
Alignment of NDC with long-term target/net-zero target	Not applicable.	The new NDC does not claim and/or explain whether the 2030 target is aligned with the long-term target. The Republic of Korea's government states it will "further raise its ambition level" for the 2030 NDC to "lay a more solid foundation for carbon neutrality by 2050." The government will communicate any updates "at the earliest possible time before 2025."	?
Intended use of Article 6	The first NDC provides that the Republic of Korea will "partly use carbon credits from international market mechanisms to achieve its 2030 mitigation target." This is the same provision as in the Republic of Korea's INDC, submitted in 2015. Shortly after, the government had communicated that the 37% below BAU target is to be achieved with 25.7% domestic reductions and 11.3% international credits (Republic of Korea Ministry of Environment, 2015). The government did not update the INDC to include this information before submitting the INDC as its first NDC in 2016. In 2018, the government revised the share of international offset credits in the 2030 Roadmap. In that document, the government stated that the 37% below BAU target is composed of domestic efforts of 32.5% and international credits and the LULUCF sector of	The new NDC provides that the Republic of Korea has increased its share of domestic reductions compared to its first NDC but provides no further details. We assume that the government refers to the change between the 11.5% reduction that it initially communicated and the 4.5% in the revised 2030 Roadmap. The new NDC refers to this Roadmap a number of times, including in section 4(a)(i) where it notes that the Korean government revised the roadmap in 2018 to reduce the share of overseas reductions.	o

Element	First NDC	New NDC	Change
	4.5% (Ministry of Environment, 2018).		
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

5.12.3 Mitigation completeness

Table 77: Republic of Korea: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<p>The first NDC covers the following sectors:</p> <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste <p>The NDC provided that a decision on whether to include land use, land use change, and forestry (LULUCF) will be made at a later stage.</p>	<p>The new NDC covers the following sectors:</p> <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change and forestry 	+
Gas coverage	<p>The first NDC covers the following gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ 	<p>The new NDC covers the same six gases as the first NDC:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ <p>Further, the new NDC states that NF₃ is currently not included due to the absence of data. However, the Republic of Korea will include NF₃ in its national GHG Inventory Report once activity data is collected.</p>	0

5.12.4 Mitigation implementation

Table 78: Republic of Korea: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The first NDC refers to sectoral mitigation targets that were announced in the 2014 National GHG Emissions Reduction Roadmap. However, the NDC provides no further information on sectoral targets.	The new NDC refers to the revised 2030 Roadmap, which includes sectoral targets. The NDC mentions two targets in specific: <ol style="list-style-type: none"> To increase the share of renewable energy up to 20% by 2030 and 30-35% by 2040. To deploy 3 million electric and 850,000 hybrid vehicles by 2030. 	+
NDC preparation process	According to the first NDC, the Republic of Korea established a “dedicated taskforce” including relevant ministries and chaired by the Prime Minister’s Office. Further, a joint working group of national research institutions undertook the technical analysis for the 2030 target. A group of experts put forward by various stakeholder groups, such as business and civil society, reviewed the results of this technical analysis. The Republic of Korea’s government also collected feedback through public hearings and a forum hosted by the national assembly.	The preparation process for the new NDC seems to be less inclusive. The new NDC describes that, after comments from civil society, the Republic of Korea’s government revised the 2030 Roadmap to increase the share of domestic reductions compared to international reductions; and to add GHG reduction pathways on a three-year basis. The new NDC is based on this Roadmap. Further, relevant ministries, including the Ministry of Environment, the Ministry of Trade, Industry and Energy and the Ministry of Foreign Affairs, engaged in preparatory consultations in 2019. The government decided to replace the previous target with an absolute emissions reduction target. This updated target was legislated in December 2019. Following the review by the Committee on Green Growth and the government, the Republic of Korea finalised its 2020 NDC update.	(-)
Clarity of national and sectoral implementation plans	The first NDC indicates that the Republic of Korea’s government will develop a detailed plan to implement the 2030 target once the target is finalised at the international level. This detailed plan will be developed in consultation with relevant stakeholders.	The new NDC provides detailed information on national and sectoral implementation plans. The NDC refers to various policy documents, such as the <i>2nd Basic Plan for Climate Change Response</i> , the Korean Emissions Trading Scheme and the Green New Deal. The NDC summarises what these policies provide for and how they	+

Element	First NDC	New NDC	Change
National climate law(s)	The NDC does not refer to national legislation. However, the government amended <i>The Enforcement Decree of the Framework Act on Low Carbon, Green Growth</i> to include the first NDC target in 2016.	will be used to achieve the 2030 target. The NDC does not provide any additional information. The updated NDC target is not yet enshrined in law. However, <i>The Enforcement Decree of the Framework Act on Low Carbon, Green Growth</i> includes the previous NDC target and stipulates that nationwide GHG emissions are to be reduced by 37% below the estimated greenhouse gas emissions in 2030 (Office for Government Policy Regulation, 2018).	0

5.12.5 Transparency

Table 79: Republic of Korea: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The first NDC provides 2030 BAU levels, so the targeted emission levels can easily be calculated. The NDC does not specify what share of the target is to be achieved through contributions of the LULUCF sector and international credits. However, this information is available in the 2030 Roadmap, which allows for a calculation of the domestic reduction target.	The new NDC provides both the targeted emission levels for 2030 and emission levels in 2017, which is the reference value for the new target. Although the NDC provides that the share of domestic reductions will increase as compared to the first NDC, no further information is provided. As with the first NDC, one needs to refer to the 2030 Roadmap to make this calculation.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1; and provides information for each of the elements.	+
Accounting modalities	The first NDC provides limited information on accounting modalities. The NDC describes the GWP values used (SAR) and inventory methodology. However, the NDC provides no information on the share of reductions to be delivered through international credits and LULUCF.	Generally, the new NDC clearly describes accounting modalities and gives more details than the previous NDC. The new NDC provides information on the type of target (single year), IPCC guidelines and GWP values (SAR). However, the NDC does not clearly describe what share of reductions	0

Element	First NDC	New NDC	Change
	<p>Two years after submitting its first NDC, the Republic of Korea specified that international credits and the LULUCF sector are to reduce BAU emissions by 4.5% by 2030 (Ministry of Environment, 2018).</p>	<p>is to be delivered through international credits (Article 6) and LULUCF.</p>	
<p>Explanation why the target is a fair contribution towards the global goal</p>	<p>The first NDC claims that the Republic of Korea's 2030 target is fair and ambitious. Despite the country's dependence on heavy industry and limited reduction potential, the Republic of Korea set a target that is in line with recommendations from IPCC's Fifth Assessment Report to reduce global GHG emissions by 40-70% by 2050, compared to 2010 levels.</p>	<p>The new NDC claims that the Republic of Korea's reduction target is fair and ambitious and makes an argument similar to the one in the first NDC. According to the Republic of Korea's government, the reduction potential is limited, and the country's economy relies on heavy industry. Further, the country started to industrialise in the 1970s and experienced continued GHG growth since the 1990s. However, the Republic of Korea's government expects that GHG emissions have peaked in 2018.</p>	<p>0</p>

5.13 Republic of Moldova

The Republic of Moldova's INDC submitted in September 2015 (Government of the Republic of Moldova, 2015) became its first NDC in June 2017, after it ratified the Paris Agreement. The Republic of Moldova submitted an updated NDC in March 2020 (Government of the Republic of Moldova, 2020).

The updated NDC contains a higher target value compared to the first NDC. The first NDC included an unconditional target range of emission reductions of 64-67% below 1990 levels by 2030 which is increased to 70% in the updated NDC. In addition, the conditional target was increased from a reduction of 78% below 1990 levels by 2030 in the first NDC to 88% in the updated NDC. After submitting the first NDC, the Republic of Moldova transitioned to the 2006 IPCC guidelines and to applying the Global Warming Potentials of the IPCC's Fourth Assessment Report, and performed respective recalculations for its inventory.

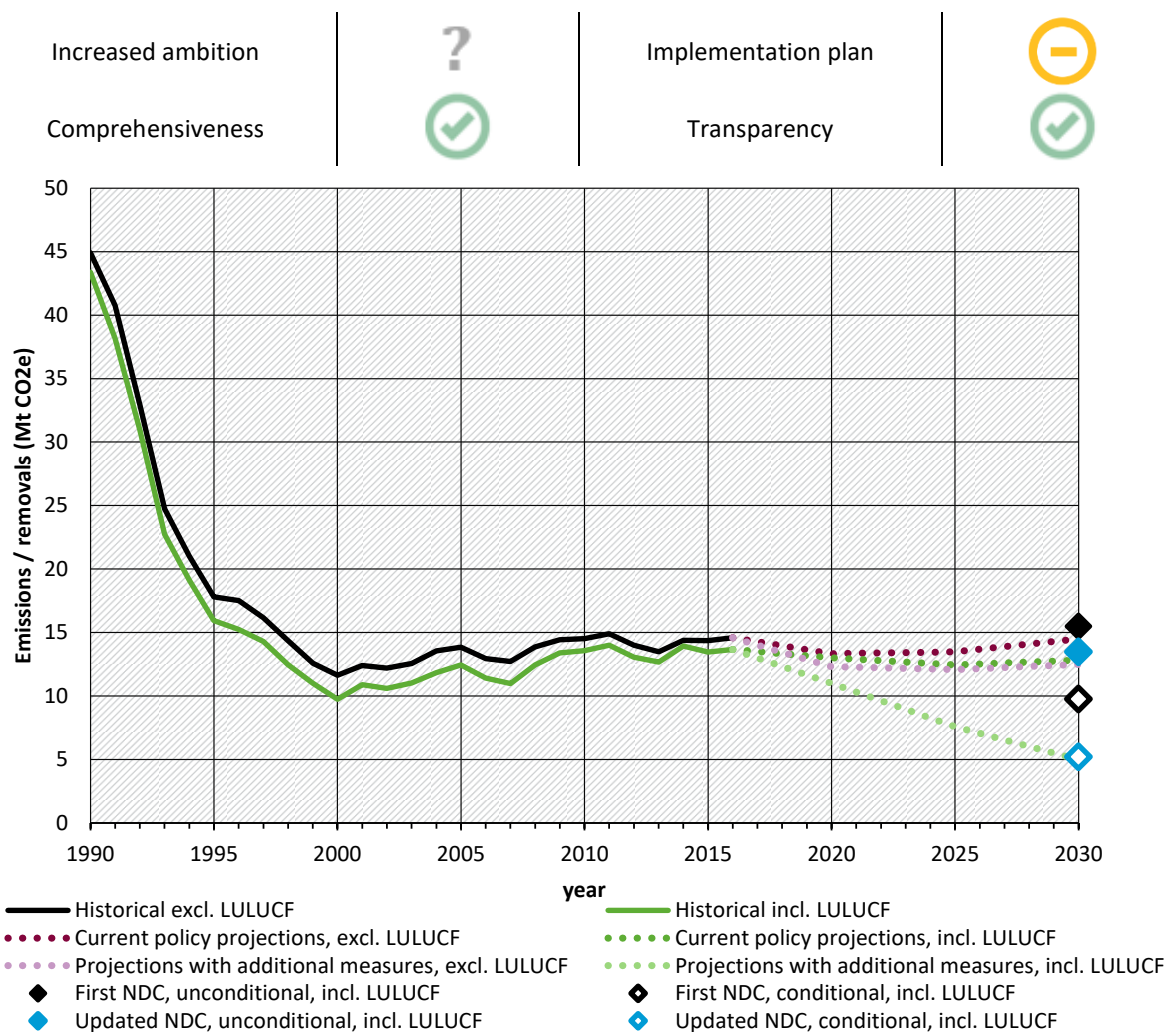
Hence, the inventory that provides the base year emissions for the updated NDC is based on different methodologies compared to the inventory used for the first NDC. Due to this methodological difference, it cannot be judged based on the information provided in the updated NDC whether the new NDC target constitutes an increase in ambition compared to the original NDC target.

The scope and coverage remain unchanged. Like the first NDC the updated NDC includes a comprehensive adaptation section while in the mitigation section all relevant sectors and greenhouse gases are included.

Like the first NDC, the updated version does not include any sectoral goals and only high-level information on the implementation processes is provided. Since the submission of the first NDC, the Republic of Moldova has adopted a Low Emission Development Strategy (LEDS) for the period up to 2030 which is the key policy instrument for implementation. It will be updated until 2022 to integrate the higher ambition level of the updated targets. Further, a LEDS for the period up to 2050 is currently under development. The updated NDC refers to the Association Agreement with the European Union and the country's membership in the Regional and European Energy Market whereby the Republic of Moldova committed to align its climate and energy policies to the ones of the EU. The updated NDC provides more information on the implementation of adaptation actions by including sectoral priorities and capacity building, investment, and support needs in concise tabular formats. However, targets and measures to implement the updated NDC are not yet included in national legislation.

As far as transparency is concerned, the first and updated NDC are very similar and include all information which is required for understanding the NDC in a concise way.

Figure 18: Republic of Moldova: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. Historic and projected greenhouse gas emissions as presented in the second biennial update report of the Republic of Moldova (Ministry of Agriculture, Regional Development and Environment, 2018; Republic of Moldova, 2018). Note that the inventory methodology was updated after the first NDC was communicated. Hence, the target values of the first NDC cannot be compared directly to the target values of the second NDC.

5.13.1 Scope

Table 80: Republic of Moldova: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC contains information on the unconditional and conditional mitigation targets, coverage, scope, baseline emissions, methodological assumptions and metrics used as well as the planning process. The NDC clarifies that a LEDS is scheduled to be approved by end of 2016.	The updated NDC contains information on the unconditional and conditional mitigation targets, coverage, scope, baseline emissions, methodological assumptions and metrics used as well as the planning process. Like the first NDC, the updated NDC makes a reference to the LEDS which was adopted in 2017 and will	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC	New NDC	Change
		be revised by 2022 to integrate the updated 2030 targets.	
Adaptation	The NDC contains an Annex with information on adaptation contained in the draft Fourth National Communication that was under development at that time as well as the Climate Change Adaptation Strategy and Action Plan up to 2020. The Climate Change Adaptation Strategy until 2020 contains a mid-term adaptation vision, goal and targets as well as sectoral actions currently undertaken.	The updated NDC includes a comprehensive adaptation component. It includes the country's adaptation priorities that were derived from the Climate Change Adaptation Strategy and Action Plan, the Fourth national Communication and the NAP. Further sectoral priority actions are outlined including their investment needs. The section on mitigation co-benefits from adaptation actions provides an overview of adaptation priorities for the agriculture, water, forestry, health, transport, and energy sectors, however, it does not quantify the mitigation co-benefits of the related actions.	+
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	The Annex to the NDC includes a summary of support required to implement current and mid-term adaptation actions. This includes a high-level overview of external support received.	For adaptation, the updated NDC contains more comprehensive information on sector specific needs for 2020-2025, using narrative and tabular formats.	+
Technology transfer and capacity building	Technology and capacity building needs are provided for the adaptation component in the Annex submitted with the NDC. They are outlined by sector.	For adaptation, the updated NDC contains more comprehensive information on cross-cutting capacity development sectoral needs, barriers, and gaps, using narrative and tabular formats.	+

5.13.2 Mitigation ambition

Table 81: Republic of Moldova: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Unconditional target of economy-wide absolute reduction of 64-67% by 2030 compared to 1990 levels. Conditional commitment to reduce emissions by up to 78% by 2030 below 1990 levels.	Unconditional target of economy-wide absolute reduction of 70% by 2030 compared to 1990 levels. Conditional commitment to reduce emissions by up to 88% by 2030 below 1990 levels.	0

Element	First NDC	New NDC	Change
Resulting emission level in 2030, excl. LULUCF	The NDC does not provide enough information to estimate the resulting emission level in 2030 excluding LULUCF.	Under the unconditional target, net GHG emissions would be reduced to 12.8 MtCO ₂ e (incl. LULUCF) in 2030. The resulting emission level excl. LULUCF is not available. The updated NDC is based on a new version of the inventory for which Moldova transitioned to the 2006 IPCC guidelines and performed recalculations for the base year. The resulting emission levels therefore cannot be compared between the first and updated NDC.	?
Conditionality	The conditional target is subject to a global agreement that includes access to low-cost financial resources, technology transfer and technical cooperation commensurate to the challenge of global climate change.	The conditional target is conditional to a global agreement that includes access to low-cost financial resources, technology transfer and technical cooperation commensurate to the challenge of global climate change. Financial support is envisaged from relevant donors, mostly from the GCF.	0
Need for new policies to meet the target	The targets require legislative acts for the NDC implementation period 2021-2030. The NDC references the development of the 2030 LE DS as a key policy document.	The implementation of the updated NDC requires an update of the 2030 LE DS.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is included, using a net-net accounting approach. Mitigation actions under the LULUCF sector are not included.	The LULUCF sector is included, using a net-net accounting approach. Mitigation actions under the LULUCF sector are not included.	0
Net-zero target	The NDC does not include a net-zero target. The Republic of Moldova did not communicate a long-term strategy to the UNFCCC.	The NDC does not include a net-zero target. The Republic of Moldova did not yet communicate a long-term strategy to the UNFCCC. The updated NDC states that the country is currently developing a 2050 LE DS that will outline the policies for accelerating GHG emission reductions by mid-century. It is expected to be adopted in 2022.	0

Element	First NDC	New NDC	Change
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	○
Intended use of Article 6	The NDC states that the unconditional NDC commitment will be met through domestic actions. Bilateral, regional and international market mechanisms may be used to achieve the conditional target. The use of markets is stated to be subject to robust systems that deliver real and verified emission reductions.	The updated NDC states that the unconditional commitment will be met through domestic actions, although assistance is needed for cost-effective implementation. Bilateral, regional and international market mechanisms may be used to achieve the conditional target. The use of markets is stated to be subject to robust systems that deliver real and verified emission reductions. The updated NDC states that in order to prevent double counting, a national MRV system was put in place in 2019 that also covers GHG emissions from international bunkers and CDM projects.	○
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in NDC.	Not included in NDC.	○
Consideration of ambition of subnational and non-state actors	Not included in NDC.	The adaptation component integrates a number of sub-national policies, actions, frameworks and plans.	+

5.13.3 Mitigation completeness

Table 82: Republic of Moldova: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ LULUCF ▶ Waste 	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ LULUCF ▶ Waste 	○
Gas coverage	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC 	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC 	○

Element	First NDC	New NDC	Change
	<ul style="list-style-type: none"> ▶ HFC ▶ SF₆ ▶ NF₃ 	<ul style="list-style-type: none"> ▶ HFC ▶ SF₆ ▶ NF₃ 	

5.13.4 Mitigation implementation

Table 83: Republic of Moldova: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in NDC.	Not included in NDC. The Republic of Moldova is a member of the Regional and European Energy Market and is obliged to align its national energy related legislation with the acquis of the European Energy Community Treaty. The updated NDC states that a key priority for 2019 was the adoption of 2030 goals in renewable energy, energy efficiency and reducing greenhouse gas emissions in the European Energy Community Treaty by transposing the recent EU clean energy package for its members.	0
NDC preparation process	Not included in NDC.	The process for the preparation of the updated NDC is briefly described. A draft version was posted online for comments and a national stakeholder consultation workshop was held including representatives of central and local public authorities, academia, civil society, and the private sector.	+
Clarity of national and sectoral implementation plans	The NDC mentions the 2030 LEDES as a key legislative act for the implementation of the NDC. The NDC states that the soon-to-be adopted LEDES is expected to be fully in line with the provisions of the Association Agreement between the European Union and the Republic of Moldova. The NDC does not include sectoral implementation plans.	The updated NDC states that its targets are planned to be achieved through the 2030 LEDES and the Action Plan for its implementation which will be updated to incorporate the more ambitious commitments. The NDC does not include sectoral implementation plans.	0
National climate law(s)	Not included in NDC.	Not included in NDC.	0

5.13.5 Transparency

Table 84: Republic of Moldova: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC provides total emissions in the base year (with and without LULUCF), noting that these data are provisional and will be defined on a biennial basis through inventory submissions.	The updated NDC provides total emissions in the base year. It explains that the difference in baseline values is due to a full transition to 2006 IPCC guidelines, the use of AR4 GWPs and application of higher tier methodologies, emission factors, activity data and inclusion of new emission and sink categories.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table that lists most elements from Annex I to decision 4/CMA.1. Some elements that are not relevant to the NDC are not included in the list.	+
Accounting modalities	The NDC describes the metrics and methodologies to be used. The NDC states that a net-net approach will be used for the LULUCF sector and a production approach for harvested wood products. The link to the national inventory is described.	The updated NDC describes the metrics and methodologies to be used. The updated NDC states that a net-net approach will be used for the LULUCF sector and a production approach for harvested wood products. The link to the national inventory is described.	0
Explanation why the target is a fair contribution towards the global goal	The NDC states that the national commitments are well in line with emission pathways towards 2050 that correspond to keeping global warming below 2°C. It states that responsibility in terms of past GHG emissions is considered low.	The updated NDC reiterates the previously communicated approach adding that its more ambitious targets show alignment with the ratchet up mechanism of the Paris Agreement.	0

5.14 Russian Federation

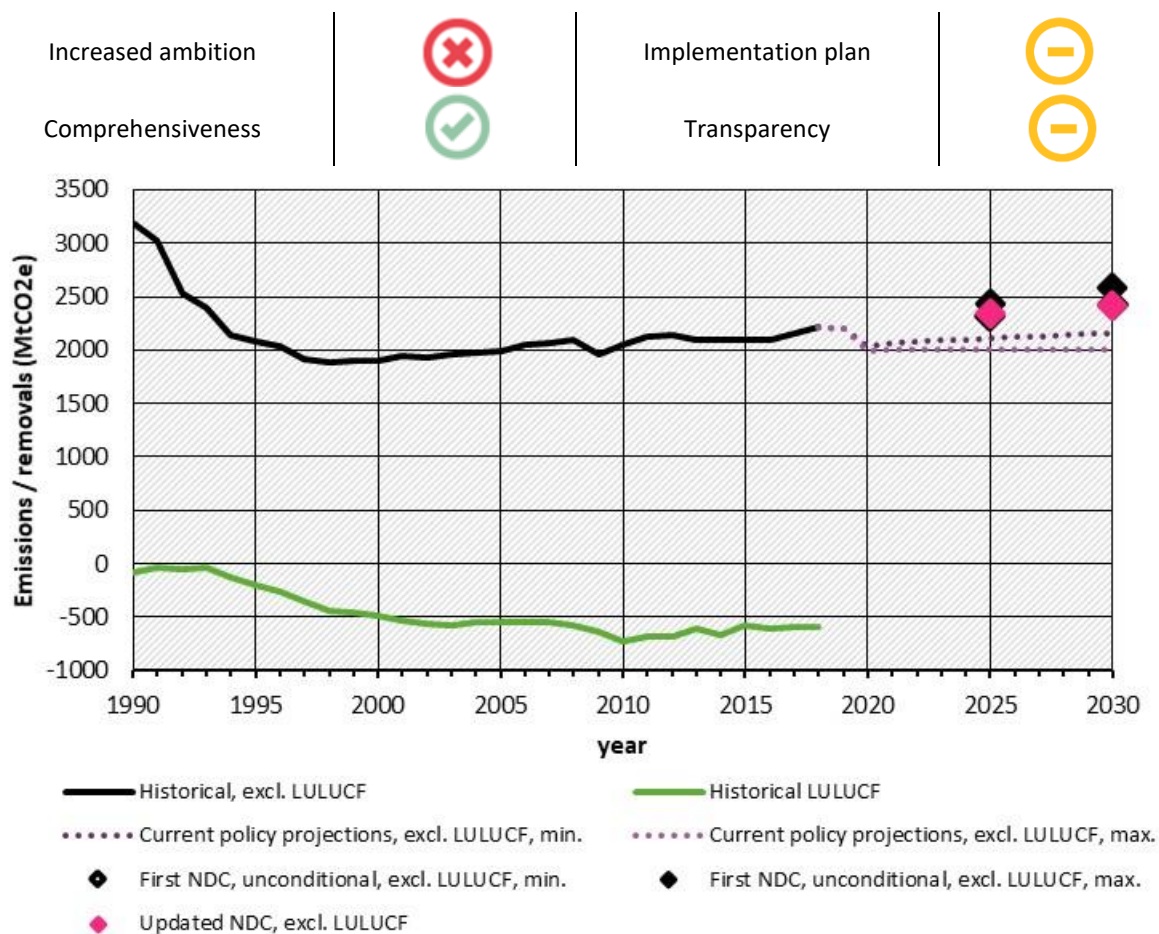
The Russian Federation submitted its INDC in April 2015 (Government of the Russian Federation, 2015) and its first NDC in November 2020 (Government of the Russian Federation, 2020).

The Russian Federation’s INDC and first NDC are similar in many aspects. While the first NDC has a slightly higher mitigation target than the INDC it can also be reached without additional policies. The INDC had a targeted emission level of 70-75% of 1990 levels, the first NDC has a targeted emission level of 70% of the 1990 GHG emission level – taking the lower range of its INDC target. GHG emissions are allowed to grow between most recent levels and 2030 under both targets. Projections of GHG emissions from currently implemented policies by 2030 are below the old and new target level (see

Figure 19).

Both NDCs cover all sectors and GHGs as required under the Paris Agreement. The Russian Federation addresses both mitigation and adaptation in its first NDC. The first NDC does not include sectoral implementation plans or details how to reach the NDC. Information to facilitate clarity, understanding and transparency is provided as laid out in decision 4/CMA.1, but is lacking detail in some instances, in particular on LULUCF.

Figure 19: Russian Federation: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020n, 2020o).

5.14.1 Scope

Table 85: Russian Federation: Scope

Element	INDC	First NDC	Change
Mitigation	The INDC includes information on the mitigation target, coverage, scope and baseline emissions. The INDC does not have information on implementation of the target. Some information on planning processes is provided. The INDC does not refer to a long-term strategy or net-zero target.	The first NDC includes information on the mitigation target, coverage, scope and baseline emissions. The NDC does not include information on implementation of the target. Some information on planning processes is provided. The NDC describes that the 2030 GHG emission reduction target is linked to a long-term mitigation strategy but does not provide further details.	We do not evaluate change between NDCs here, but rather in the following sections.
Adaptation	Not included in the INDC.	An adaptation communication is provided as a component of the NDC. The NDC addresses target areas for the implementation of the global goal on adaptation to climate change. The NDC describes that a new national climate change adaptation system is being formed, based on three principles: 1) differentiation, 2) staging and consistency and 3) integrity.	+
Economic diversification	Not included in the INDC.	Not included in the NDC.	0
Financing	Not included in the INDC.	Not included in the NDC.	0
Technology transfer and capacity building	Not included in the INDC.	The NDC describes the intended technical cooperation in the field of climate, environmental protection, resource and energy conservation with various developing countries. It describes technological projects including nuclear energy in 12 countries and scientific and technical cooperation with developing countries on improving the energy efficiency of buildings, resource conservation and the use of renewable energy sources in construction processes.	+

5.14.2 Mitigation ambition

Table 86: Russian Federation: Mitigation ambition

Element	INDC	First NDC	Change
Country's formulation of the target	Limiting GHG emissions to 70-75% of 1990 levels by the year 2030, subject to the maximum possible account of absorbing capacity of forests.	Limiting greenhouse gas emissions to 70% by 2030 relative to the 1990 level, taking into account the maximum possible absorptive capacity of forests and other ecosystems and subject to sustainable and balanced social economic development of the Russian Federation.	0
Resulting emission level in 2030, excl. LULUCF	2,423 – 2,578 MtCO ₂ e in 2030.	2,423 MtCO ₂ e in 2030.	+
Conditionality	The INDC gives the “ <i>maximum possible account of absorbing capacity of forests</i> ” as a condition for reaching the mitigation target.	The NDC gives the “ <i>maximum possible absorptive capacity of forests and other ecosystems and (...) sustainable and balanced social economic development of the Russian Federation</i> ” as conditions for reaching the mitigation target. The change is rated as “Unclear”, because an additional component of “conditionality” has been added, but it is not clear to what extent this affects the overall conditionality of the target.	?
Need for new policies to meet the target	Under current policies of the time, the Russian Federation was expected to reach the INDC's mitigation target.	Under current policies, the Russian Federation is expected to reach the NDC's mitigation target. Including LULUCF, emission levels under current policies are projected to be 38-43% below 1990 levels, i.e. 8-13 percentage points below the NDC mitigation target.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	LULUCF and removals are included in the target and not treated separately. The INDC gives the “ <i>maximum possible account of absorbing capacity of forests</i> ” as a condition for reaching the mitigation target. This weakens mitigation efforts in other sectors.	LULUCF and removals are included in the target and not treated separately. The NDC gives the “ <i>maximum possible absorptive capacity of forests and other ecosystems and (...) sustainable and balanced social economic development of the Russian Federation</i> ” as conditions for reaching the mitigation target. This weakens mitigation efforts in other sectors.	0

Element	INDC	First NDC	Change
Net-zero target	Not included in the INDC.	Not included in the NDC.	0
Alignment of NDC with long-term target/net-zero target	Not included in the INDC.	The NDC states that the mitigation target is linked to the development of a national strategy for long-term development with low GHG emissions, but no further details are provided.	+
Intended use of Article 6	Not included in the INDC.	The NDC states that the Russian Federation will consider the use of Article 6. Details are not provided.	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the INDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the INDC.	Not included in the NDC.	0

5.14.3 Mitigation completeness

Table 87: Russian Federation: Mitigation completeness

Element	INDC	First NDC	Change
Sector coverage	The INDC covers the sectors: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	The NDC covers the sectors: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	0
Gas coverage	The INDC covers the gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ ▶ NF₃ 	The NDC covers the gases: <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ ▶ NF₃ 	0

5.14.4 Mitigation implementation

Table 88: Russian Federation: Mitigation implementation

Element	INDC	First NDC	Change
Sectoral targets	Not included in the INDC.	Not included in the NDC.	0
NDC preparation process	Not included in the INDC.	The NDC states that the preparation for the decision was provided by the order of the Government of the Russian Federation (3 November 2016, No. 2444-r), linked to the long-term strategy. No further details are provided.	0
Clarity of national and sectoral implementation plans	Not included in the INDC.	Not included in the NDC.	0
National climate law(s)	The INDC describes that the Russian Federation will further elaborate and adopt legislative and regulatory acts to achieve the 2030 target, based on the Climate Doctrine and the Energy Strategy. Further details are not provided.	The NDC is closely linked to a Government order (03.11.2016 No. 2344-r) and the targets are reflected in the Climate Doctrine (17.12.2009 No. 861-rp). It remains unclear to what extent the NDC target is anchored in these policies.	0

5.14.5 Transparency

Table 89: Russian Federation: Transparency

Element	INDC	First NDC	Change
Availability of information to estimate resulting emissions level of target	The emissions level of the target (incl. LULUCF) is provided in the INDC. Emissions and removals in the base year are available in the national inventory reports of the Russian Federation.	The emissions level of the target (incl. LULUCF) is provided in the NDC. Emissions and removals in the base year are available in the national inventory reports of the Russian Federation.	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The NDC includes information on clarity, transparency and understanding in accordance with Decision 4/CMA.1.	+
Accounting modalities	The INDC describes that the methodological approaches and	The Russian Federation describes its intended use of Article 6, but with limited detail. The NDC uses	0

Element	INDC	First NDC	Change
	applied GWP are in line with the IPCC, but with limited detail.	the GWP from the 4 th IPCC Assessment Report. The NDC describes, although with limited detail, the approaches regarding LULUCF emissions and sinks.	
Explanation why the target is a fair contribution towards the global goal	The INDC notes that the Russian Federation's GDP in 2012 amounted to 173% compared to the 2000 GDP, while the GHG emission level was 112% in 2012 compared to the 2000 emission level. Hence, emissions per GDP decreased. Considering this and the emission sinks of LULUCF, the Russian Federation argues that the INDC target of up to 75% reduction is a fair contribution.	The NDC summarises the Russian Federation's GHG emission targets since 1990 (Kyoto Protocol), the original NDC target and the updated NDC target, but does not provide an explanation as to why these targets are a fair contribution to the global goal.	(-)

5.15 Rwanda

Rwanda's INDC, submitted in November 2015 (Republic of Rwanda, 2016), became its first NDC in October 2016, after Rwanda ratified the Paris Agreement. Rwanda submitted an updated NDC in May 2020 (Republic of Rwanda, 2020).

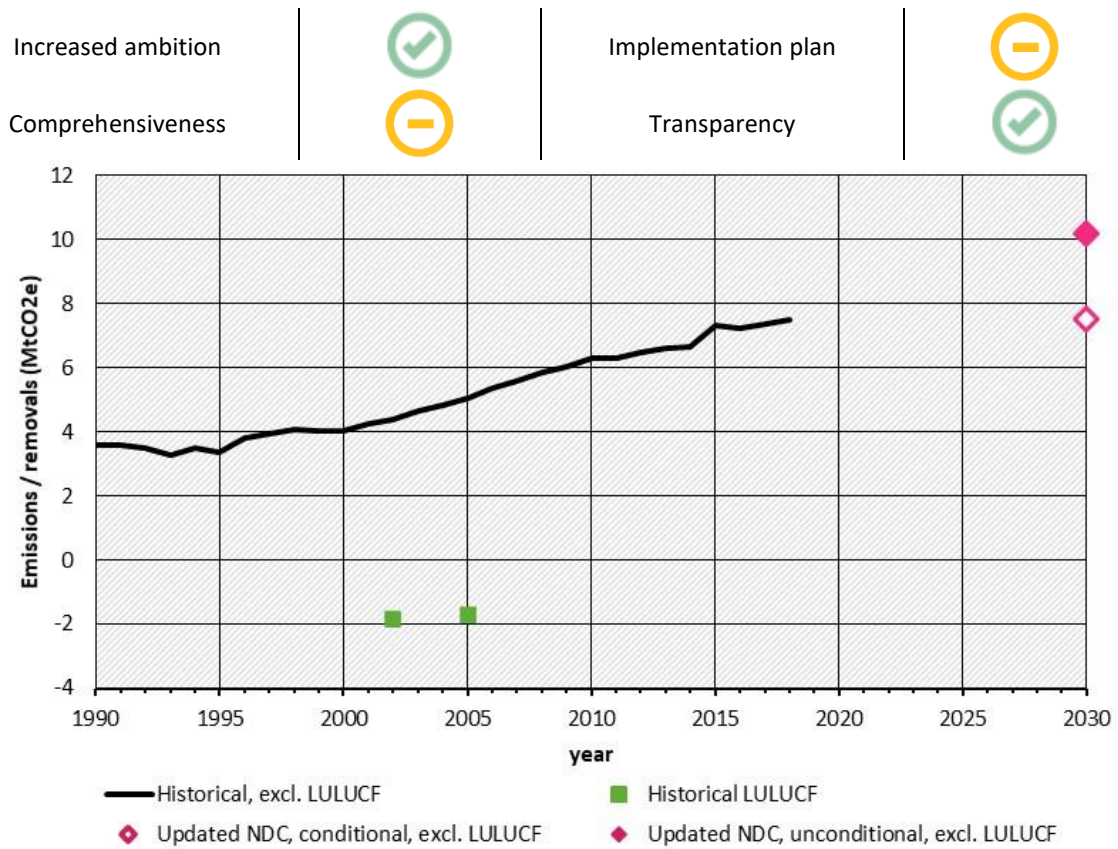
Rwanda's updated NDC is more ambitious than its first one. In comparison to the November 2015 version, the 2020 NDC provides an overall emissions reduction target for 2030 that includes unconditional and conditional components. Previously, Rwanda had no overall emissions reduction target and only outlined nine mitigation actions which were all conditional to international support.

While the new NDC provides more information including an additional greenhouse gas, a business as usual (BAU) baseline, estimated costs for implementation, and the sectors covered by the target, it misses the contribution from the forestry sector to be fully comprehensive.

With respect to its implementation plan, the new NDC includes sectoral mitigation targets and proposes a list of mitigation and adaptation measures—each presented with potential mitigation co-benefits, overall timeline and expected costs. However, the target has not yet been enshrined in national legislation.

Regarding transparency, Rwanda has significantly improved compared to the first NDC by providing more details of their overall emissions reduction target, a reference to its baseline and the assumptions behind it, its accounting modalities and planning processes (including a monitoring, reporting and verification framework).

Figure 20: Republic of Rwanda: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the PRIMAP-hist historic emissions database (Gütschow, J.; Günther, A.; Jeffery, L.; Gieseke, 2021) and Rwanda’s updated NDC (Republic of Rwanda, 2020).

5.15.1 Scope

Table 90: Rwanda: Scope

Element	First NDC	New NDC	Change
Mitigation	<p>The first NDC did not provide quantitative targets. Descriptions of certain measures to be implemented on the sectoral level were provided, but without a breakdown of 2030 BAU emissions or sector-specific targets. Actors in charge of monitoring and evaluating the implementation of the NDC are identified, as well as stakeholders for further consultations. The NDC was built on existing national policies, and through</p>	<p>The updated NDC includes information on conditional and unconditional mitigation targets. It also includes information on sectoral targets and sectoral mitigation and adaptation contributions. Tables with sectoral measures are included, with responsible actors, a timeline and estimated funding needs. Alignment with SDGs is indicated for a majority of measures.</p>	<p>We do not evaluate change between NDCs here, but rather in the following sections.</p>

Element	First NDC	New NDC	Change
	participatory stakeholder consultations and workshops. Details are not provided. The document does not mention a long-term strategy or net-zero target; all measures presented are to be implemented by 2030.	The document does not mention a long-term strategy or net-zero target.	
Adaptation	The NDC provides information on 19 adaptation measures in the following sectors: <ul style="list-style-type: none"> ▶ Agriculture (7) ▶ Forestry (2) ▶ Tourism (1) ▶ Water management (3) ▶ Land use (2) ▶ Cross-cutting (4) The NDC provides information of mitigation co-benefits of adaptation actions.	The NDC provides information on 24 adaptation measures in the following sectors: <ul style="list-style-type: none"> ▶ Water management (3) ▶ Agriculture (6) ▶ Land and forestry (6) ▶ Human Settlements (2) ▶ Health (2) ▶ Mining (1) ▶ Cross-cutting (4) The NDC provides information of mitigation co-benefits of adaptation actions and links to SDGs.	+
Economic diversification	Not included in the NDC.	Not included in the NDC	0
Financing	The NDC mentions finance needs but does not provide an estimate.	The NDC provides estimates for conditional mitigation and adaptation measures, totalling USD 6,885 million.	+
Technology transfer and capacity building	The NDC mentions technology transfer and capacity building but does not provide details or specific needs.	The NDC mentions technology transfer and capacity building and provides a few specific needs and plans in section 8.2.	+

5.15.2 Mitigation ambition

Table 91: Rwanda: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	The first NDC mentions a mitigation contribution of emissions reductions below a BAU scenario but neither specifies the reduction target nor the baseline scenario. The NDC outlines 9 mitigation actions in the following sectors: <ul style="list-style-type: none"> ▶ Energy (4) ▶ Transport (1) 	Unconditional commitment to reduce GHG emissions by 16% below BAU by 2030. Conditional commitment to reduce GHG emissions by an additional 22% below BAU by 2030. The NDC provides further detail of specific mitigation actions per sector.	+

Element	First NDC	New NDC	Change
	<ul style="list-style-type: none"> ▶ Industry (2) ▶ Waste (1) ▶ Forestry (1) 		
Resulting emission level in 2030, excl. LULUCF	The NDC does not provide enough information to estimate resulting emission level in 2030.	Unconditional target: 10.2 MtCO ₂ e. Conditional target: 7.5 MtCO ₂ e. ²⁶	?
Conditionality	The NDC indicates a need for “predictable, sustainable and reliance support in the form of finance, capacity building and technology transfer.” However, this is not directly linked to the overall target.	The NDC includes a conditional target, which increases GHG emission reduction to 38% compared to BAU in 2030. The NDC indicates important finance needs (p.71), with estimated costs for conditional mitigation targets estimated per activity and representing close to 65% of the total funds needed. Implementation is conditioned to international support (climate finance and international market mechanisms).	+
Need for new policies to meet the target	Information on current policies projections is not available.	Information on current policies projections is not available.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	Information on LULUCF and removals is included. One measure regarding sustainable charcoal production is presented with mitigation potential.	The NDC explicitly excludes the forestry sector from the mitigation target.	(-)
Net-zero target	The NDC does not mention a net-zero target. No separate net-zero target or long-term strategy has been communicated to the UNFCCC.	The NDC does not mention a net-zero target. No separate net-zero target or long-term strategy has been communicated to the UNFCCC.	0
Alignment of NDC with long-term target/net-zero target	No long-term strategy or net-zero target are mentioned.	No long-term strategy or net-zero target are mentioned.	0

²⁶ The NDC does not specify the Global Warming Potential (GWP) values used, however it references Rwanda’s Third national Communication (Republic of Rwanda, 2018) which uses values from the IPCC Forth Assessment Report (AR4).

Element	First NDC	New NDC	Change
Intended use of Article 6	The NDC indicates the intention to sell carbon credits to contribute towards achieving its Green Growth and Climate Resilience Strategy.	The NDC indicates a potential role for approaches under Article 6, but no further details are provided.	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	The NDC indicates that even though the Ministry of Natural Resources is in charge of formulating and monitoring policies related to climate change, participation from stakeholders (including the private sector, civil society, universities and research facilities, and public institutions) is needed to successfully implement the measures indicated in the document. However, no precise targets or expected contributions are included.	The NDC notes that communities, private sector actors as well as NGOs can contribute to climate change-related activities through public-private initiatives. However, no precise targets or expected contributions are included.	0

5.15.3 Mitigation completeness

Table 92: Rwanda: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Transport ▶ Industry ▶ Waste ▶ Forestry 	<ul style="list-style-type: none"> ▶ Energy ▶ Transport ▶ Industrial processes and product use (IPPU) ▶ Waste ▶ Agriculture (excluding forestry and other land use) 	(-)
Gas coverage	<ul style="list-style-type: none"> ▶ CO₂ ▶ N₂O ▶ CH₄ 	<ul style="list-style-type: none"> ▶ CO₂ ▶ N₂O ▶ CH₄ ▶ HFCs 	+

5.15.4 Mitigation implementation

Table 93: Rwanda: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The NDC does not provide sectoral targets but offers a list of mitigation actions to be implemented in the energy, transport, industry and waste and forestry sectors.	The NDC provides a sectoral breakdown of mitigation potential in 2030 against the BAU baseline. Some of the measures presented in the 2015 NDC are still included, but the list of actions has been expanded. The sectoral mitigation potential is estimated for the scenario in which all mitigation measures are taken into account. The mitigation potential for each measure is not provided.	+
NDC preparation process	The NDC notes that the preparation process was conducted through participatory and transparent means, including stakeholder consultations and workshops. There is no precise information on which stakeholders were involved.	The NDC notes that the preparation process was conducted through a stakeholder-driven process, involving cross-departmental discussions, sectoral and technical experts. There is no precise information on which stakeholders were involved.	+
Clarity of national and sectoral implementation plans	Mitigation opportunities in all covered sectors are presented, in some cases with mitigation potential. The document indicates that measures have been adopted under the Green Growth and Climate Resilience Strategy (Republic of Rwanda, 2011).	The NDC provides information on the establishment of a national framework to track the implementations of measures. A Measuring, Reporting and Verification (MRV) framework was created in order to facilitate progress tracking and assess if existing policies and measures will allow the achievement of the overall target. Regarding implementation plans, the document has been elaborated based on the Green Growth and Climate Resilience Strategy (Republic of Rwanda, 2011), which itself has been translated into District Development Plans and sectoral strategic plans. In addition to this existing structure, a new monitoring framework has been developed in order to evaluate the NDC's implementation process.	+
National climate law(s)	Not included in this NDC, but the document highlights that the NDC was developed on the basis of several "national guiding documents," including the Green	The NDC target has not yet been enshrined in a law, but was developed on the basis of the Green Growth and Climate Resilience Strategy (Republic of	0

Element	First NDC	New NDC	Change
	Growth and Climate Resilience Strategy (Republic of Rwanda, 2011).	Rwanda, 2011), which sets out the priorities and actions related to climate change mitigation and adaptation.	

5.15.5 Transparency

Table 94: Rwanda: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC indicates that the mitigation contribution is a deviation from BAU projections. While some of the mitigation measures include potential emissions reduction estimations for 2030, the NDC does not mention the BAU reference scenario rendering impossible to estimate the target's emissions level. The NDC explains that the estimation of impacts of the actions is underway and will be informed by Rwanda's Third National Communication —which was submitted under the UNFCCC three years after the NDC.	GHG emissions estimates are available in Rwanda's Third National Communication (2018), covering the years up to 2015 and excluding forestry.	+
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The NDC provides information on assumptions, methods and planning process.	+
Accounting modalities	Not included in the NDC.	The NDC indicates that it relies on Rwanda's Third National Communication (TNC) as a base for estimations. The TNC was elaborated following 2006 IPPC guidelines. Forestry and other land use is excluded from this NDC but may be added when more accurate quantification will be available. The NDC provides mitigation contributions against BAU for 2020, 2025 and 2030. A timeline is included in the tables presenting mitigation and	+

Element	First NDC	New NDC	Change
Explanation why the target is a fair contribution towards the global goal	The NDC states that the contribution is “equitable and ambitious” as Rwanda has taken steps to established mitigation targets in several policy documents, while being part of the Least Developed Countries, having a low GHG emissions per capita and having estimated net emissions in 2005 according to its Second National Communication.	<p>adaptation measures to indicate when measures are expected to be introduced.</p> <p>The NDC does not directly refers to fairness but notes that Rwanda’s contribution to climate change through GHG emissions is limited.</p>	0

5.16 Tonga

Tonga's INDC, submitted in December 2015 (Kingdom of Tonga, 2015), became its first NDC in September 2016, after Tonga ratified the Paris Agreement. Tonga submitted its second NDC in December 2020 (Kingdom of Tonga, 2020).

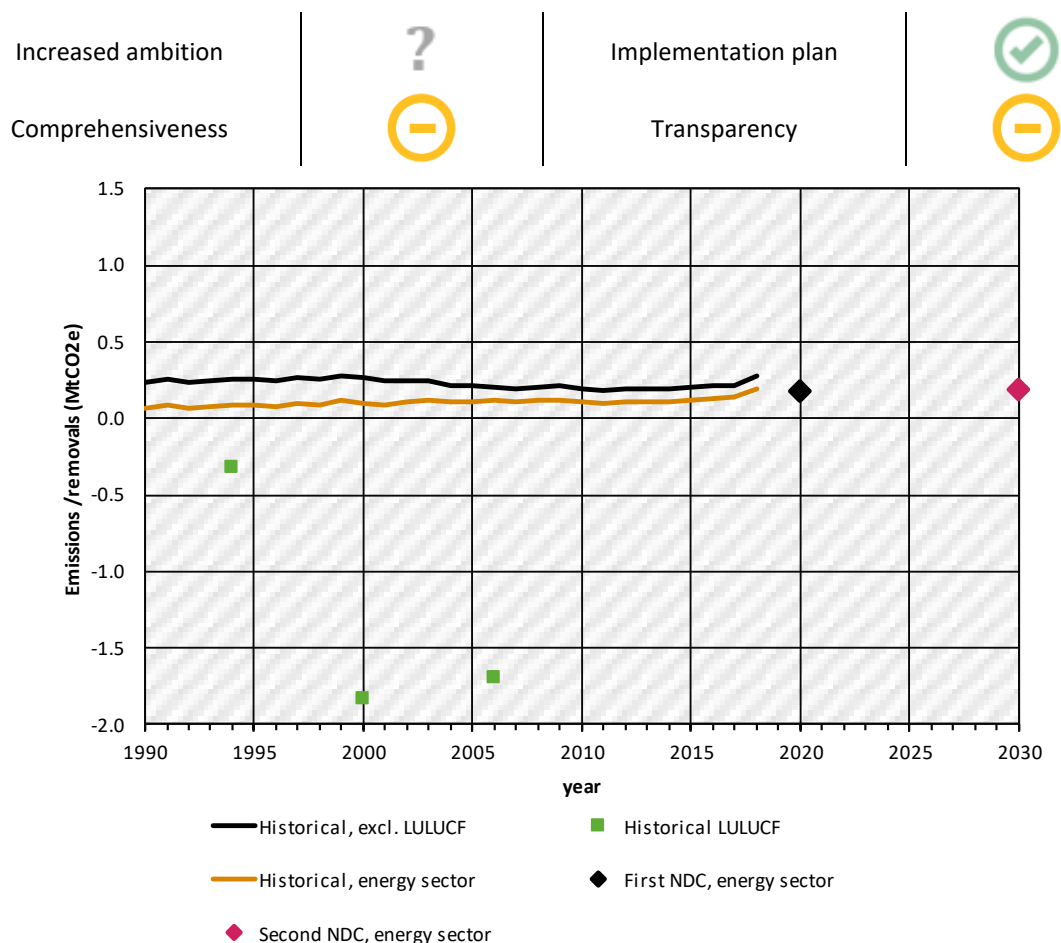
Under its second NDC, the Tongan government commits to reducing GHG emissions in the energy sector by 13% by 2030, compared to 2006, through a transition to a 70% share of renewable energy and energy efficiency measures. The 70% renewable energy target was also included in the first NDC.

While the new NDC includes an emission reduction goal for the energy sector, it is not possible to determine whether mitigation ambition increased. Both NDCs give an estimate of the associated emission reductions but provide no further details.

Due to a lack of data on GHG emissions in various sectors, Tonga's updated NDC covers only the energy sector and therefore is only partially comprehensive. Tonga plans to collect data on emissions in the LULUCF and waste sectors and set reduction targets for those in its 2025 NDC.

The second NDC lists a number of policy plans, which are aimed at achieving the renewable energy target by 2030. The Tongan government followed the guidance on information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1 and provides information on all elements. However, recent GHG inventory data is not available.

Figure 21: Tonga: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on PRIMAP-hist (Gütschow, J.; Günther, A.; Jeffery, L.; Gieseke, 2021) for historical emissions excl. LULUCF and emissions from the energy sector from, and from the UNFCCC (2021) for historical LULUCF emissions.

5.16.1 Scope

Table 95: Tonga: Scope

Element	First NDC	New NDC	Change
Mitigation	The first NDC contains information on measures to reduce greenhouse gas emissions in the following sectors: energy; transport; land use change and forestry; and agriculture. The first NDC includes an Annex outlining priority enabling activities and priority near-term investments, including details on timeline and whether the activities and investments are conditional on support; and whether support partners are identified.	Like the first NDC, Tonga’s second NDC contains information of emission reduction measures in various sectors. The NDC provides less information on the implementation processes than the first NDC. The second NDC is based on the same historical data as the first NDC: data from 2006. The Tongan government commits to collecting data on emissions in the LULUCF and waste sectors and to use this for its 2025 NDC update.	We do not evaluate change between NDCs here, but rather in the following sections

Element	First NDC	New NDC	Change
	Further, the NDC describes the planning process and which stakeholders were involved. The NDC contains limited information on historical emissions; most recent data stems from 2006 (Kingdom of Tonga, 2015).	Tonga's second NDC provides that the government is working on a Long-Term Strategy, which it will submit in 2021. The NDC does not mention whether this LTS will include a net-zero target.	
Adaptation	The first NDC includes information on planned adaptation measures in the following sectors: public infrastructure, buildings, coastal protection, the agriculture sector and the forestry sector. Importantly, Tonga commits to doubling the number of Marine Protected Areas by 2030, compared to 2015. The first NDC provides that Tonga is in the process of developing a new Joint National Action Plan for Climate Change Adaptation and Disaster Risk Reduction (JNAP).	The second NDC includes three adaptation-related targets: <ol style="list-style-type: none"> 1) To utilise 30% of land in Tonga for agroforestry by 2025; 2) To prevent any permanent loss of land to rising sea levels on Tonga's four main islands; and 3) To maintain the existing stocks of fish and other marine species. It also provides that Tonga accounts for any mitigation co-benefits from adaptation actions and/or economic diversification as mitigation actions.	+
Economic diversification	The first NDC includes no economic diversification actions.	The second NDC includes no economic diversification actions. It explains that any mitigation co-benefits that arise from such actions are accounted for as mitigation actions.	0
Financing	The first NDC provides that Tonga has no dominant funding source for climate change and relies on a range of international and bilateral sources. The government has consolidated the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC) as the vehicle to step up its ambition and mobilise climate finance and resources. The first NDC does not specify what amount of financial support Tonga needs to achieve its mitigation and adaptation targets.	The second NDC specifies that Tonga needs "considerable support for financing, capacity and technology investment from external sources" for all of its mitigation targets. Further financial support is needed to establish a forestry inventory and to expand the formal waste collection system, including the collection of relevant data. It does not specify how much financial support Tonga requires to meet its targets.	0
Technology transfer and capacity building	The first NDC mentions that Tonga needs technology transfer for its action area "mainstreaming for a	The second NDC states that Tonga needs technology transfer, as well as capacity building and external financial support, to build, operate	+

Element	First NDC	New NDC	Change
	resilient Tonga” but provides no further details.	and maintain renewable energy infrastructure. Tonga may also need such support to develop vehicle and appliance standards and incentives.	

5.16.2 Mitigation ambition

Table 96: Tonga: Mitigation ambition

Element	First NDC	New NDC	Change
Country’s formulation of the target	<p>Tonga has no overall emission reductions goal, but commits to the following mitigation-related targets:</p> <ol style="list-style-type: none"> 1) 50% of electricity generation from renewable sources by 2020; 2) 70% of electricity generation from renewable sources by 2030; and 3) Reduce electricity line losses to 9% by 2020 compared to a baseline of 18% in 2010. <p>The first NDC also provides that Tonga will set sectoral emission reduction targets in the transport, agriculture, waste and reforestation sectors, but without further specifications.</p>	<p>The second NDC includes one emission reduction target: a 13% (16 Gg) reduction in GHG emissions in the energy sector by 2030, compared to 2006.</p> <p>The second NDC states two further mitigation-related goals:</p> <ol style="list-style-type: none"> 1) To establish a forest inventory as prerequisite to identify a GHG emission reduction target for the 2025 NDC and planting one million trees by 2023; and 2) To expand the formal waste collection system as prerequisite to identify a GHG emission reduction target for the 2025 NDC. <p>Finally, the second NDC specifies that Tonga sets no targets for the industrial processes and product use sector, due to its low contribution of GHG in the country and lack of data on emissions.</p>	+
Resulting emission level in 2030, excl. LULUCF	<p>The NDC provides neither the resulting emission levels in 2030, nor data to calculate this. However, based on the NDC’s 50% renewable energy target by 2020, we estimate the 2020 emission levels as 0.18 MtCO_{2e} or 179 GgCO_{2e}.</p> <p>The NDC states that the 50% renewable electricity target by 2020 equals a reduction of 27 GgCO_{2e} compared to 2006 emissions. The NDC does not specify what assumptions are behind this number.</p> <p>In 2006, emissions excluding LULUCF were 206 GgCO_{2e}</p>	<p>The NDC provides that the 13% emission reduction target for the energy sector equals emissions reductions of 16 Gg by 2030 compared to 2006. The NDC provides no information on assumptions behind the 16 Gg reduction.</p> <p>To calculate the resulting emission level by 2030, we subtracted 16 GgCO_{2e} from 206 GgCO_{2e} historical emissions in 2006 (Gütschow, J.; Günther, A.; Jeffery, L.; Gieseke, 2021). The emission level by 2030 is estimated as 190 GgCO_{2e} or 0.19 MtCO_{2e}.</p>	?

Element	First NDC	New NDC	Change
	(Gütschow, J.; Günther, A.; Jeffery, L.; Gieseke, 2021). We subtracted 27 GgCO ₂ e from 206 GgCO ₂ e (179 GgCO ₂ e.) and converted to MtCO ₂ e (0.18 MtCO ₂ e).	This is less than the reduction of 27 GgCO ₂ e by 2020 mentioned in the first NDC, even though the 50% renewable energy target from the first NDC is included in the 13% reduction target from the second NDC. The second NDC does not explain where this difference comes from.	
Conditionality	The first NDC specifies that in addition to the government's ex-ante funding, Tonga has no dominant funding source and relies on international support. Most of the priority near-term investments that the first NDC identifies are conditional on additional support. While not explicitly stated in the NDC, we assume that Tonga's commitments are to a large extent conditional on international support.	The second NDC states that while Tonga will invest a large share of its public finance to achieve its climate mitigation objectives, it needs considerable financial and technical support to achieve its target. The NDC also states that Tonga's renewable energy targets are conditional on international support.	0
Need for new policies to meet the target	Information on current policies projections is not available.	Information on current policies projections is not available.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is not included in the NDC target (which covers the energy sector only). The first NDC states, however, that future mitigation activities should focus on the maintenance of Tonga's forest resources and preservation of forest ecosystem services; and on reductions in the energy sector.	Like the first NDC, the second NDC does not cover the LULUCF sector for its emissions reduction target. The second NDC explains that a lack of reliable data leads to significant uncertainty in quantifications of GHG emissions and carbon sequestration from forests. In its second NDC, the government of Tonga commits to including anthropogenic emissions or removals in the LULUCF sector in the 2025 NDC.	0
Net-zero target	The first NDC includes no net-zero or other long-term target.	The second NDC includes no net-zero or other long-term target. It mentions that a Long-Term Low Emission Development Strategy (LT-LEDS) is under development and will be submitted to the UNFCCC in 2021.	0

Element	First NDC	New NDC	Change
Alignment of NDC with long-term target/net-zero target	Not applicable.	Not applicable as there is no long-term target yet. However, the NDC provides that it is aligned with the upcoming LT-LEDS.	0
Intended use of Article 6	Not included in the first NDC.	The second NDC provides that Tonga intends to achieve its mitigation target exclusively through domestic efforts and does not envisage any internationally transferred mitigation outcomes.	+
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the first NDC.	Not included in the second NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the first NDC.	Not included in the second NDC.	0

5.16.3 Mitigation completeness

Table 97: Tonga: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<p>The first NDC states that the following sectors are covered:</p> <ul style="list-style-type: none"> ▶ Energy ▶ Agriculture and ▶ Waste <p>However, the first NDC sets only an emissions reduction target for the energy sector.</p>	<p>The headline target of the second NDC covers the following sector:</p> <ul style="list-style-type: none"> ▶ Energy <p>However, like the first NDC, the second NDC sets non-emission reduction targets for the agriculture, forestry, and waste sectors.</p>	0
Gas coverage	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O <p>Other gases/ climate forcers:</p> <ul style="list-style-type: none"> ▶ CO ▶ SO₂ ▶ NO_x ▶ NMVOC 	+

5.16.4 Mitigation implementation

Table 98: Tonga: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	<p>The first NDC commits to two sectoral, non-greenhouse gas targets:</p> <ul style="list-style-type: none"> ▶ 70% of electricity generation from renewable sources by 2030; ▶ Improve energy efficiency through reduction of electricity line losses to 9% by 2020 (compared to 18% in 2010).²⁷ <p>The first NDC also provides that Tonga commits to “sector emission reduction targets related to transport, agriculture, environmentally friendly waste management, and reforestation” but lacks further details.</p>	<p>The new NDC sets the non-greenhouse gas target of a 70% renewable energy share by 2030. Further, Tonga commits to establishing a forest inventory and to expand the formal waste collection system. The inventory and collection system are to support the identification of a GHG emission reduction target for the AFOLU and waste sector, respectively. These targets will be included in the 2025 NDC.</p>	0
NDC preparation process	<p>Tonga’s government prepared the first NDC using national policy documents and sector policies and plans. The NDC was then reviewed by Tonga’s Climate Change Technical Group, which consists of representatives from relevant ministries and agencies. The first NDC provides that, in preparation for COP21, the government tabled the INDC under the Tonga Strategic Development Framework for stakeholder consultation. It is unclear, whether this has led to any changes to the first NDC.</p>	<p>The second NDC provides detailed information on the preparation process. The Department of Climate Change led the development of the second NDC. The Department reviewed progress on targets spelled out in the first NDC and identified means to enhance the second NDC. In this process, the Department asked for input from various stakeholders, including governmental and non-governmental organisations. At national workshops, the Tonga Joint National Action Plan technical team and relevant stakeholders discussed this input. These actors also did a final validation of the second NDC.</p>	+
Clarity of national and sectoral implementation plans	<p>The mechanisms for NDC implementation are a new Joint National Action Plan for Climate Change and Disaster Risk Reduction, along with other plans at sectoral, island and community levels. While many specific actions</p>	<p>The second NDC provides that Tonga is currently developing an LT-LEDS; and that the Tongan government intends to develop an NDC Roadmap and Investment Plan in 2021.</p>	0

²⁷ According to the Tonga Nationally Determined Contributions Review Report, which is attached to the Second NDC, Tonga achieved this target (page 14, Kingdom of Tonga, 2020).

Element	First NDC	New NDC	Change
	still need to be identified, the NDC lists priority enabling activities and near-term investments that are needed to achieve the mitigation targets. The NDC also specifies the planned period of implementation, whether these activities and investments are conditional on additional support, and whether support partners are identified.	Further, the NDC lists mitigation measures in the energy, industrial processes, AFOLU and waste sectors.	
National climate law(s)	Not included in the NDC.	Not included in the NDC.	0

5.16.5 Transparency

Table 99: Tonga: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	<p>The NDC provides that the 50% renewable energy share by 2020 equals emission reductions of 27 GgCO_{2e} by 2020, compared to 2006.</p> <p>It is not possible to estimate the resulting emissions level of all measures outlined in the NDC by 2030, as data on the reduction potential of these measures is lacking.</p> <p>Further, most recent historical data is from 2006. More recent data would be beneficial to make a good estimate for 2030 emission levels. Finally, the NDC does not specify what assumptions the Tongan government made and which accounting modalities they used.</p>	<p>The second NDC provides that the 70% renewable energy share by 2030 equals a reduction of 16 GgCO_{2e} by 2030, compared to 2006.</p> <p>As in the first NDC, it is not possible to estimate the resulting emissions level of all measures outlined in the NDC by 2030, as data on the reduction potential of these measures is lacking.</p> <p>Further, most recent historical data is from 2006. More recent data would be beneficial to make a good estimate for 2030 emission levels.</p>	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1 and provides information for each of the elements.	+
Accounting modalities	The NDC states its data sources and how the quantified emissions impact was estimated. However, details are lacking. To estimate	The new NDC provides the same information as the first NDC.	0

Element	First NDC	New NDC	Change
	emissions, the NDC used IPCC 2006 guidelines.		
Explanation why the target is a fair contribution towards the global goal	<p>The NDC states that Tonga is one of the countries most at risk of climate change. The need to invest in climate mitigation and adaptation is a “consequence of the emissions of other large countries over many generations as they developed and became wealthy.” It also notes that Tonga will need considerable support for capacity and technology investment to achieve its target. The NDC thus implicitly states that the target is fair, because Tonga carries limited responsibility for climate change and has limited financial and capacity resources.</p>	<p>The second NDC makes the same argument as the first NDC and directly states that it considers its NDC as fair and ambitious. It further adds that Tonga’s GHG emissions are negligible on a global scale and that they need considerable international support in the form of financing, and capacity and technology investment to achieve their targets.</p>	0

5.17 United Kingdom

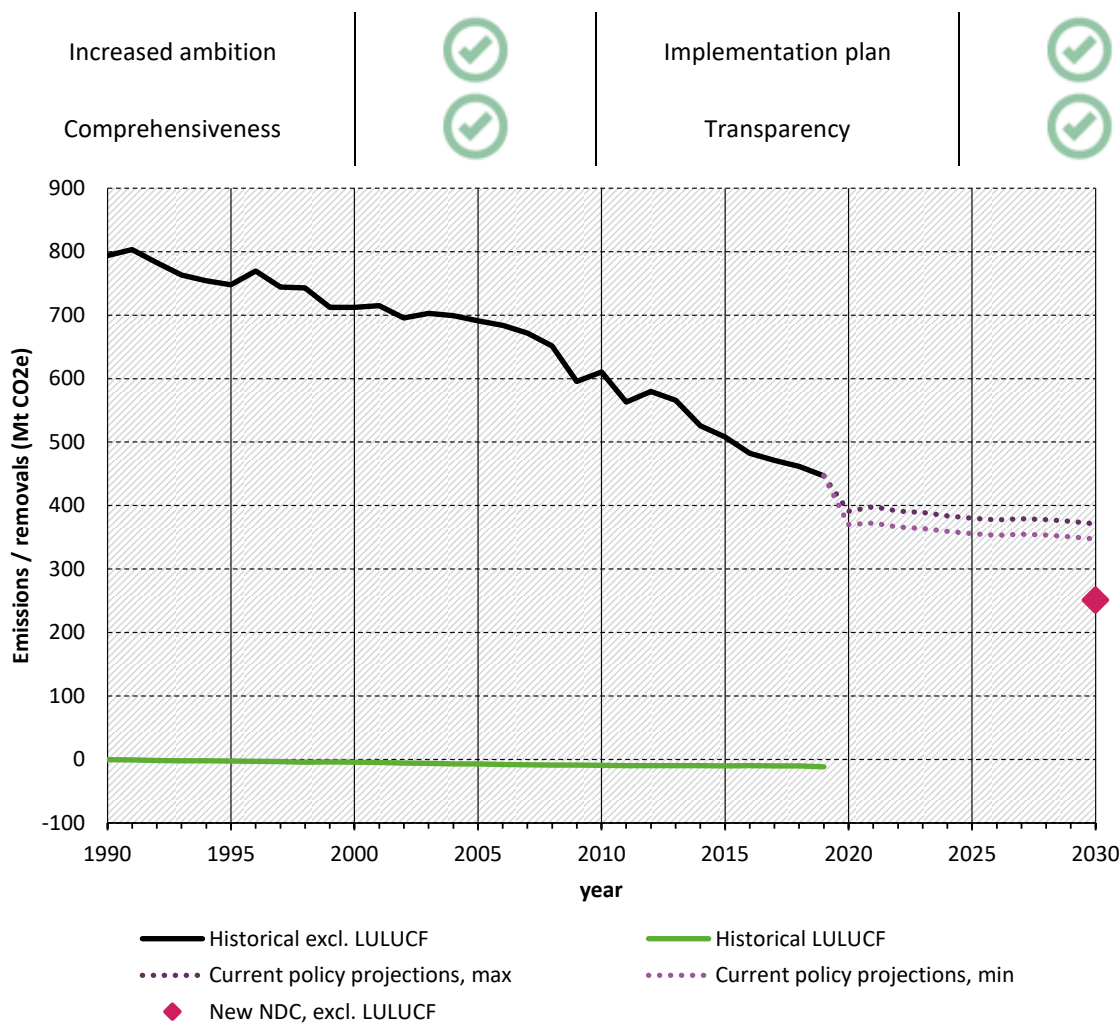
The UK submitted its first NDC in December 2020 (UK government, 2020). It has not submitted an earlier NDC as it was previously part of the first NDC submitted by the EU in March 2015. The UK decided to leave the EU in 2016 which became effective in 2020. In comparison to the EU's first NDC, the UK's first NDC provides a more ambitious emissions reduction target by committing to reducing economy-wide GHG emissions by at least 68% by 2030, compared to 1990 levels, instead of the UK's contribution to the EU's first NDC which the UK estimates to be a reduction of 53% below 1990 levels (UK government, 2020, p. 27). The UK's NDC covers all sectors and gases required under the Paris Agreement, also including the LULUCF sector. It focuses on mitigation.

Information to facilitate clarity, understanding and transparency is provided as laid out in decision 4/CMA.1. The UK has a comprehensive implementation framework in place: the Climate Change Act requires the UK Government to set carbon budgets that cap emissions over successive five-year periods. However, the statement that the UK reserves the right to use voluntary cooperation under Article 6 of the Paris Agreement implies some uncertainty related to the precise domestic ambition level and the way in which the target will be implemented.

For Scotland, Wales and Northern Ireland, separate emissions reduction targets are defined. Progress towards these targets contributes to the achievement of UK-wide targets. Also, specific policy frameworks and climate strategies apply to these territories on which some information is provided in the NDC. The assessment in this document covers the UK as a whole and does not analyse the contributions of Scotland, Wales and Northern Ireland separately.

In addition to its NDC, the UK has submitted its Adaptation Communication to the UNFCCC. In its NDC, the UK also announces its intention to submit its first Finance Biennial Communication by the end of 2020.

Figure 22: UK: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020r, 2020s).

5.17.1 Scope

Table 100: UK: Scope

Element	First NDC (EU)	New NDC (UK)	Change
Mitigation	The NDC contains a clear description of the mitigation target, its scope and coverage. The NDC states that legislative proposals to implement the 2030 climate and energy framework are to be submitted in 2015-16. The NDC refers to the EU’s long-term objective at the time of submission, which was to reduce its emissions by 80-95 % by 2050 compared to 1990.	Information on the mitigation target, its scope and coverage, is provided in line with decision 4/CMA.1. The NDC lists the legal framework for implementing the target and points to exemplary policies and measures. It states that the UK intends to publish a comprehensive Net Zero Strategy ahead of COP26, as well as individual plans across key sectors of the economy.	We do not evaluate change between NDCs here, but rather in the following sections.

Element	First NDC (EU)	New NDC (UK)	Change
Adaptation	Not included in the NDC.	Not included in the NDC. Reference is made to the Adaptation Communication which has been submitted in parallel to the NDC as well as to the UK Government's National Adaptation Programme.	○
Economic diversification	Not included in the NDC.	Not included in the NDC.	○
Financing	Not included in the NDC.	Not included in the NDC.	○
Technology transfer and capacity building	Not included in the NDC.	Not included in the NDC.	○

5.17.2 Mitigation ambition

Table 101: UK: Mitigation ambition

Element	First NDC (EU)	New NDC (UK)	Change
Country's formulation of the target	At least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990 (EU). UK contribution: 53% reduction by 2030 compared to 1990.	Economy-wide net domestic reduction of at least 68% in greenhouse gas emissions by 2030 compared to 1990. The target is defined as single year target; five-year emissions budgets are set in the Climate Change Act.	○
Resulting emission level in 2030, excl. LULUCF	3391 MtCO ₂ e (EU). This value includes the emissions of the United Kingdom. The emission level of the UK in 1990 was 794 Mt CO ₂ e. Resulting emissions level for the UK: 356 MtCO ₂ e in 2030.	Up to 251 MtCO ₂ e in 2030 (excl. LULUCF).	+
Conditionality	The NDC is unconditional.	The NDC is unconditional.	○
Need for new policies to meet the target	New policies are needed to meet the target, because the policies in place at the time of submission of the first NDC cover the period up to 2020 only.	The NDC refers to policies and measures to be published as plans for key sectors ahead of COP26. New policies are needed to meet the target; it cannot be assessed to what extent the plans that are currently prepared include sufficient and effective policies.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The way how the LULUCF sector would be included in the target was still open at the time of submission of the first NDC.	Emissions and removals from the LULUCF sector are included in the target, a change in definition to the first NDC.	+

Element	First NDC (EU)	New NDC (UK)	Change
	It was later defined in the LULUCF Regulation (EU) 2018/841. This regulation contributes to reaching the NDC target through the commitment of each Member State that total emissions do not exceed total removals of all land accounting categories.	However, a separation of the contribution of the LULUCF sector cannot be determined with the provided information. Accounting of LULUCF emissions and removals will be done on the basis of a net-net approach.	
Net-zero target	The first NDC does not refer to a net-zero target, but to the EU's long-term objective at the time of submission, which was to reduce its emissions by 80-95 % by 2050 compared to 1990.	The NDC refers to the legally binding Climate Change Act which was revised in 2019, setting an economy-wide net zero target by 2050. It is stated that a comprehensive Net Zero Strategy, setting out the government's vision for transitioning to a net zero economy by 2050 will be published ahead of COP26. Information on a trajectory or on the role of the LULUCF sector is not provided.	+
Alignment of NDC with long-term target/net-zero target	The first NDC states that the target is in line with the EU's long-term objective. However, the NDC does not provide an explanation on why it is in line with this objective.	The NDC states that the target is in line with the net zero target by 2050. However, the NDC does not provide any detailed explanation on why it is in line with this target.	o
Intended use of Article 6	The first NDC states that it does not include contributions from international credits.	The NDC states that the UK intends to meet its target through reducing emissions domestically. However, it reserves the right to use voluntary cooperation under Article 6 of the Paris Agreement through linking the UK's emissions trading systems to other systems or through the use of emission reductions or removal units. No further information on the extent to which Article 6 might be used or rules for the use of international credits is provided.	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	o
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	o

5.17.3 Mitigation completeness

Table 102: UK: Mitigation completeness

Element	First NDC (EU)	New NDC (UK)	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste <p>LULUCF is accounted separately. According to the EU's updated NDC, emissions from aviation, including international flights that start in the EU, were included in the first EU NDC.</p>	<ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste ▶ LULUCF <p>Emissions from international aviation are not included in the NDC.</p>	+
Gas coverage	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ ▶ NF₃ 	<p>Greenhouse gases:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFC ▶ HFC ▶ SF₆ ▶ NF₃ 	o

5.17.4 Mitigation implementation

Table 103: UK: Mitigation implementation

Element	First NDC (EU)	New NDC (UK)	Change
Sectoral targets	Not included in the NDC.	Not included in the NDC.	o
NDC preparation process	Not included in the NDC.	<p>The process of preparing the NDC and involving different stakeholders is described briefly. The decision on the UK's NDC headline target was led by the Government Department for Business, Energy and Industrial Strategy and agreed through UK Government governance structures at official and ministerial levels. The target level in the UK's NDC was informed by the UK's commitments under the Paris Agreement, the legally binding net zero commitment, and guidance from the Climate Change Committee. Public consultations on the UK's approach to its NDC were</p>	+

Element	First NDC (EU)	New NDC (UK)	Change
		held. Information to facilitate the clarity, transparency and understanding of the NDC was prepared in collaboration with UK Government departments and the Devolved Administrations.	
Clarity of national and sectoral implementation plans	The NDC states that legislative proposals to implement the 2030 climate and energy framework are to be submitted in 2015-16.	The Clean Growth Strategy ²⁸ published in 2017 describes the UK's current policies and measures through the 2020s and beyond. Additionally, the NDC points to exemplary existing policies and refers to a Net Zero Strategy as well as sector plans that are to be published ahead of COP26. Therefore, no details on national and sectoral implementation plans are available.	+
National climate law(s)	The target and the long-term objective were not enshrined in a law at the time of submission of the NDC. The target was agreed by the European Council.	The long-term objectives are included in the legally binding Climate Change Act through a revision in 2019. Additionally, the Climate Change Act sets carbon budgets for the UK Government which cap emissions over successive five-year periods.	+

5.17.5 Transparency

Table 104: UK: Transparency

Element	First NDC (EU)	New NDC (UK)	Change
Availability of information to estimate resulting emissions level of target	GHG emissions in the year 1990 are available in the EU's National Inventory Report. They allow for estimating the target level (without LULUCF).	GHG emissions in the year 1990 are available in the UK's National Inventory Report. ²⁹ They allow for estimating the target level including LULUCF.	o
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The updated NDC contains a table which lists all elements from Annex I to decision 4/CMA.1. Information is provided for each of the elements. However, under "planning process", reference is made to key strategies and policies that were not available at the time	+

²⁸The following link leads to the Internet:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf

²⁹The following link leads to the Internet: <https://unfccc.int/documents/273439>

Element	First NDC (EU)	New NDC (UK)	Change
		of submitting the NDC, limiting the clarity and transparency of the information provided.	
Accounting modalities	The NDC states that a comprehensive accounting framework for LULUCF will be used, but it is not described.	The target is defined as a single year target. Five-year emission budgets are defined in the Climate Change Act. It is stated that the accounting modalities are in accordance with IPCC methodologies and future UNFCCC reporting guidelines. The reservation to potentially use Article 6 implies uncertainty with regard to the transparency and accounting of the target.	+
Explanation why the target is a fair contribution towards the global goal	An explanation why the target is considered fair and ambitious is provided, addressing the consistency with the long-term objective and the progression beyond the 2020 target.	An explanation why the target is considered fair and ambitious is provided, addressing the consistency with the climate neutrality objective and the progression compared to the first NDC.	o

5.18 United States of America

After re-joining the Paris Agreement, the United States of America submitted an NDC in 2021 (US Government, 2021). Here we compare this NDC to the original NDC submitted in March 2015 (US Government, 2015). Technically, the NDC of 2021 does not constitute an update of the previous NDC, but the first NDC after re-joining the Paris Agreement.

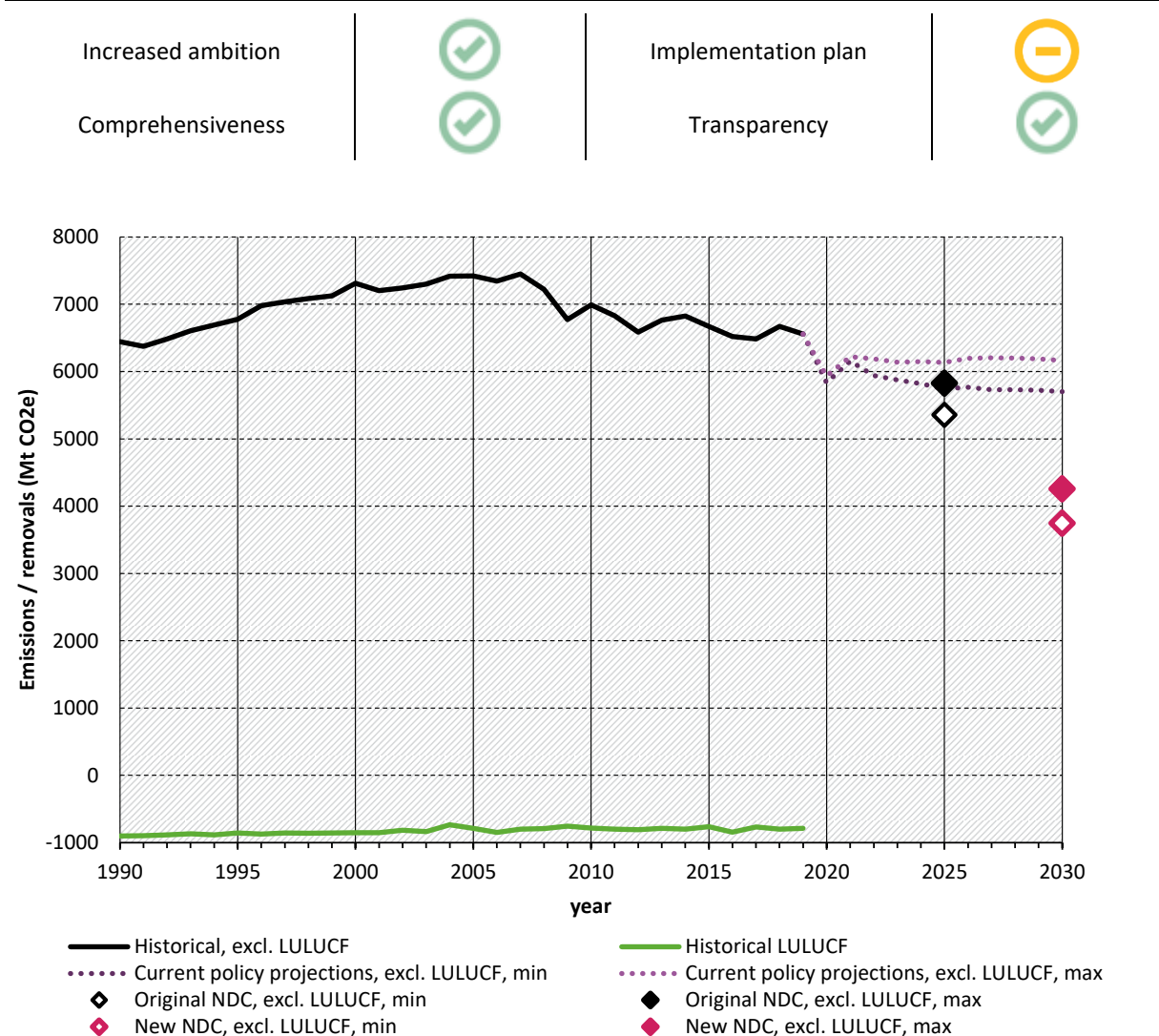
The NDC submitted in 2021 constitutes an increase in ambition compared to the NDC submitted in 2015. Although the new target year is 2030, the annual emissions reductions required to meet the new target are considerably higher compared to the original target.

The scope and coverage remain largely unchanged: Like the original NDC, the new NDC focuses on mitigation, and all relevant sectors and greenhouse gases are included.

As far as implementation is concerned, the NDC of 2021 introduced a sectoral goal, and more information on the NDC implementation process is available. However, details on national and sectoral implementation plans are not provided, and the implementation is not enshrined in national law. Overall, the information on implementation is comparable to the information provided in the original NDC.

In both the original and the new NDC, all key information which is required for the understanding of the NDC is provided in a concise way. The new NDC provides this information in line with the decision on information to facilitate clarity, transparency and understanding of the NDC.

Figure 23: United States of America: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020t, 2021e).

5.18.1 Scope

Table 105: United States of America: Scope

Element	First NDC	New NDC	Change
Mitigation	The NDC contains concise information on the mitigation target, its scope and coverage. Existing and planned regulatory actions are listed, which implement the NDC. A net-zero or long-term target is not included.	The NDC submitted in 2021 provides information on the mitigation target, its scope and coverage in line with decision 4/CMA.1. It also provides descriptive information on its planned implementation. A net-zero target is not mentioned explicitly.	We do not evaluate change between NDCs here, but rather in the following sections
Adaptation	Not included in the NDC.	Not included in the NDC.	0

Element	First NDC	New NDC	Change
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	Not included in the NDC.	Not included in the NDC.	0
Technology transfer and capacity building	Not included in the NDC.	Not included in the NDC.	0

5.18.2 Mitigation ambition

Table 106: United States of America: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Economy-wide target of reducing greenhouse gas emissions by 26-28% below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28%.	Economy-wide target of reducing net greenhouse gas emissions by 50-52% below 2005 levels in 2030. The target type remains unchanged. An additional sectoral goal is included, to reach 100% carbon pollution-free electricity by 2035.	0
Resulting emission level in 2030, excl. LULUCF	The NDC did not include a target for 2030, but for 2025. The resulting emission level translated to a level excluding LULUCF of approx. 5.4 to 5.8 GtCO ₂ e in 2025.	The resulting emission level translates to a level excluding LULUCF of approx. 3.7 to 4.3 GtCO ₂ e in 2030. Although the new target year is 2030, the annual emissions reductions required to meet the new target are considerably higher compared to the original target.	+
Conditionality	The NDC is unconditional.	The NDC is unconditional.	0
Need for new policies to meet the target	The NDC lists domestic laws, regulations and measures relevant to implementation. Some of them were under development at the time of submission. Hence, there was a need for new policies to meet the target.	The NDC lists additional actions to be pursued in various sectors. As current policy projections show that emissions in 2030 will be considerably higher than the target, new policies are needed to meet the target.	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The LULUCF sector is included, using a net-net accounting approach (i.e. a balance of total emission and removals is used for the base year and for the target year). Actions under the LULUCF sector are not included.	The LULUCF sector is included, using a net-net accounting approach (i.e., a balance of total emission and removals is used for the base year and for the target year). Planned actions in the LULUCF sector are mentioned; however, there is on a general level no	0

Element	First NDC	New NDC	Change
		information on the status of these actions.	
Net-zero target	A net-zero or long-term target is not included. In 2016, shortly after entry into force of the Paris Agreement, the US communicated a long-term-strategy, ³⁰ which includes a scenario for a -80% net emissions reduction by 2050.	A net-zero target is not mentioned explicitly, but it is stated that the NDC is expected to put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050.	?
Alignment of NDC with long-term target/net-zero target	The NDC stated that the 'target is consistent with a straight line emission reduction pathway from 2020 to deep, economy-wide emission reductions of 80% or more by 2050'	It is stated that the NDC is expected to put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050.	?
Intended use of Article 6	According to the first NDC, the United States did not intend to use international market mechanisms to implement its 2025 target.	According to the NDC submitted in 2021, the United States does not intend to use Article 6 to achieve its target.	0
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

5.18.3 Mitigation completeness

Table 107: United States of America: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	The NDC states that the target covers all IPCC sectors. These correspond to the following sectors: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture 	The NDC states that it covers all sectors, as defined in the IPCC 2006 guidelines. These correspond to the following sectors: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture 	0

³⁰The following link leads to the Internet: https://unfccc.int/files/focus/long-term_strategies/application/pdf/mid_century_strategy_report-final_red.pdf

Element	First NDC	New NDC	Change
	<ul style="list-style-type: none"> ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	<ul style="list-style-type: none"> ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	
Gas coverage	<p>The NDC explicitly lists the gases covered:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ ▶ NF₃ 	<p>The NDC does not list the gases covered. It states that it covers all greenhouse gases included in the IPCC 2006 guidelines. These include:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ ▶ NF₃ <p>In addition, the IPCC 2006 guidelines include several other halogenated greenhouse gases. It is unclear whether these additional gases are covered by the NDC.</p>	?

5.18.4 Mitigation implementation

Table 108: United States of America: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC.	In developing the NDC, the United States considered sector-by-sector emissions reduction pathways. For one sector a quantified goal is provided: In the electricity sector, the goal is to reach 100% carbon pollution-free electricity by 2035.	+
NDC preparation process	Very limited information is provided: The NDC states that the 'target reflects a planning process that examined opportunities under existing regulatory authorities to reduce emissions in 2025 of all greenhouse gases from all sources in every economic sector.	A wide range of stakeholders was consulted in an interagency process. The process included a bottom-up analysis of existing and potential policies and measures at the federal level, accounting for capital stock turnover, technology trends, infrastructure needs, and continued subnational policies and measures. The analysis considered multiple pathways across all sources of greenhouse gas emissions.	+
Clarity of national and	The NDC lists regulatory actions which are in place and actions	The NDC provides examples for actions to be pursued in various	?

Element	First NDC	New NDC	Change
sectoral implementation plans	which are under development. Details such as timelines are not provided.	sectors. Information on the status of these actions, including timelines, is not provided.	
National climate law(s)	Not included in the NDC.	Not included in the NDC.	0

5.18.5 Transparency

Table 109: United States of America: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	GHG emissions in the year 2005 are available in the National Inventory Report. They allow for estimating the target level (net GHG emissions/removals).	GHG emissions in the year 2005 are available in the National Inventory Report. They allow for estimating the target level (net GHG emissions/removals).	0
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	The NDC contains a table which lists all elements from Annex I to decision 4/CMA.1. Information is provided for all elements which are relevant to the NDCs. Other elements are marked as 'n/a'.	+
Accounting modalities	The NDC concisely describes the accounting approach for the land sector, including net-net accounting and links to the national greenhouse gas inventory.	The NDC briefly describes the net-net accounting approach and the approach for corresponding adjustments.	0
Explanation why the target is a fair contribution towards the global goal	The NDC refer to actions already taken and states that additional actions to achieve the 2025 target represents a substantial acceleration of the current pace of GHG emission reductions.	The NDC states that it exceeds the path required for a straight-line path to achieve net-zero emissions by 2050. It states that it is consistent with the Paris Agreement's temperature goal and would contribute substantially to the aim of achieving net-zero emissions in the second half of the century.	0

5.19 Viet Nam

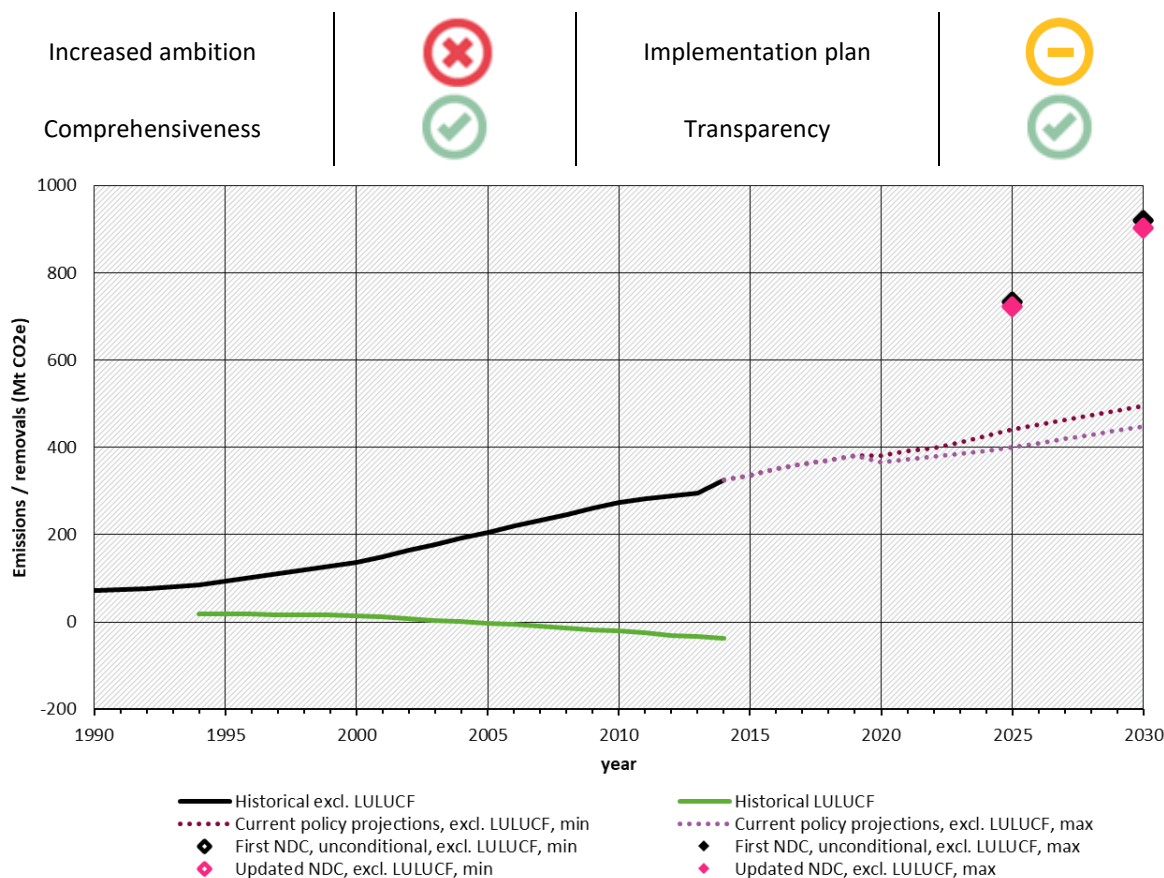
Viet Nam’s INDC, submitted in 2015 (Viet Nam Government, 2015), became its first NDC in November 2016 after Viet Nam ratified the Paris Agreement. Viet Nam submitted an updated NDC in December 2020 (Viet Nam Government, 2020).

While Viet Nam’s updated NDC is numerically stronger than the previous NDC, its unconditional and conditional targets can easily be met with current policies. The new NDC will not drive additional climate action in Viet Nam and can therefore not be considered to represent an increase in ambition.

In its updated NDC, the government commits to reducing economy-wide greenhouse gas emissions by 9% by 2030, compared to a business-as-usual reference level; and a conditional target to increase this to 27%. Under the previous NDC, Viet Nam proposed reductions of 8% and 25%, respectively. However, current policy projections show that Viet Nam is likely to overachieve its unconditional *and* conditional target by a wide margin (Climate Action Tracker, 2020v).

The NDC target is not enshrined in national law but various regulations and policy documents providing for the implementation of measures are outlined in the updated NDC. Viet Nam’s updated NDC is comprehensive as it covers all sectors and the main greenhouse gases CO₂, CH₄, N₂O and HFCs. It includes a mitigation and an adaptation component. The NDC provides the information to facilitate clarity, understanding and transparency, as laid out in decision 4/CMA.1, although not in a tabular format.

Figure 24: Viet Nam: Overview evaluation and greenhouse gas emissions



Source: Own illustration, NewClimate Institute & Öko-Institut. The greenhouse gas emissions timeseries are based on the Climate Action Tracker (2020u, 2020v).

5.19.1 Scope

Table 110: Viet Nam: Scope

Element	First NDC	New NDC	Change
Mitigation	<p>The first NDC contains information on Viet Nam’s conditional and unconditional mitigation targets, coverage, scope, baseline emissions and planning process. However, the mitigation target and baseline emissions (BAU by 2030) exclude emissions from industrial processes.</p> <p>The NDC does not provide information on sectoral emissions or sectoral contributions to the 2030 target.</p> <p>The first NDC contains no reference to a net-zero or other long-term target.</p>	<p>The updated NDC contains information on the same aspects as the first NDC, but generally provides more detailed information. Specifically, the NDC includes the contribution that each economic sector is to make to the 2030 target.</p> <p>The NDC includes slightly more ambitious targets than the previous NDC and now covers all economic sectors, including industrial processes. Further, the updated NDC’s baseline scenario includes emissions from industrial processes.</p> <p>The updated NDC contains no reference to a net-zero or other long-term target.</p>	We do not evaluate change between NDCs here, but rather in the following sections.
Adaptation	<p>The NDC provides information on the climate change risks and impacts in Viet Nam. The NDC lists a number of policy documents that outline adaptation measures until 2020. In addition, the NDC outlines twenty adaptation actions for the period 2021-2030. These can be categorised in the following three overarching goals:</p> <ol style="list-style-type: none"> 1. Respond pro-actively to disasters and improve climate monitoring; 2. Ensure social security; 3. Respond to sea level rise and urban inundation. <p>Further, the NDC provides key indicators against which the government will evaluate the adaptation activities. These include that the average national poverty rate is decreased by 2% annually; and that 100% of offshore fishing boats and ships have sufficient communication equipment. Finally, the NDC states that Viet Nam’s National Communications and Biennial Update Reports will reflect the monitoring and evaluation of the NDC’s adaptation component.</p>	<p>Viet Nam’s updated NDC outlines projections of climate change in Viet Nam towards 2100 and provides extensive information on the risks and potential impacts of climate change in the country. The NDC gives information on existing adaptation policies and the efforts Viet Nam has undertaken to date.</p> <p>Further, the updated NDC identifies strategic tasks for climate change adaptation:</p> <ol style="list-style-type: none"> 1. Improve adaptation efficiency through strengthening state management and resources; 2. Enhance resiliency and adaptative capacity of communities, economic sectors, and ecosystems; 3. Reduce disaster risks and minimise damage, and increase preparedness to respond to increasing natural disasters and climate extremes. <p>The NDC provides more detailed information on each of these strategic tasks.</p>	+

Element	First NDC	New NDC	Change
		<p>The NDC also identifies gaps and needs for enhancing climate change adaptation.</p> <p>The NDC outlines co-benefits between mitigation and adaptation actions. Actions in agriculture and rural development, which lead to afforestation and reforestation, are the adaptation activities with the highest co-benefits for mitigation.</p>	
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	<p>The NDC includes a conditional and an unconditional mitigation component. The former can only be implemented if Viet Nam receives new and additional financial support, technology transfer and capacity building. The NDC provides that Viet Nam's state resources can only meet 30% of adaptation needs; and that the government will seek private sector investments and international support for the remainder.</p>	<p>The NDC states that to reach Viet Nam's goal of reducing greenhouse gas emissions by 9% below BAU by 2030, an initial investment of USD 24.7 billion is needed.</p> <p>The NDC lists measures to mobilise more financial resources for mitigation activities, for instance to accelerate progress in developing and applying financial instruments such as green bonds and green investment funds.</p> <p>The NDC provides that state resources can only meet 30% of the budget necessary for the proposed adaptation measures. The government estimates that it needs to mobilise USD 35 billion for adaptation activities in the period 2021-2030.</p> <p>Further, the NDC provides a comprehensive overview of the various sources for climate finance (state expenditure, including official development assistance, the Green Climate Fund and the Global Environment Facility, private sector investments etc.).</p>	+
Technology transfer and capacity building	<p>The NDC includes a conditional and an unconditional mitigation component. The former can only be implemented if Viet Nam receives new and additional financial support, technology transfer and capacity building. The NDC also outlines in what areas it needs technical assistance to achieve its adaptation component.</p>	<p>Viet Nam's updated NDC provides no information on technology transfer and capacity building needs. It states that the government will develop an enhanced transparency framework to monitor and evaluate the mobilisation of resources domestically. Collecting information on this will help the government to develop monitoring</p>	(-)

Element	First NDC	New NDC	Change
		systems for technology transfer and capacity building.	

5.19.2 Mitigation ambition

Table 111: Viet Nam: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Reduction of greenhouse gas emissions (excl. industrial processes) by 8% by 2030, compared to BAU levels. Subject to international support, Vietnam can increase its target to a 25% reduction by 2030, compared to BAU levels.	Reduction of greenhouse gas emissions (incl. industrial processes) by 9% by 2030, compared to BAU levels. The NDC also includes that, conditional on international support, the target can be increased to a 27% reduction by 2030, compared to BAU levels.	0
Resulting emission level in 2030, excl. LULUCF	Unconditional target: 919 MtCO _{2e} ; Conditional target: 827 MtCO _{2e} . While excluded from the NDC and the BAU scenario, emissions from industrial processes are included in the calculation of this emission's level (Climate Action Tracker, 2019).	Unconditional target: 903 MtCO _{2e} ; Conditional target: 748 MtCO _{2e} (Climate Action Tracker, 2020v).	+
Conditionality	Subject to international support, Vietnam can increase its unconditional target to a 25% reduction by 2030, compared to BAU levels.	The NDC includes that, conditional on international support, the unconditional target can be increased to a 27% reduction by 2030, compared to BAU levels.	+
Need for new policies to meet the target	Current policy projections show that Viet Nam is likely to easily achieve its unconditional and conditional NDC targets. These projections show that Viet Nam's emissions will be 448-496 MtCO _{2e} by 2030, whereas the conditional target is at 748 MtCO _{2e} by that year (Climate Action Tracker, 2019).	Current policy projections show that Viet Nam is likely to easily achieve its updated unconditional and conditional NDC targets (Climate Action Tracker, 2020v).	We do not provide an assessment of the change between NDCs for this element.
LULUCF and removals	The first NDC target covers emissions from the LULUCF sector; and the business-as-usual scenario includes emissions from that sector. The NDC states that Viet Nam will enhance carbon sinks in the	The updated NDC covers emissions from the LULUCF sector. The NDC provides the reduction contribution of all economic sectors to the unconditional and conditional mitigation targets. The LULUCF sector is to contribute to	?

Element	First NDC	New NDC	Change
	LULUCF sector. The unconditional target of reducing GHG emissions by 8% below BAU levels includes the target of increasing the forest cover to 45% by 2030. Further details on LULUCF and removals are not provided.	the unconditional target with a reduction of 9.3 MtCO ₂ e by 2030. Its contribution to the conditional target may be an additional 11.9 MtCO ₂ e by 2030.	
Net-zero target	Not included in the NDC.	Not included in the NDC. Viet Nam has also not submitted a long-term strategy to the UNFCCC.	0
Alignment of NDC with long-term target/net-zero target	Not applicable.	Not applicable.	0
Intended use of Article 6	The NDC provides that Viet Nam may increase its emission reduction target from 8% to 25% below BAU levels by 2030, “if international support is received through bilateral and multilateral cooperation, as well as through the implementation of new mechanisms under the Global Climate Agreement [...]”	The new NDC indicates that Viet Nam can achieve its conditional target though the use of market and non-market mechanisms under Article 6 – in addition to other sources of financial support. However, detailed information such as the share of the contributions from these mechanisms is not provided.	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	0
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	0

5.19.3 Mitigation completeness

Table 112: Viet Nam: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	The first NDC covers the following four economic sectors: <ul style="list-style-type: none"> ▶ Energy ▶ Agriculture ▶ Waste ▶ Land use, land use change, and forestry (LULUCF) 	The new NDC covers all economic sectors: <ul style="list-style-type: none"> ▶ Energy ▶ Industrial processes and product use (IPPU) ▶ Agriculture ▶ Waste 	+

Element	First NDC	New NDC	Change
		<ul style="list-style-type: none"> ▶ Land use, land use change, and forestry (LULUCF) 	
Gas coverage	<p>The first NDC covers:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs ▶ PFCs ▶ SF₆ 	<p>The new NDC covers fewer gases than the first NDC:</p> <ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ HFCs 	(-)

5.19.4 Mitigation implementation

Table 113: Viet Nam: Mitigation implementation


Element	First NDC	New NDC	Change
Sectoral targets	Not included in the NDC.	The new NDC provides an overview of the sectoral contributions to the unconditional and conditional NDC targets.	+
NDC preparation process	The NDC includes limited information on the preparation process. It states that various line ministries, non-governmental organisations, research institutions, business sector representatives and international development partners were involved.	The Ministry of Natural Resources and Environment led the NDC review and update process; the Prime Minister gave instructions. An inter-sectoral working group, which consisted of representatives from the Ministry of Natural Resources and Environment, the Department of Climate Change, Advisory Council of the NCCC and ministries and sectors, provided technical support. Further, scientists, ministries, sectors, localities, NGOs, research agencies, enterprises and international development partners contributed to the NDC review and update process through consultation workshops.	+
Clarity of national and sectoral implementation plans	The NDC gives an overview of the existing regulations and policies that will support NDC implementation. Further, the NDC outlines a list of 29 measures that the government will implement to achieve the NDC. These relate to e.g. strengthening the leading role of the state in responding to climate change; improving effectiveness and efficiency of	Similarly to the first NDC, Viet Nam's updated NDC provides an overview of the existing policy framework for climate action. Also, the updated NDC outlines measures to be taken in the various sectors but does not provide detailed information. For instance, in the energy sector, Viet Nam will "apply energy efficiency measures in industries." The	+

Element	First NDC	New NDC	Change
	energy use; changing the fuel structure in industry and transportation; and reducing GHG emissions through the development of sustainable agriculture. More specific details are missing.	government will assess mitigation efforts every two years, and cross-check progress through the biennial GHG inventory at national and sectoral levels. Further, the NDC provides that the government will develop and improve policies and institutions, and outlines responsibilities for NDC implementation, as well as information on the budget for climate action.	
National climate law(s)	Not included in the NDC.	The NDC does not clearly specify whether the updated mitigation target is enshrined in national law. The NDC states that the Law on Environment Protection “specifies the responsibilities of organisations and institutions in response to climate change in general and in the implementation of the updated NDC in particular.”	?

5.19.5 Transparency

Table 114: Viet Nam: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate emissions level of target	The first NDC provides estimated BAU emissions by 2030, but these exclude emissions from industrial processes. The NDC provides no information on the expected LULUCF trajectory, or on the sectoral contributions to the 2030 target.	The updated NDC provides estimated BAU emissions, which include all economic sectors. Further, the NDC provides a breakdown of the contribution of the various sectors, which makes it easier to estimate the resulting emissions level excluding LULUCF. However, the NDC provides no information on the expected LULUCF trajectory.	+
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable.	Viet Nam has followed the guidance and provides the information throughout the NDC, but not in tabular format.	+
Accounting modalities	The updated NDC includes information on GHG emissions in 2010 (the latest year of the	The updated NDC provides historical GHG emissions in 2014 – the latest available historical data.	+

Element	First NDC	New NDC	Change
	<p>national GHG inventory) and includes projections for 2020 and 2030. These projections exclude industrial processes.</p> <p>The first NDC gives information on the metric applied (AR4) and methodologies to estimate GHG emissions and data (IPCC guidelines and the national statistics, national socio-economic development plan and sectoral activity data).</p> <p>The NDC provides no information on the trajectory of LULUCF emissions and does not include a breakdown of sectoral contributions to the 2030 target.</p>	<p>The NDC also contains GHG projections for 2020, 2025 and 2030. Unlike in the previous NDC, these projections include all economic sectors.</p> <p>The NDC provides information on the metric applied (AR4) and methodologies to estimate GHG emissions and data (IPCC guidelines and the national statistics, national socio-economic development plan and sectoral activity data).</p> <p>The NDC outlines sectoral contributions to the conditional and unconditional targets. It also provides information on the contribution of the LULUCF sector to the 2030 target and the projected LULUCF trajectory until 2030.</p>	
<p>Explanation why the target is a fair contribution towards the global goal</p>	<p>Viet Nam considers its contribution to be fair, ambitious, feasible and achievable. The NDC states that Viet Nam is a developing country and highly affected by climate change. Although its emissions accounted for approximately 0.5% of the global total in 2010, Viet Nam is proactively implementing climate change response activities, across economic sectors.</p>	<p>The explanation is the same as in the first NDC. Viet Nam also states that compared to the previous NDC, it significantly increased the contribution of its mitigation component.</p>	

5.20 Zambia

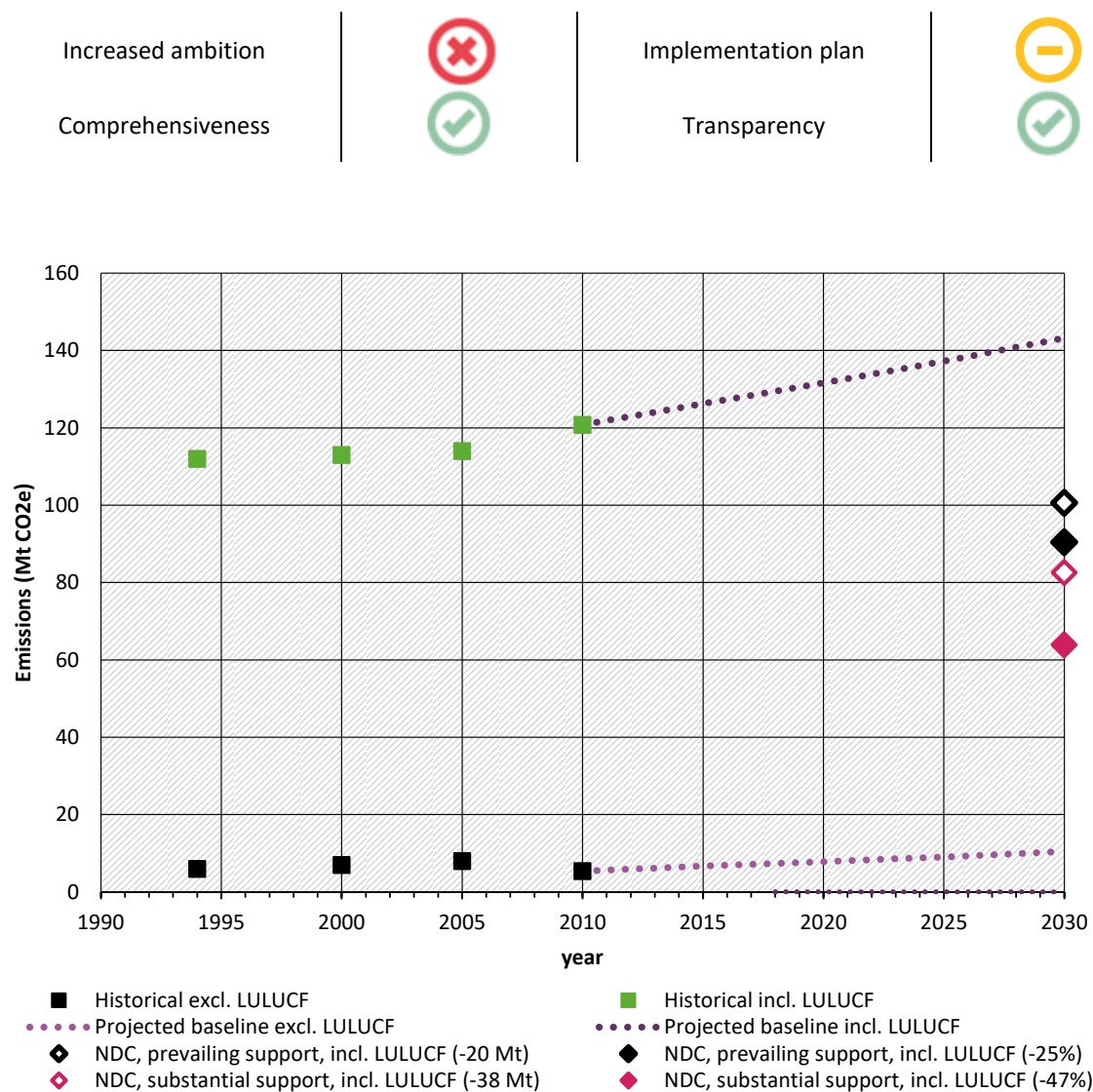
Zambia's INDC, submitted in 2015 (Government of the Republic of Zambia, 2015), became its first NDC in December 2016, after it ratified the Paris Agreement. Zambia submitted an updated NDC in December 2020 (Government of the Republic of Zambia, 2020b).

Zambia pledges to reduce its GHG emissions by 25% (20 MtCO₂e), conditional upon limited international support, or 47% (38 MtCO₂e) conditional upon substantial international support by 2030 against a base year of 2010. As these numbers remain unchanged compared to the first NDC, and no updated base year or baseline projection data are available, the updated NDC does not imply an increase in ambition compared to the initial NDC. However, the scope is more comprehensive. The transparency of the NDC has also increased, as Zambia has provided more detailed information on methodologies and assumptions underlying the NDC. Nevertheless, there is ambiguity in the information provided with regard to the resulting emission level, both in the first and in the updated NDC.

In its initial NDC, Zambia outlined three main programmes with regards to sustainable forest management, sustainable agriculture and renewable energy and energy efficiency, comprising various policies and measures as a means to implement the envisaged mitigation. Information on policies and measures to implement the target is missing in the updated NDC. Overall, the information on implementation is comparable to the initial NDC.

Zambia's NDC includes a contribution on adaptation (3 goals/programmes and 13 priority actions) but it is stressed that this does not constitute an obligation to the country. The implementation depends upon international support. Synergies with mitigation actions are emphasized. The information provided on adaptation is similar in the initial and the updated NDC.

Figure 25: Zambia: Overview evaluation and greenhouse gas emissions



Note: The first and in the updated NDC include the same NDC targets. They are provided alternatively as percentage reduction and as absolute reduction (see section 5.20.1 for further information). The percentage reductions and the absolute reductions result in different target levels for 2030.

Source: Own illustration, NewClimate Institute & Öko-Institut with data from Zambia’s Third National (Government of the Republic of Zambia, 2020a) and its first and updated NDCs (Government of the Republic of Zambia, 2015, 2020b).

5.20.1 Scope

Table 115: Zambia: Scope

Element	First NDC	New NDC	Change
Mitigation	Zambia intends to reduce its GHG emissions by implementing three programmes with regards to sustainable forest management, sustainable agriculture and renewable energy and energy efficiency, comprising several policies and measures. These	Zambia submitted a pledge of reducing GHG emissions by 25% (20 MtCO ₂ e) conditional upon limited international support or 47% (38 MtCO ₂ e) conditional upon substantial international support by 2030 against a base year of 2010.	We do not evaluate change between NDCs here, but rather in the

Element	First NDC	New NDC	Change
	programmes are driven by the country's Climate Response Strategy and supported by national development policies. The overall effect of these programmes/policies and measures is quantified. The NDC does not refer to a net-zero or long-term target.	The NDC does not refer to a net-zero or long-term target.	following sections.
Adaptation	A contribution on adaptation (3 goals/programmes and 11 priority actions) is formulated but it is stressed that this does not constitute an obligation to the country. The implementation depends upon international support. Synergies with mitigation actions are emphasised.	A contribution on adaptation (3 goals/programmes and 13 priority actions) is formulated but it is stressed that this does not constitute an obligation to the country. The implementation depends upon international support. Synergies with mitigation actions are emphasised. It is stated that the adaptation component is further elaborated by developing indicators that will enable the country to track progress on implementing the envisaged measures. These indicators are however not included in the NDC.	0
Economic diversification	Not included in the NDC.	Not included in the NDC.	0
Financing	It is stated that over USD 50 billion is required for mitigation (USD 35 billion) and adaptation (USD 20 billion) until 2030. USD 15 billion will be provided by the Zambian Government and USD 35 billion will be needed as international support in the form of finance, investment, technology development and transfer and capacity-building to fully implement the NDC.	It is stated that the implementation of the NDC is conditional upon international support. The amount or type of support needed is not specified.	(-)
Technology transfer and capacity building	It is stated that over USD 50 billion is required for mitigation (USD 35 billion) and adaptation (USD 20 billion) until 2030. USD 15 billion will be provided by the Zambian Government and USD 35 billion will be needed as international support in the form of finance, investment, technology development and transfer and capacity-building for implementing the NDC fully.	It is stated that the implementation of the NDC is conditional upon international support. The amount or type of support needed is not specified.	(-)

5.20.2 Mitigation ambition

Table 116: Zambia: Mitigation ambition

Element	First NDC	New NDC	Change
Country's formulation of the target	Zambia intends to reduce its GHG emissions by implementing three programmes with regards to sustainable forest management, sustainable agriculture and renewable energy and energy efficiency, comprising several policies and measures. These programmes are driven by the country's Climate Response Strategy and supported by national development policies. The implementation of these programmes/policies is estimated to lead to emission reductions of 25% (unconditional) and 47% compared to 2010 (20 MtCO ₂ eq and 38 MtCO ₂ eq).	Zambia is committed to reduce its GHG emissions by 25% conditional upon limited international support and 47% conditional upon substantial international support) by 2030 compared to 2010 levels. Hence, the updated NDCs contains an explicit emissions reduction target. In addition to the percentage reduction, the first and the updated NDC also provide an absolute reduction (20 MtCO ₂ e and 38 Mt CO ₂ e, respectively). However, subtracting 20 MtCO ₂ e from the 2010 level (121 MtCO ₂ e) does not result in the same target level as reducing this level by 25 %. Likewise, subtracting 38 Mt CO ₂ e from the 2010 level does not result in the same target level as reducing this level by 47 %. Hence, there seems to be a discrepancy between the targets expressed in MtCO ₂ e and the targets expressed in percent.	+
Resulting emission level in 2030, excl. LULUCF	The NDC does not provide enough information to estimate the resulting emission level in 2030.	The NDC does not provide enough information to estimate the resulting emission level excluding LULUCF.	?
Conditionality	The NDC states that the intended emission reduction is conditional to the availability of international support in the form of finance, technology and capacity-building (USD 35 billion by 2030).	The NDC states that the implementation of the NDC is conditional upon international support. The total amount is not specified.	?
Need for new policies to meet the target	The NDC does not provide detailed information on projections for individual policies. The target consists of the implementation of the described programmes, policies and measures. These measures seem to be rooted in various existing national strategies, plans and other policy instruments. Additionally, future plans regarding the institutional and regulatory framework for implementing the	Information on current policies projections is not available. Information on policies and measures to implement the target is not provided.	We do not provide an assessment of the change between NDCs for this element.

Element	First NDC	New NDC	Change
	programmes are described in the NDC.		
LULUCF and removals	The LULUCF sector is part of the target; one of the three programmes addresses sustainable forest management and outlines a number of measures for the forestry sector. The impact of these measures is not quantified.	The LULUCF (AFOLU) sector is part of the target, and the inventory categories covered by the target are described. However, the NDC does not include specific information on measures envisaged in the LULUCF sector.	?
Net-zero target	Not included in the NDC.	Not included in the NDC. No long-term strategy has been submitted to the UNFCCC.	○
Alignment of NDC with long-term target/net-zero target	Not included in the NDC.	Not included in the NDC.	○
Intended use of Article 6	Zambia does not rule out the possibility of using market-based mechanisms in meeting its emission reduction targets.	Zambia intends to use voluntary cooperation under Article 6 of the Paris Agreement to fulfil parts of its target. Zambia stated that it will account for its cooperation with the European Union in a manner consistent with the guidance adopted by CMA and further guidance agreed by CMA. (It should be noted that according to EU's NDC, the EU does not intend to engage in voluntary cooperation under Article 6.)	?
Explicit consideration of cost reductions of renewables during the last 5 years	Not included in the NDC.	Not included in the NDC.	○
Consideration of ambition of subnational and non-state actors	Not included in the NDC.	Not included in the NDC.	○

5.20.3 Mitigation completeness

Table 117: Zambia: Mitigation completeness

Element	First NDC	New NDC	Change
Sector coverage	<ul style="list-style-type: none"> ▶ Energy ▶ Agriculture 	<ul style="list-style-type: none"> ▶ Energy 	+

Element	First NDC	New NDC	Change
	<ul style="list-style-type: none"> ▶ Waste (yet not covered by programmes/measures) ▶ LULUCF 	<ul style="list-style-type: none"> ▶ Industrial processes and product use (IPPU) ▶ AFOLU ▶ Waste <p>The NDC notes that Zambia broadens the scope of sectors covered by adding transport, liquid waste and coal (production, transportation, and consumption).</p>	
Gas coverage	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O 	<ul style="list-style-type: none"> ▶ CO₂ ▶ CH₄ ▶ N₂O ▶ PFCs ▶ HFCs ▶ SF₆ 	+

5.20.4 Mitigation implementation

Table 118: Zambia: Mitigation implementation

Element	First NDC	New NDC	Change
Sectoral targets	The NDC comprises 3 programmes including a number of policies and measures in the area of sustainable forest management, sustainable agriculture and renewable energy and energy efficiency. It states that the NDC covers 4 sectors (energy, agriculture, waste and LULUCF). Detailed information on sectoral plans is not provided.	The NDC indicates that a quantitative analysis of sectoral targets is currently under review. The target is now formulated as an economy-wide reduction target and contributions/measures for specific sectors are not described.	?
NDC preparation process	Not included in the NDC.	Not included in the NDC.	0
Clarity of national and sectoral implementation plans	No detailed information on sectoral implementation plans is provided. However, the programmes and related measures described in the NDC seem to be rooted in various existing national strategies, plans and other policy instruments. Additionally, future plans regarding the institutional and regulatory framework for implementing the programmes are described in the NDC: it states that the programmes will be integrated in the 7 th	No detailed information on sectoral implementation plans is provided. The NDC refers to different strategies, plans and policy instruments which the contribution is linked to. Information on institutional arrangements for implementing the NDC is provided. Only vague information is provided on how to track progress of implementing the NDC through national MRV systems.	0

Element	First NDC	New NDC	Change
	National Development Plan, planning will be integrated in existing planning processes and will be supported by national budget allocations to relevant authorities. A process is underway to establish a National Climate Change Development Council which will be responsible for climate change coordination in the country. Only vague information is provided on how to track progress of implementing the NDC through national MRV systems.		
National climate law(s)	Not included in the NDC.	Not included in the NDC.	0

5.20.5 Transparency

Table 119: Zambia: Transparency

Element	First NDC	New NDC	Change
Availability of information to estimate resulting emissions level of target	The NDC indicates the overall migration effect of the envisaged programmes and measures. However, not all information to estimate the resulting emissions level of the target is available. The following information is missing: <ul style="list-style-type: none"> ▶ Detailed information on individual measures; ▶ Information on applied methodologies for estimate the effects of measures; ▶ Information on base year emissions. 	Information to estimate the resulting emission level of the target is provided (base year emissions and emissions reduction). However, there is a discrepancy between the percentage emissions reduction and the absolute emissions reduction. The absolute emissions reduction would result in a higher target level than the percentage emissions. Such a discrepancy exists both for the target 'with limited support' and for the target 'with substantial support'.	?
Followed the guidance in information to facilitate clarity, transparency and understanding of NDCs in Decision 4/CMA.1	Not applicable. Concise information is provided in textual and tabular format. However, a detailed description of the intended policies or detailed information on the methodologies for estimating their effects are not provided.	Comprehensive information on assumptions, methods and planning process are available in tabular format.	+

Element	First NDC	New NDC	Change
Accounting modalities	Concise information on accounting modalities is provided in textual and tabular format.	Detailed information on accounting modalities is included in tabular format.	+
Explanation why the target is a fair contribution towards the global goal	Zambia considers the NDC as fair and ambitious enough to contribute to a low carbon and climate resilient economy by 2030 in accordance with special national circumstances and the desire to become a high middle income and prosperous nation by 2030. It is stated that Zambia is a low contributor to global greenhouse gas emissions. The NDC refers to the principles of the Convention, particularly the common but differentiated responsibilities and respective capabilities (CBDR) and equitable access to the atmospheric space. The country is committed to meeting its obligations under the Convention by implementing ambitious mitigation and adaptation programmes across the prioritized sectors.	Zambia considers the NDC as fair and ambitious enough to contribute to a low carbon and climate resilient economy by 2030 in accordance with special national circumstances and the desire to become a high middle income and prosperous nation by 2030. It is stated that Zambia is a low contributor to global greenhouse gas emissions. The NDC refers to the principles of the Convention, particularly the common but differentiated responsibilities and respective capabilities (CBDR) and equitable access to the atmospheric space. Zambia considers that its NDC represents a fair share of the efforts to achieve the global long-term goal of the Paris Agreement.	0

6 Results and recommendations

We developed a methodology that is comprehensive, concise and replicable to provide a nuanced perspective of the ambition, endeavours and orientation of countries' climate action. The methodology allows for a comparison between countries' updated NDCs. A detailed description of the methodology provides maximum transparency and allows others to systematically analyse additional NDCs.

We have analysed 20 NDCs. The country selection is a non-representative sample but it includes a wide geographic selection and various types of NDCs. From the analysed sample, we find that most countries' NDCs are comprehensive and transparent. While it is very important to provide the information to facilitate clarity, transparency and understanding, even if not yet mandatory, the collective effort of the NDCs does not lead to achievement of the Paris Agreement temperature goal if parties do not increase their mitigation ambition. We find that more than half of the analysed countries have failed to clearly increase their mitigation ambition in their most recent NDC submissions. In addition, many countries lack a plan to implement the targets. Main messages for each of the analysed NDCs can be found in Table 120.

6.1 Main results

Main results include:

- ▶ Eight of the analysed countries (i.e. Argentina, Cambodia, Colombia, the European Union, Jamaica, Rwanda, the United Kingdom and the United States of America) have submitted NDC targets that result in greater domestic greenhouse gas emission reductions by 2030 compared with their previous NDC and that are not yet achievable with their “current policies”.
- ▶ The remaining 12 countries have either submitted the same target (i.e. Australia, Zambia, Republic of Korea), a weaker target (i.e. Mexico, Brazil), a target that is nominally stronger than their first NDC but can be achieved without additional policies (i.e. Viet Nam, Kenya, Russian Federation), or a target that is not possible to be quantified as an emissions limit due to missing information (i.e. Nepal, Panama, Republic of Moldova, Tonga).
- ▶ From the 20 analysed countries, Argentina and the United Kingdom were rated “fulfilled” for all four elements. Five countries fulfilled three of the four elements, seven fulfilled two and six fulfilled only one element.
- ▶ Most of the analysed NDCs were comprehensive covering all relevant greenhouse gases and sectors. Countries like Tonga, Rwanda, Panama and Nepal decided not to cover some sectors for which limited information was available only.
- ▶ Most analysed NDCs provided the required information to facilitate clarity, transparency and understanding. However, in a few cases some details were missing.
- ▶ Regarding the NDC's implementation plan, in many cases, the targets and measures have not yet been included in national legislation, but preparations are underway, especially for countries that updated their targets.

The analysis shows that countries take different approaches to national implementation of the NDCs. Some focus on fixing the overall targets in national law. Others ensure action by distributing the responsibilities to individual sectors or actions without a framework law. Both approaches can lead to the desired outcomes.

We also observe that sustainable development benefits and their interactions with mitigation measures are better understood and reported by countries compared to previous NDCs. Several countries included adaptation elements in their NDCs and pointed out the co-benefits of adaptation actions.

Table 120: Main messages for each of the analysed NDCs

Party	Main message
Argentina	Argentina is one of two countries that fulfilled all four elements. However, some details relating to the accounting of LULUCF emissions are not provided in the second NDC.
Australia	Australia's updated NDC contains the same target as the first NDC, hence it did not increase its mitigation ambition. Most of the details to facilitate transparency are included, but details on implementation are not included.
Brazil	Brazil's updated NDC contains the same percentage reduction as the first NDC, but it is less ambitious because base year emissions have been corrected upward compared to the first NDC. The NDC is comprehensive but no details on the implementation of the target is provided.
Cambodia	Cambodia pledged greater emission reductions in its updated NDC; however, some open questions remain relating to implementation and transparency.
Colombia	Colombia increased its mitigation ambition, transparency, and comprehensiveness in its updated NDC. Colombia now commits unconditionally to higher emissions reductions. While the target is not yet included in national legislation, plans are well underway.
European Union	The EU increased its mitigation ambition from a –40% emissions reduction to a –55% reduction. This new target was recently enshrined in EU legislation, but some questions relating to accounting modalities remain.
Jamaica	Jamaica extended the scope and ambition of its NDC; however, it does not yet cover all sectors.
Kenya	Kenya's updated NDC target is slightly more ambitious than its previous submission, but still above current policy projections. It therefore does not represent an increase in mitigation ambition. While its previous target was fully conditional to international support, the new NDC states that 21% of the costs will be borne domestically.
Mexico	Mexico's updated NDC is less ambitious – while the targets remain the same, the baseline scenario has been revised upwards leading to a higher emissions level in 2030. Unlike the first NDC, it no longer contains sectoral targets.
Nepal	Nepal's second NDC is comprehensive and includes more information regarding sectoral targets; however, some details are still missing.
Panama	Panama's updated NDC covers two main sectors and includes an implementation plan, but not enough information is available to judge whether the updated NDC constitutes an increase in ambition.

Party	Main message
Republic of Korea	The Republic of Korea's updated NDC target is the same as the target of its first NDC, when expressed in terms of an absolute emissions limit. Hence it did not increase mitigation ambition ³¹ . The NDC is comprehensive and information on implementation is provided.
Republic of Moldova	The Republic of Moldova pledged slightly higher emissions reductions in its updated NDC. However, it cannot be judged whether the NDC constitutes and increase in ambition because of various methodological updates which have taken place since the first NDC was communicated.
Russian Federation	The Russian Federation's first NDC results in slightly lower emissions levels in 2030 but it is not more ambitious than their INDC, as the target can still be reached without additional policies.
Rwanda	Rwanda's updated NDC is more ambitious and transparent than its first NDC. While Rwanda had previously not specified a reduction target and a baseline, it now sets an overall emissions reduction target for 2030 with unconditional and conditional components.
Tonga	Tonga's second NDC introduced a new sectoral emissions target, which cannot be compared directly to the first NDC. The NDC covers the energy sector only; it provides information on implementation for several sectors.
The United Kingdom	The United Kingdom is one of two countries that fulfilled all four elements. The government submitted a more ambitious mitigation target. Its NDC is comprehensive and transparently described, and the framework for its implementation is in place.
United States of America	The NDC submitted by the USA in 2021 constitutes an increase in ambition, as the annual emissions reductions required to meet the new target are considerably higher compared to the original target. However, details on implementation are still open.
Viet Nam	Viet Nam's updated NDC is numerically stronger than the previous NDC. However, it is not more ambitious as both its unconditional and conditional targets can be met without additional policies. The updated NDC covers all sectors and the main greenhouse gases.
Zambia	Zambia's updated NDC does not constitute an increase in ambition, as the pledged emissions reductions remain unchanged compared to the first NDC. Zambia increased the coverage of gases in its NDC and provided comprehensive information relating to transparency.

6.2 Possible next steps

The following steps may help improve the design and implementation of NDCs.

- **Support data gathering:** Smaller developing countries still face challenges in providing sufficient data to prepare mitigation strategies and targets for all sectors. International support is needed to help them generate this data.

³¹ The updated NDC provides that "the Korean government will seriously consider raising ambition level in its NDC before 2025." (Republic of Korea, 2020b). In May 2021, the president of the Republic of Korea announced that it plans to "raise its national greenhouse gas reductions targets for 2030" and present it at COP26 (planned for November 2021)(Hyun-woo, 2021b).

- ▶ **Support determination of financial needs:** Many countries have better understood and reported the financial support needed to implement ambitious mitigation action compared to previous NDCs. As support is vital for the success of the Paris Agreement, future support to NDC preparation could focus on this element.
- ▶ **Include translation step in official process:** Currently, governments can make their NDCs “look good” by fulfilling all requirements on comprehensiveness and transparency or by reformulating their target, but after translation of the targets to a common metric and deeper analysis, it can become clear that it is not more ambitious, or it lacks an implementation plan. To uncover such deficiencies and to make the ambition cycle of the Paris Agreement a success, a step of carefully checking and translating the NDCs to a common metric is necessary. This step is currently undertaken by independent research groups (like this project) but could be integrated more deeply into the official process under the UNFCCC. In the Global Stocktake under the Paris Agreement, input from countries is considered together with submissions from non-Party stakeholders and UNFCCC observer organisations (UNFCCC, 2019, paragraph 37). It will be critical for the Global Stocktake to make use of all input provided, to gain an accurate picture of current ambition levels and to point out the urgent need to further enhance action on climate change. The preparation for the first Global Stocktake started recently³² and guiding questions are under discussion. It will be important that the guiding questions on mitigation address ambition efforts, in addition to other aspects such as past and projected emission trends.

³² The following link leads to the Internet: <https://unfccc.int/topics/science/workstreams/global-stocktake>

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A Appendix: Further reading

A.1 Publications related to NDC ambition - main takeaways

Under the Paris Agreement, countries have to submit Nationally Determined Contributions (NDCs) at least every five years detailing their climate targets towards achieving the global temperature goal. Each NDC submission is to represent a progression beyond the previous one and reflect its highest possible ambition. Following the first submissions of (I)NDCs in 2015/2016, several analyses assessing the ambition of the 2030 pledges and ways how the ambition could be enhanced in subsequent rounds have been published. Here, we provide an overview of three main publications related to the (necessary) ambition of NDCs, namely the UNEP Emissions Gap Report (UNEP, 2018, 2019, 2020), the Guide to Strengthening National Climate Plans by 2020 (Fransen *et al.*, 2019), and the Next Steps under the Paris Agreement and Katowice Climate Package (GIZ, 2019).

Several main takeaways are common over the reviewed reports:

- ▶ **Huge emission gap:** Under full implementation of the currently submitted NDCs, global emissions would remain stable until 2030, while they would need to be cut in half to be in line with pathways compatible with limiting global temperature increase to 1.5°C by 2100.
- ▶ **Ownership for implementation:** During the enhancement process, governments need to ensure ownership and buy-in by all stakeholders, so that the new NDC has a high likelihood of being successfully implemented.
- ▶ **Targets and implementation:** The design of a new NDC needs to take into account the already implemented actions and a comparison of their aggregated effect with the already existing and potentially new NDCs.
- ▶ **Long-term objective:** The design of the new NDC requires the consideration of the long-term objectives of the country covering mitigation, but also resilience and other Sustainable Development Goals (SDGs). The NDC is only one step along the way to full decarbonisation and resilience.
- ▶ **Comprehensiveness:** The new NDCs need to consider mitigation, adaptation, finance and transparency.

We present a summary of the main components and outputs of each of the three reports in the following sections.

A.2 UNEP emissions gap report

The United Nations Environment Programme (UNEP) Emissions Gap Report is a yearly publication that assesses the gap between estimated future global greenhouse gas (GHG) emissions if countries implement their climate mitigation pledges (incl. NDCs) and the global emission levels from least-cost pathways that are aligned with achieving the Paris Agreement's temperature goals (UNEP, 2018, 2019, 2020).

The latest edition of the report—which includes assessment of COVID-19 impacts in emissions projections—finds an emissions gap of 32 GtCO₂e in 2030 between full implementation of unconditional NDCs and the below 1.5°C pathway (Figure Appendix A - 1). Global projections

based on current implemented policies are even higher than those based on NDC unconditional and conditional pledges in 2030.

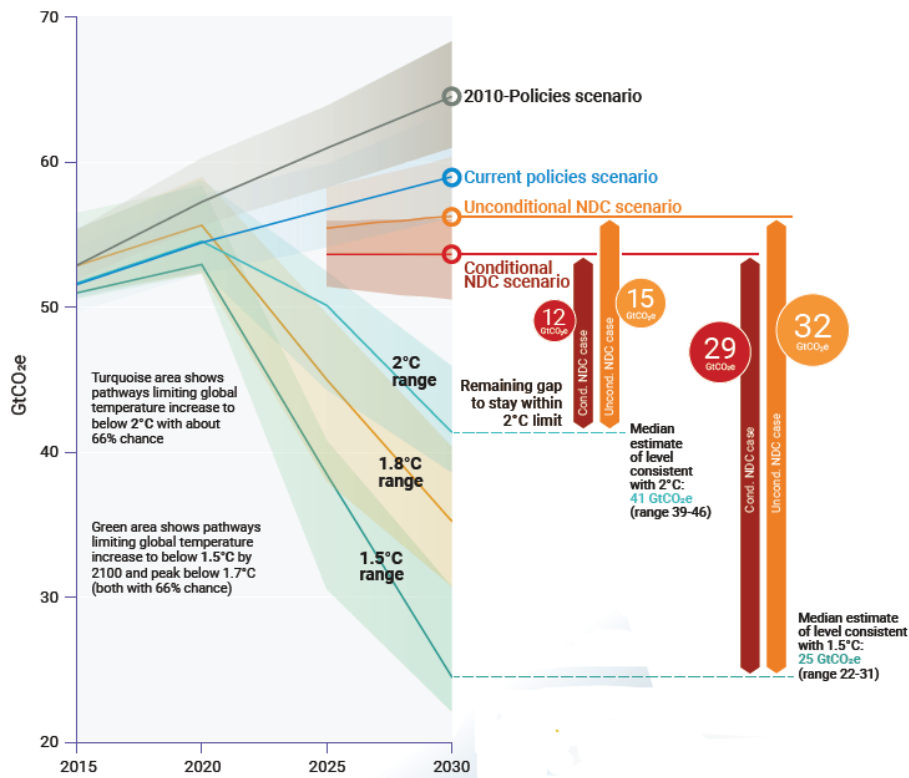
The report finds that G20 members (including EU27+UK), which account for 78% of global emissions, are collectively not on track to meet their unconditional NDCs with current policies. A gap between current policies and NDC scenarios of around 3 GtCO_{2e} remains (Figure Appendix A - 1). To close the gap, G20 members need to collectively reduce their emissions by 0.3 GtCO_{2e} per year by 2030 or even by 2.4 GtCO_{2e} per year to reach their conditional targets.

Besides not being on track to meeting their unconditional NDC targets, the countries' NDCs also fall short of alignment with the Paris goals. In the most optimistic scenario, where it is assumed that India, Russia and Turkey will overachieve the targets presented in their NDCs, there would still be a gap of 32 GtCO_{2e} in 2030 between unconditional NDC scenarios and a Paris-aligned pathway to limit global warming to 1.5°C (Figure Appendix A - 1). New and updated NDC targets, which had not been submitted by any G20 member by the time of the publication of this report, need to reflect larger ambition as well as better coordination with long-term strategies (LTS), which had only been submitted by nine G20 members by 9 December 2020.

Yet, the projections vary significantly across countries. Nine countries are likely to achieve their targets (Argentina, China, EU27+UK, India, Japan, Mexico, the Russian Federation, South Africa and Turkey), with four of them (Argentina, India, the Russian Federation and Turkey) even expected to reach emission levels that are more than 14% lower than their respective NDC target levels. Five countries (Australia, Brazil, Canada, Republic of Korea and the USA) are unlikely to achieve their targets and another two are lacking information to make an assessment (Indonesia, Saudi Arabia). Not only the likelihood of achieving NDC targets but also the expected per capita emission levels differ between G20 members. While in India, for example, 2030 emissions are projected to be half of the G20 average, in Saudi Arabia they are projected at three times the average number.

The difficulties in achieving targets with existing policies, however, do not only depend on the strength and stringency of the existing climate policy packages but also on the ambition level of the targets, which are also based on structural factors such as demographics. Therefore, the nine countries that are projected to meet their targets do not necessarily have stronger mitigation ambitions than others.

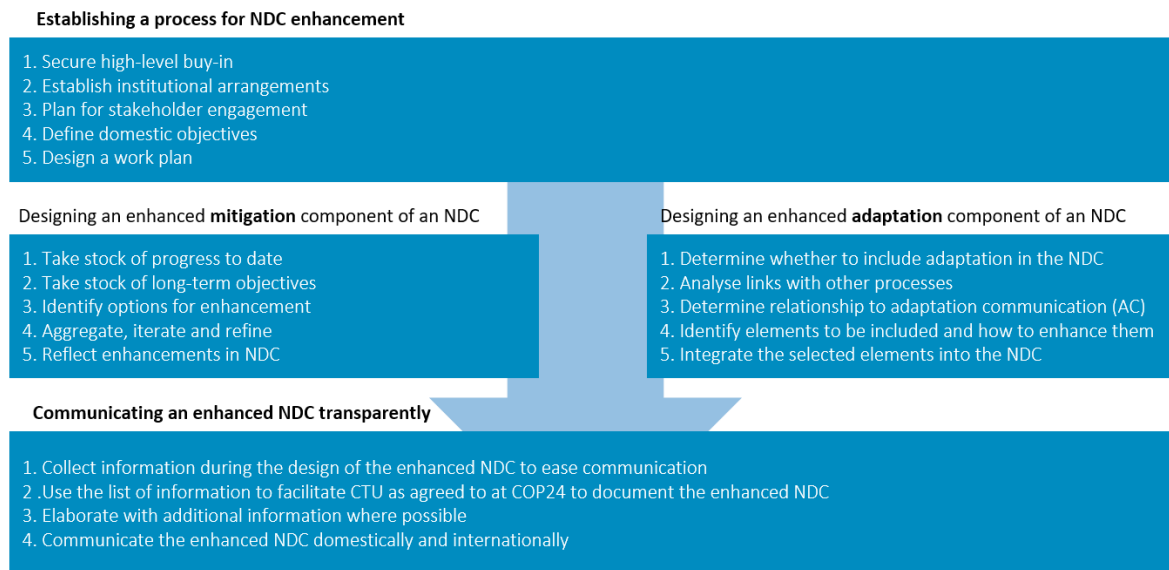
Figure Appendix A - 1: The Emission Gap based on different global GHG emissions scenarios



Source: (UNEP, 2020).

A.3 Guide to Strengthen National Climate Plans by 2020

WRI and the United Nations Development Programme (UNDP) provide guidance for country governments on the steps that can be taken to enhance the NDCs (Fransen *et al.*, 2019). The proposed process consists of four steps; preliminary considerations for the establishment of an NDC enhancement process, followed by robust mitigation and adaptation strategies, which then build up to advance transparent communication (Figure Appendix A - 2).

Figure Appendix A - 2: NDC Enhancement Process

Source: Own illustration, NewClimate Institute, based on (Fransen *et al.*, 2019).

Establishing a process for NDC enhancement

When establishing an NDC enhancement process, countries must first secure high-level buy-in of ministers and high-level offices which benefit NDC enhancement. Similarly, countries can benefit from coordinated arrangements with lead institutions and from alignment with development objectives and should therefore define institutional arrangements early on. A plan for early stakeholder engagement could prove central to gain support from the civil society, academia, private sector, etc. In addition, domestic enhancement objectives should be defined to assure a focus on key interventions such as driving action, directing finance or mainstreaming climate change. Lastly, a robust work plan, including roles and responsibilities, timelines, etc. is needed to advance the process.

Designing an enhanced mitigation component of an NDC

As a second step, countries should focus on the mitigation side of the NDC, which is essential to narrowing the gap and achieving the goals of the Paris Agreement. The steps to take to assure increased ambition start with taking stock of recent progress and of long-term objectives, spanning from GHG inventories or projections of sectoral indicators all the way to sectoral benchmarks or national development plans, with respect to the relevance in the country. Then diagnostic questions should be asked at sectoral and cross-sectoral level to identify and fill gaps in the NDC. This leads to a list of mitigation enhancement options that should be refined and its impacts aggregated in the next step. A plan on how to reflect enhancements in the NDC with regard to targets, policies and measures should then be determined.

Designing an enhanced adaptation component of an NDC

A third step would ideally be to enhance the adaptation side, although the inclusion of an adaptation strategy is voluntary in the NDC. Therefore, a country should first assess whether to include adaptation in the NDC by exploring its purposes. Once a decision is made, links with other processes that may allow for synergies shall be analysed, before going on to determine to which extent this adaptation component constitutes the adaptation communication. Going through this process aims to serve as the foundation to identify elements that should be included and how they can be enhanced, which can then be integrated into the NDC.

Communicating an enhanced NDC transparently

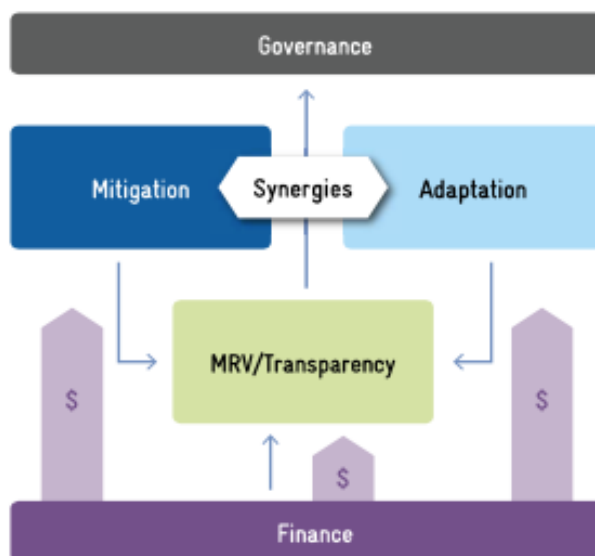
The considerations that were made in previous steps then serve to facilitate clarity and enhance transparency and understanding in the communication of the NDC. The goal here is to create better alignment with these elements with respect to agreements reached at the Katowice climate change conference and to do this in a way that does not create an additional burden to the country, by communicating previously agreed details, assumptions and processes.

A.4 Next steps under the Paris Agreement and Katowice Climate Package

The report Next Steps under the Paris Agreement and Katowice Climate Package (GIZ, 2019) presents the ‘ratchet up’ mechanism of the Paris Agreement as a five-year process encompassing three principal elements: the NDC preparation and submission, its monitoring under the Enhanced Transparency Framework (ETF) and its assessment under the Global Stocktake (GST), the last step feeding into the process of raising ambition for the following NDC. In comparison to Fransen *et. al* (2019) the proposed process for NDC development includes finance as one of the main five pillars to consider. It emphasises the importance of considerations on reporting and transparency.

The key elements defined for the implementation of NDCs are based on 5 pillars: governance, adaptation, mitigation, transparency and finance (Figure Appendix A - 3). Long-term mitigation strategies and integrated adaptation planning are key to reduce GHG emissions and build resilience towards climate change impacts. A good transparency or measurement, reporting and verification (MRV) framework to enhance understanding and communication is essential to track implementation and learn which actions work best and why. Synergies of those can then be leveraged in the governance pillar, where institutional structures and processes, including stakeholder engagement, are to be established to drive and coordinate climate action. In addition, finance is regarded as an essential backbone and it is recommended to implement a climate finance framework that matches the needs of a country.

Figure Appendix A - 3: Key elements of NDC implementation



Source: GIZ (2019)

The report outlines steps for policy makers to consider for implementation of the NDCs. As a first step, action needs to be taken to implement the NDC through e.g., the development of roadmaps and action plans. Here, wider considerations on the consistency with other policies and plans such as power strategies or the alignment with the Paris Agreement need to be made. Then, ways on how to enhance ambition should be assessed and the scope of targets for 2030 should be set/enhanced (e.g., through the inclusion of additional sectors). It is central that this is consistent with long-term targets and that information on transparency and understanding is included, especially to comply with the ETF.

Transparency will allow countries to evaluate their actions and identify more ambitious measures to be integrated in the following NDCs. It is therefore complementary to the NDC implementation efforts described above. Countries should set up a roadmap identifying necessary steps to become 'ETF-ready,' a process that would then allow for a progressive implementations of reporting aspects and, therefore, a smoother transition to the ETF.

Similarly, the NDC timeframe to 2030 allows for ambitious target to be identified and incorporated into NDCs at any time. Long-term (i.e.,2050) GHG emission strategies should also be developed to shed light on the high level of ambition needed in NDCs.