

# Training Workshop for the countries of Eurasia, Central Asia and the Caucasus: Deep dive into tracking NDC mitigation commitments under the Paris Agreement

Presentation: Mitigation  
assessments and provisions of  
the ETF related to the tracking  
of NDC

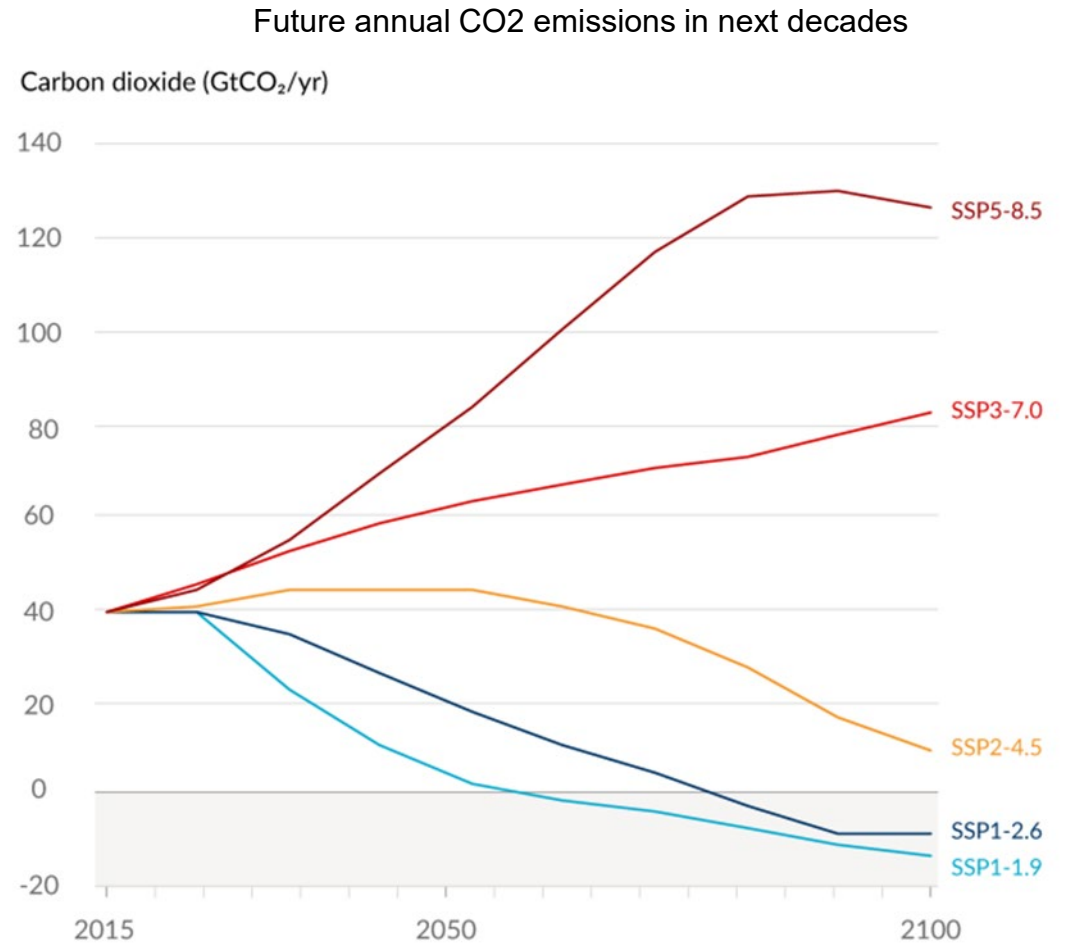
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# Mitigation

**Mitigation** contributes to the objective of stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system by promoting efforts to reduce or limit GHG emissions or to enhance GHG sequestration.

Organisation for Economic Co-operation and Development (OECD)



Source: Figure SPM-4 IPCC AR6 Volume I (2021)

# Mitigation

The identification of **mitigation measures, policies, actions and plans** that can be formulated and implemented is a key part in Party reporting to the UNFCCC established first under the UNFCCC, and then later under the Kyoto Protocol and now under the Paris Agreement and its Enhanced Transparency Framework (ETF).

As such, it is important to properly identify the type of actions, policies, plans and measures that can contribute to the **amount of GHG available in the atmosphere, their associated objectives and the co-benefits** (i.e. economic or social benefits) expected from their implementation.

# Mitigation

EU typology to describe categories of mitigation policies, aimed at simplify reporting by Member States.

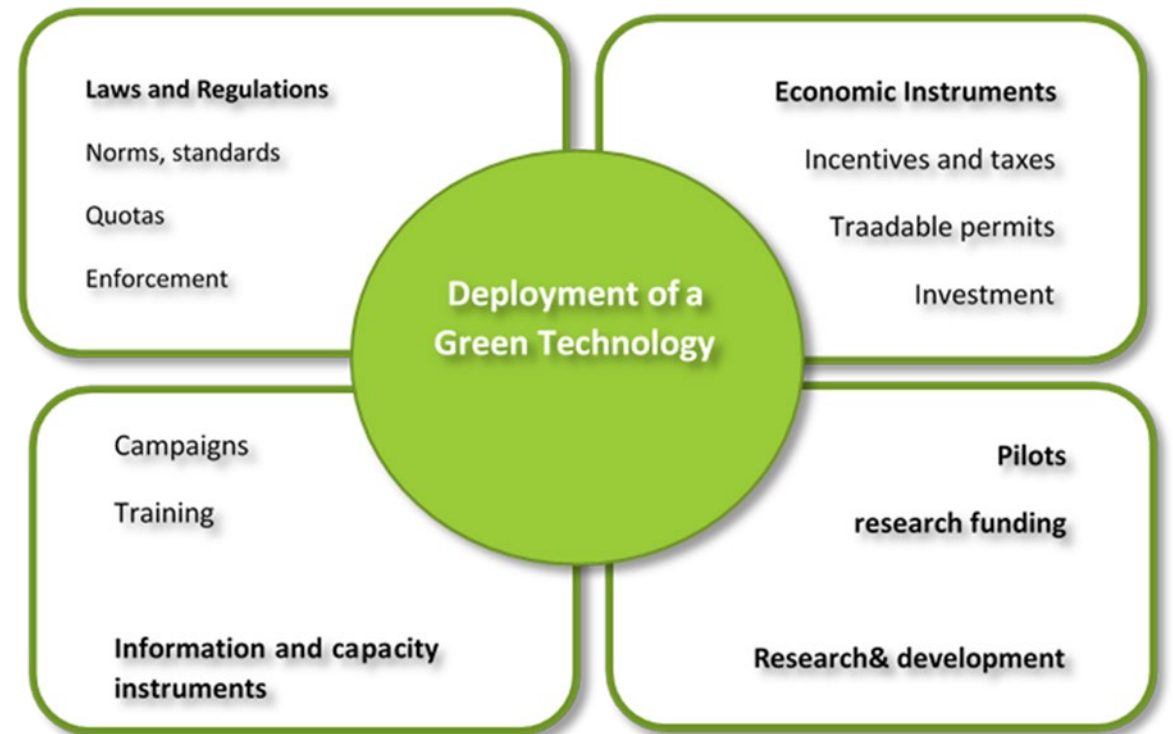
Source: "Guidelines for reporting on policies and measures by Member States under Regulation (EU) 525/2013"

**Table 2: EU description of climate policies**

Policy type	Definition
<b>Economic</b>	provides an economic incentive to reduce GHG emissions. This includes measures such as infrastructure programmes, subsidies, investment programmes, feed-in tariffs, loans/grants and trading schemes (e.g. ETS), charges and fees for non-beneficial actions (e.g.waste fees or congestion charges etc).
<b>Fiscal</b>	provides a financial incentive via taxes. This includes both increases and decreases in taxes.
<b>Voluntary/negotiated agreements</b>	a binding or voluntary standard/regulation as in regulatory and information measures, but agreed between regulators and target group (e.g. automotive industry, farmers).
<b>Regulatory</b>	measures that set binding standards and regulations or permitting systems. This includes for instance building regulations, eco-design standards, establishment of permit and inspection procedures.
<b>Information</b>	measures such as labelling, awareness rising, voluntary standards. The objective is to disseminate information to the general public or specific target groups.
<b>Education</b>	measures such as training programmes, workshops, seminars at all levels (e.g. primary school, adult education, off-the-job training)
<b>Research</b>	includes the provision of funds to allow for research programmes and demonstration projects for private and public institutions
<b>Planning</b>	measures such as waste management plan, transport plan, urban planning, land use plan, which direct the development of the subject in a specific direction (ideally climate friendly and sustainable)
<b>Other</b>	measures that do not fit in any of the above.

## Supplementary instruments to implement mitigation

For a successful implementation of mitigation actions, policies and measures it may be required the development of a **regulatory framework** to allow or facilitate its implementation, the **staff** in charge of its implementation to be adequately **trained**, and improve the awareness of different **stakeholders** towards issues related to the action to be raised.



## Selection and coverage of mitigation initiatives for assessment and reporting

To choose which mitigation initiatives to report on, it is **useful to establish common criteria for the evaluation of initiatives**. These could include, for instance, GHG emissions profile, national development priorities, and the policy context of the initiative of interest.

When selecting the mitigation initiatives for assessment and reporting, it is more important **to identify a sub-set of key mitigation initiatives** that can be easily reported instead of identifying the entire set of mitigation initiatives undertaken in a country.

When choosing these subsets, it is also important to identify those **initiatives that have a more significant and observable impact on GHG emissions reductions in sectors of relevance**, or key categories in the National GHG inventories. This is also echoed in the MPGs of the ETF.

# Assessing mitigation policies, measures, actions and plans under the ETF.

Data



Assumptions



Methodologies, Models and Tools



Baselines and Scenarios



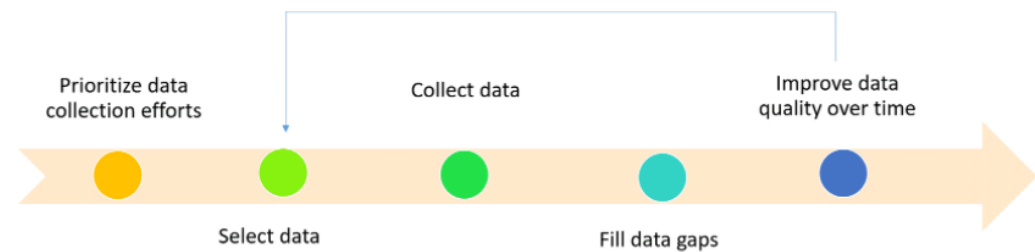
Mitigation potential

Type of analysis	Associated action	Timeline	Results	Tool	Indicators, metrics
Ex-Ante	Assessing	Future situation	Likely impact	Projections	Qualitative, Quantitative
Ex-Post	Tracking	ongoing or past situation	Actual impact	Progress of implementation	Baseline

## Data needs for assessing mitigation under the ETF

Collecting good quality data is paramount for transparent and valuable mitigation assessments.

figure to the right presents a typical cycle of data management to perform mitigation assessments:



Adapted from WRI. Policy and Action Standard (2014).



## Data needs for assessing mitigation under the ETF

Helpful sources of data and assumptions can include:

- GHG inventories and prior national communications
- Energy statistics and energy balances
- National economic and demographic statistics and surveys
- Planning reports from utilities
- Relevant studies (e.g. low carbon scenarios, renewable energy assessments).

International data and studies can help fill data gaps.

Develop consistent accounts of energy use and emissions for base year (and, if relevant, other historical years).

# Description and assumptions

Before considering assessing mitigation initiatives or tracking their progress, it is important to comprehensively describe them. This helps in developing a common understanding of their technical and economic boundaries, effects and opportunities.

In this context, the scope, description and objectives can work as a basic information package to which other relevant elements can be added, e.g. costs, non-mitigation benefits, amongst others.

# Methodologies, models and tools for mitigation assessments

**Methodology:** The process applied to determine emissions.

**Method:** Equations, algorithms and models used to estimate emissions. These include top-down, bottom-up and complex methods as well as simple equations.

**Model:** A schematic (mathematical, computer-based) description of a system that accounts for its known or inferred properties.

**Tool:** Instruments to support calculations, using specific or standard software. Tools usually at least implicitly follow a certain methodology and are based on a defined set of methods. To the extent possible, tools can also provide standardized data, such as emission factors or global warming potential values. Tools range from complex modelling to simple spreadsheet solutions.

Source CGE Supplementary training material for the team of technical experts. Module 2.1: mitigation actions and their effects (2015).



# Methodologies, models and tools for mitigation assessments

## Methodologies



There are several available methodologies to assess mitigation actions, policies and measures, including integrated approaches. Three good examples in this regard are:

- **GHG Protocol:** Policy and Action Standard for calculating the GHG impact of mitigation actions: provides a standardized approach for estimating the greenhouse gas effect of policies and actions.
- **GHG Protocol:** Mitigation Goal Standard: provides a standardized approach for assessing progress toward national and subnational greenhouse gas reduction goals.
- **ICAT Methodologies:** guidance for the assessment of the GHG, sustainable development and transformational impacts of policies and actions.

# Methodologies, models and tools for mitigation assessments

Models used for mitigation assessments of individual or groups of actions, policies and measures

- **Top-down** (e.g. econometric models, regression analysis, computable general equilibrium models);
- **Bottom-up** (e.g. engineering models, marginal abatement cost (MAC) curves);
- **Simple equations** (e.g. simple extrapolation);
- **Other** (complex models, e.g. simulation models, integrated assessment models);
- **A combination**

Both Top-down and Bottom-up approaches can yield useful complementary insights on mitigation. Top-down are most useful for studying broad macroeconomic and fiscal policies for mitigation such as carbon or other environmental taxes. Bottom-up are most useful for studying options that have specific sectoral and technological implications.

# Scenarios and Baseline setting

## Scenario

A possible future pathway with the ability to capture key factors of human development that influence GHG emissions and our ability to respond to climate change. Scenarios cover a range of plausible futures and can be used to integrate knowledge about the drivers of GHG emissions, mitigation options, climate change, and climate impacts. (IPCC AR5)

## Reference or Baseline Scenario

Baseline scenarios or reference scenarios are projections of GHG emissions and their key drivers as they might evolve in a future in which no explicit actions, policies and measures are taken to reduce GHG emissions.

a Baseline scenario acts as a reference to which (further) policies, constraints, or other changes could be added to determine how the baseline may change in response



# Mitigation potential

In a mitigation assessment, the identification of the "Mitigation Potential" associated with any particular policy or activity aimed at reducing GHG emissions is central to the assessment process.

The Mitigation Potential refers to the quantity of GHG mitigation in relation to a baseline or reference case that can be achieved by a mitigation option over a given period.

The assessment of mitigation actions, policies and measures can also provide information beyond the magnitude of the GHG emissions reductions and cost-effectiveness. Most notably, mitigation assessments can also generate information about an action's expected sustainable development benefits, as well as more clarity relating to the feasibility of its implementation, including the adequacy of existing institutional capacity, its replicability and the opportunities for technology transfer.

Halsnæs K et al. 2007. Framing Issues. In: Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

# Estimating GHG emissions

One of the most common approaches is defining an emissions factor and multiplying it with the available activity data or energy consumption data.

## GHG Emissions = Projected activity data x Emission Factor

However, if data is available for more parameters related to energy consumption and GHG emissions directly and indirectly related to the activity, the following formula could be used:

GHG emissions = Projected energy consumption x Energy efficiency x GHG intensity of energy generation + Non-energy GHG emissions

The **results** of calculating mitigation scenario emissions (outputs) can be **expressed in different forms**:

### 1) GHG Emissions

a) Cumulative mitigation potential over the assessment period a Mt CO<sub>2</sub>e (2015 – 2030);

b) Average annual savings over the assessment period a Mt CO<sub>2</sub>e/a or Mt CO<sub>2</sub>e/yr;

c) Annual savings for a given year (usually the end year) a Mt CO<sub>2</sub>e/a (2030);

d) Net present values of reductions (discounted future savings) a Mt CO<sub>2</sub>e/a (2014);

### 2) Costs of mitigation actions, policies and measures (US\$/t CO<sub>2</sub>e)

a) Market Costs

b) Social Costs





# Reporting mitigation assessments

Reporting on the estimated and registered impacts of mitigation initiatives are a **key requirement** for effective national transparency systems, as well as reporting as part of the Enhanced Transparency Framework.

The **Modalities, Processes, and Guidelines (MPGs) of the Enhanced Transparency Framework (ETF)** also call for tracking progress in the implementation of a country's NDC once the mitigation initiatives are under implementation.

The main reporting tool defined by the ETF is the **Biennial Transparency Report (BTR)**

# Outline of the BTR: Information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement

## A. National circumstances and institutional arrangements

- The aim is to paint a comprehensive picture of a country's unique situation that might impact their progress towards NDCs. This includes understanding the institutional framework that supports climate change initiatives.

## B. Description of a Party's NDC under Article 4 of the Paris Agreement, including updates

- This section aims to provide a detailed account of a country's NDC, including all its parameters and any updates since the last report. The intent is to ensure a clear understanding of the country's climate commitments and any changes therein.

## C. Information necessary to track progress

- The goal of this section is to outline how a country tracks its progress towards meeting its NDCs. It involves detailing the specific indicators used and sharing the most recent data related to these indicators.

## D. Mitigation Policies, Actions, and Plans

- This part aims to present a detailed account of the country's efforts to mitigate climate change, including policies, actions, and plans. The goal is to highlight the measures being taken to reduce GHG emissions and the effectiveness of these measures.

## E. Summary of GHG Emissions and Removals

- This section's goal is to provide a succinct summary of a country's GHG emissions and removals. This information is especially important for countries submitting a stand-alone national inventory report.

## F. Projections of GHG Emissions and Removals

- The goal here is to present projections of a country's future GHG emissions and removals, based on current mitigation policies and measures. This helps to identify the potential future trajectory of a country's GHG emissions.

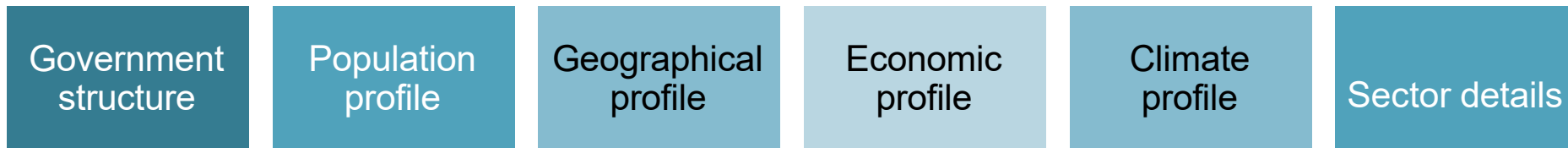
## G. Other Information

- This section provides a platform for countries to share any additional relevant information that helps understand their progress in implementing and achieving their NDCs. This could include any unique initiatives, challenges, or plans that are relevant to their NDC progress.

Source: UNFCCC

## A. National circumstances and institutional arrangements

- Each Party **shall** describe its **national circumstances relevant** to progress made in implementing and achieving its NDC, including:



- Each Party **shall** provide information on:
  - how its national circumstances affect GHG emissions and removals** over time.
  - the institutional arrangements in place to track progress of NDCs, including those used for tracking ITMOs\*, if applicable.**
  - legal, institutional, administrative and procedural arrangements** for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to the implementation and achievement of its NDC.

\* ITMOs: Internationally transferred mitigation outcomes

## B. Description of a Party's NDC, including updates

Each Party **shall** provide a **description of its NDC**, against which progress will be tracked:

	Description
Target(s) and description, including target type(s)*, as applicable	
Target year(s) or period(s), and whether they are single-year or multi-year target(s), as applicable	
Reference point(s), level(s), baseline(s), base year(s) or starting point(s), and their respective value(s), as applicable	
Time frame(s) and/or periods for implementation, as applicable	
Scope and coverage, including, as relevant, sectors, categories, activities, sources and sinks, pools and gases, as applicable	
Intention to use cooperative approaches that involve the use of ITMOs under Article 6 towards NDCs under Article 4 of the Paris Agreement, as applicable	
Any updates or clarifications of previously reported information, as applicable	

- *This table is to be used by Parties on a voluntary basis, however information items are shall*
- Parties with both unconditional and conditional targets in their NDC may add a row to the table to describe conditional targets
- This information overlaps with NDC/ICTU, ensure consistency or explain changes/updates

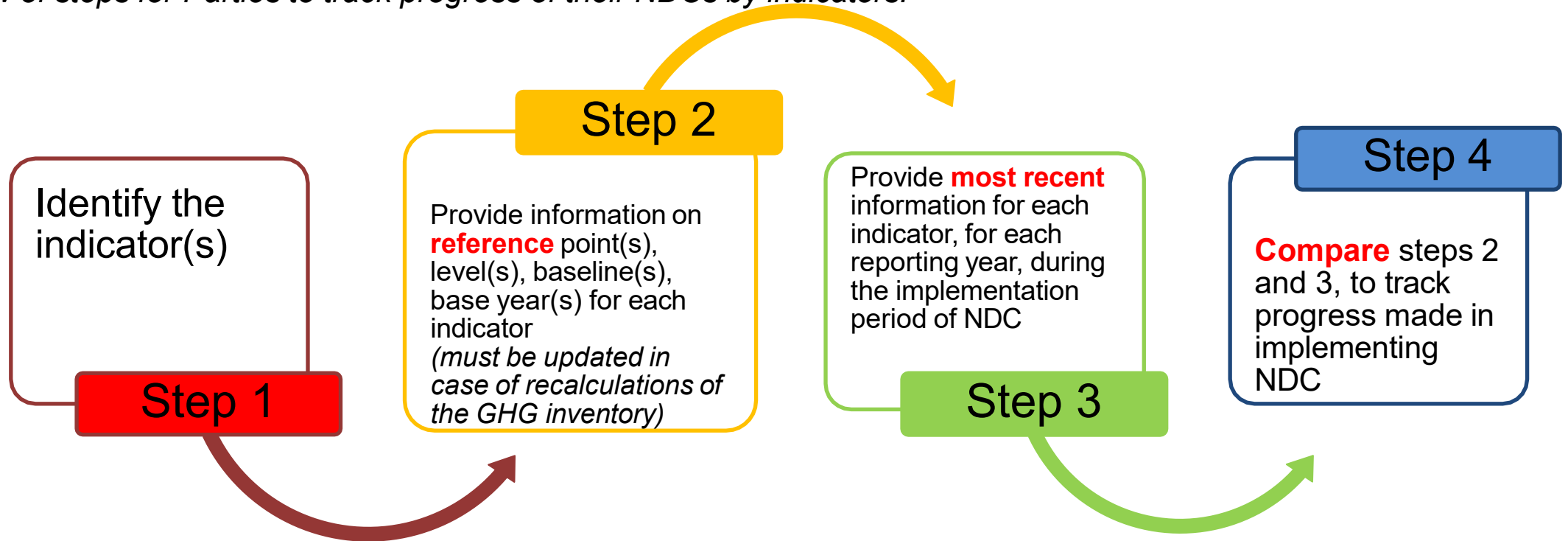
\* *Examples of target types:* economy-wide absolute emission reduction, emission intensity reduction, emission reduction below a projected baseline, mitigation co-benefits of adaptation actions or economic diversification plans, policies and measures, etc.

## C. Information necessary to track progress in implementing and achieving NDC

- Each Party **shall** identify **indicator(s)** (*quantitative or qualitative; relevant to the NDC*) to track progress towards implementation and achievement of its NDC
- Each Party **shall** provide:
  - the information for each selected indicator for the **reference point(s)**, level(s), baseline(s), base year(s); and the **most recent information** for each reporting year; and **compare** these
  - description of each **methodology and accounting approach** used for its NDC target, construction of baseline, and each indicator identified; [*key parameters, assumptions, definitions, data sources, models, IPCC guidelines, metrics, etc*]
  - all this information in a **structured summary** to track progress:
    - ✓ Information on indicators [*reference level; most recent; at the reporting years in between*]
    - ✓ GHG emissions and removals consistent with the scope of its NDC, where applicable;
    - ✓ Contribution from the LULUCF sector for each year of the target period or target year, as applicable;
    - ✓ Information on use of ITMOs, as applicable;
- Each Party **with an NDC that consists mitigation co-benefits** from adaptation actions and economic diversification plans, **shall** provide information on domestic policies and measures implemented to address social and economic consequences of response measures.

## C. Information necessary to track progress in implementing and achieving NDC

Overview of steps for Parties to track progress of their NDCs by indicators:



- For the first BTR that contains information on the end year of NDC, provide assessment of whether target is achieved.

## D. Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans , related to implementing and achieving an NDC

- Each Party **shall** provide information on **policies, actions and measures that support implementation of its NDC**, focusing on those that have the most significant impact on GHG emissions or removals and those impacting key categories in the national GHG inventory
- To the extent possible, Parties **shall** organize reporting of actions **by sector** (energy, transport, IPPU, agriculture, LULUCF, waste, other), in a tabular format, including relevant information on mitigation co-benefits, as applicable:

Name	Description	Objectives	Type of instrument (regulatory, economic, other)	Status (planned, adopted, implemented)	Sectors affected	Gasses affected	Start year of implementation	Implementing entity
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- Each Party may also provide information on related costs, non-GHG mitigation benefits and how these actions interact with each other, as appropriate
- Each Party **shall** provide information on **estimates of expected and achieved GHG emission reductions [FX: encouraged];** and **methodologies and assumptions used**, to the extent possible
- Each Party should: identify PAMs no longer in-place and explain why; provide information on how its PAMs are modifying longer-terms trends in GHG emissions and removals

# E. Summary of GHG emissions and removals

- Each Party, that submits a stand-alone national inventory report, **shall** provide a **summary of its GHG emissions and removals**.
- This information shall be provided for those reporting years corresponding to the Party's most recent national inventory report, in a tabular format.

➤ **the common reporting table 10 emission trends – summary**

GREENHOUSE GAS EMISSIONS AND REMOVALS	Reference year/period for NDC <sup>(1)</sup>	Base year <sup>(2)</sup>	1990 <sup>(1)</sup>	(Years 1991 to 2019)	(Years 1991 to 2019)	2020	(Years 2021 to latest reported year)	(Years 2021 to latest reported year)	(Years 2021 to latest reported year)	Change from [1990][base year][reference year][period] to latest reported year (%)						
CO <sub>2</sub> equivalents (kt) <sup>(3)</sup>																
CO <sub>2</sub> emissions without net CO <sub>2</sub> from LULUCF																
CO <sub>2</sub> emissions with net CO <sub>2</sub> from LULUCF																
CH <sub>4</sub> emissions without CH <sub>4</sub> from LULUCF																
CH <sub>4</sub> emissions with CH <sub>4</sub> from LULUCF																
N <sub>2</sub> O emissions without N <sub>2</sub> O from LULUCF																
N <sub>2</sub> O emissions with N <sub>2</sub> O from LULUCF																
HFCs																
PFCs																
Unspecified mix of HFCs and PFCs																
SF <sub>6</sub>																
NF <sub>3</sub>																
Total (without LULUCF)																
(with LULUCF)																
(without LULUCF, with indirect)																
(with LULUCF, with indirect)																
					<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</b>		Reference year/period for NDC <sup>(1)</sup>	Base year <sup>(2)</sup>	1990	(Years 1991 to 2019)	(Years 1991 to 2019)	2020	(Years 2021 to latest reported year)	(Years 2021 to latest reported year)	(Years 2021 to latest reported year)	Change from 1990[base year][reference year][period] to latest reported year (%)



## F. Projections of GHG emissions and removals, as applicable

- Each Party **shall** report **projections for emissions and removals [FX: encouraged]**
- Projections will be indicative on future trends, and will not be used to assess progress towards NDC, unless a Party identified the reported projection as its baseline.

“with measures”  
(shall)

“with additional  
measures” (may)

“without  
measures” (may)

- Projections **shall** begin from most recent year in the Party’s inventory report and extend **at least 15 years beyond** the next year ending in zero or five **[FX: extend their projections at least to the end point of their NDC]**

**[FX: can report using less detailed methodology or coverage]**

## F. Projections of GHG emissions and removals, as applicable

- Each Party should provide information on the **methodology used to develop projections**:
  - Models, approaches, key assumptions, parameters (*GDP rate/level, population growth rate/level, etc.*)
  - Changes in methodology since the latest BTR
  - Assumptions on policies and measures included in WM and WAM projections, if included
  - Sensitivity analysis for the projections
- Each Party **shall** report projections for **key indicators to determine progress towards its NDC**
- Each Party **shall** include projections on a **sectoral basis and by gas**, as well as **for the national total**
- Projections **shall** be presented relative to actual inventory data (for preceding years) and be provided with and without LULUCF

# Common tabular formats:

## Common tabular formats for the electronic reporting of the information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement

### Decision 5/CMA.3

Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement



FCCC/PA/CMA/2021/10/Add.2

### Annex II\*

#### Common tabular formats for the electronic reporting of the information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement

[English only]

#### 1. Structured summary: Description of selected indicators

<i>Indicator(s) selected to track progress<sup>a</sup></i>	<i>Description</i>
{Indicator}	Information for the reference point(s), level(s), baseline(s), base year(s) or starting point(s), as appropriate <sup>b</sup>  Updates in accordance with any recalculation of the GHG inventory, as appropriate <sup>b</sup>  Relation to NDC <sup>c</sup>

*Notes:* (1) Pursuant to para. 79 of the MPGs, each Party shall report the information referred to in paras. 65–78 of the MPGs in a narrative and common tabular format, as applicable. (2) A Party may amend the reporting format (e.g. Excel file) to remove specific rows in this table if the information to be provided in those rows is not applicable to the Party's NDC under Article 4 of the Paris Agreement, in accordance with the MPGs. (3) The Party could add rows for each additional selected indicator and related information.

<sup>a</sup> Each Party shall identify the indicator(s) that it has selected to track progress of its NDC (para. 65 of the MPGs).

<sup>b</sup> Each Party shall provide the information for each selected indicator for the reference point(s), level(s), baseline(s), base year(s) or starting point(s), and shall update the information in accordance with any recalculation of the GHG inventory, as appropriate (para. 67 of the MPGs).

<sup>c</sup> Each Party shall describe for each indicator identified how it is related to its NDC (para. 76(a) of the MPGs).

*Custom footnotes:*

*Documentation box:*



**CBIT-GSP**  
CLIMATE TRANSPARENCY



copenhagen  
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# Thank you for your attention!

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