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# MRV IN THE CONTEXT OF INDCS



# TYPES OF MRV

- **MRV takes on a different meanings** depending on the user and context:
  - MRV of GHG emissions
  - MRV of GHG emissions reductions of mitigation efforts
  - MRV of non-GHG effects of mitigation efforts
  - MRV of implementation of mitigation efforts
  - MRV of adaptation efforts
  - MRV of finance



# WHY IS MRV IMPORTANT?

- MRV enables governments to meet a variety of domestic and international objectives
- **Domestically**
  - Understand key emissions sources and sinks
  - Design effective mitigation strategies
  - Assess impacts
  - Track progress
  - Meet stakeholder demands for public disclosure of information
- **Internationally**
  - Meet international reporting obligations under UNFCCC
  - Build trust
  - Track global emissions and emissions reductions

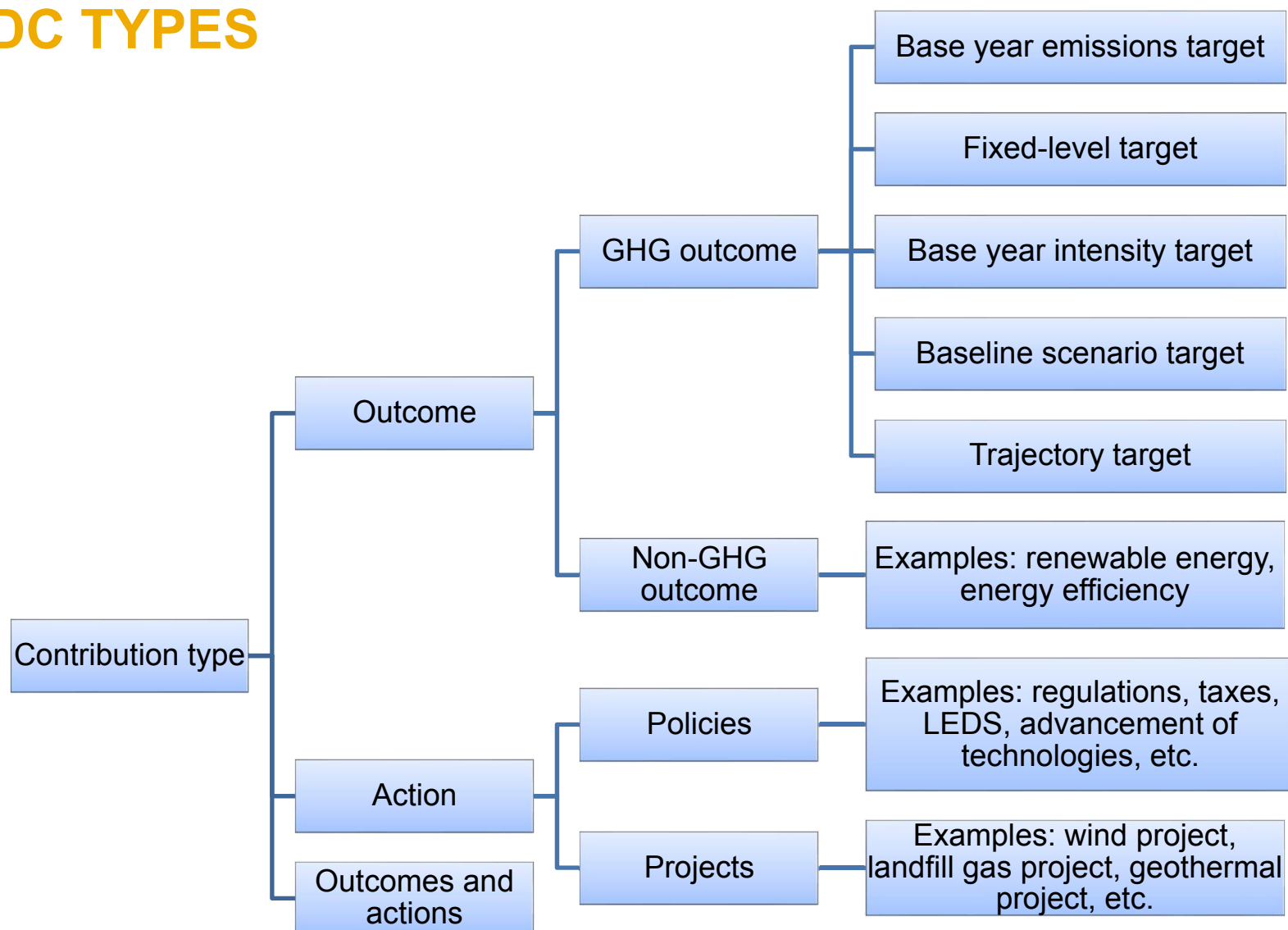


# MRV FOR INDCS

- During preparation of INDC
- Tracking progress of INDC



# CONSIDERING MRV IMPLICATIONS OF VARIOUS INDC TYPES



# INDC TYPE

## CAIT Climate Data Explorer

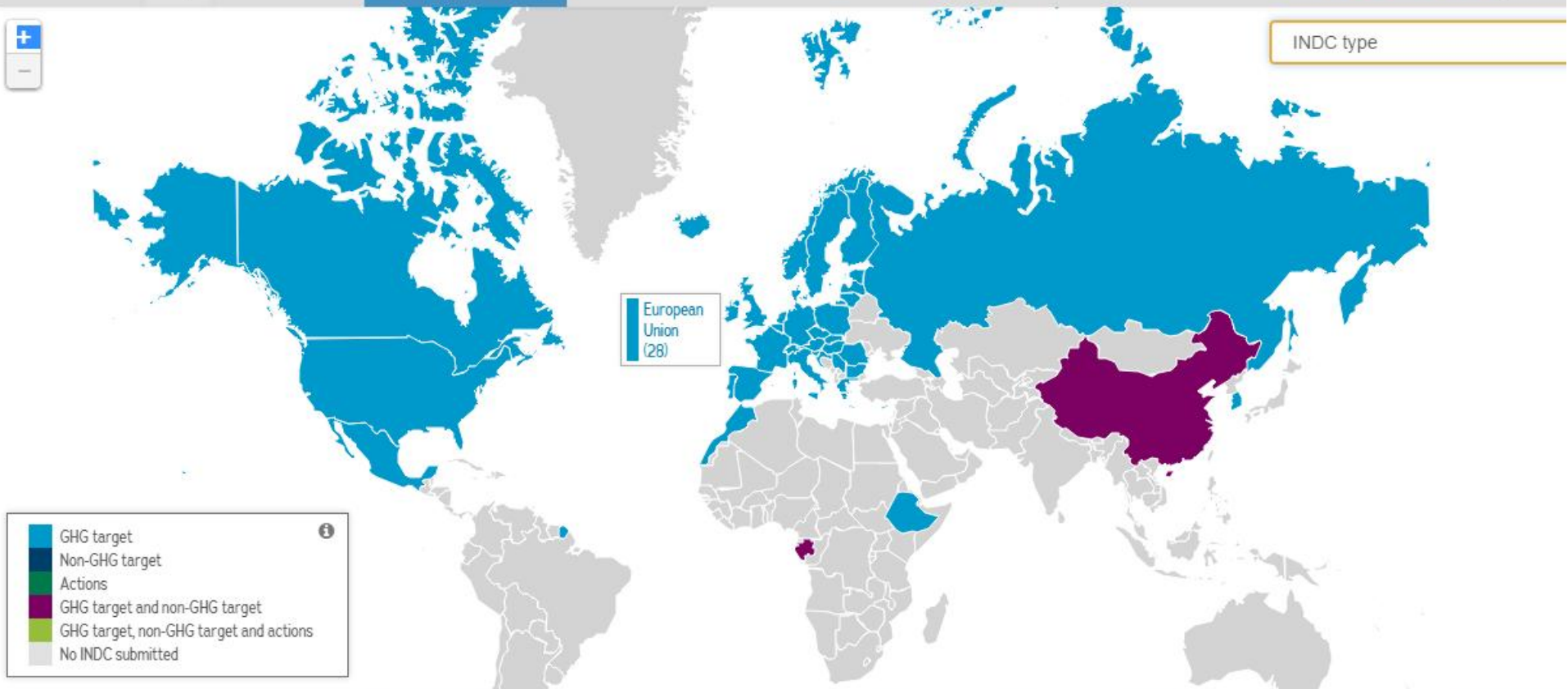
► Paris Contributions Map



Dashboard Map Detailed View View Pre-2020 Map



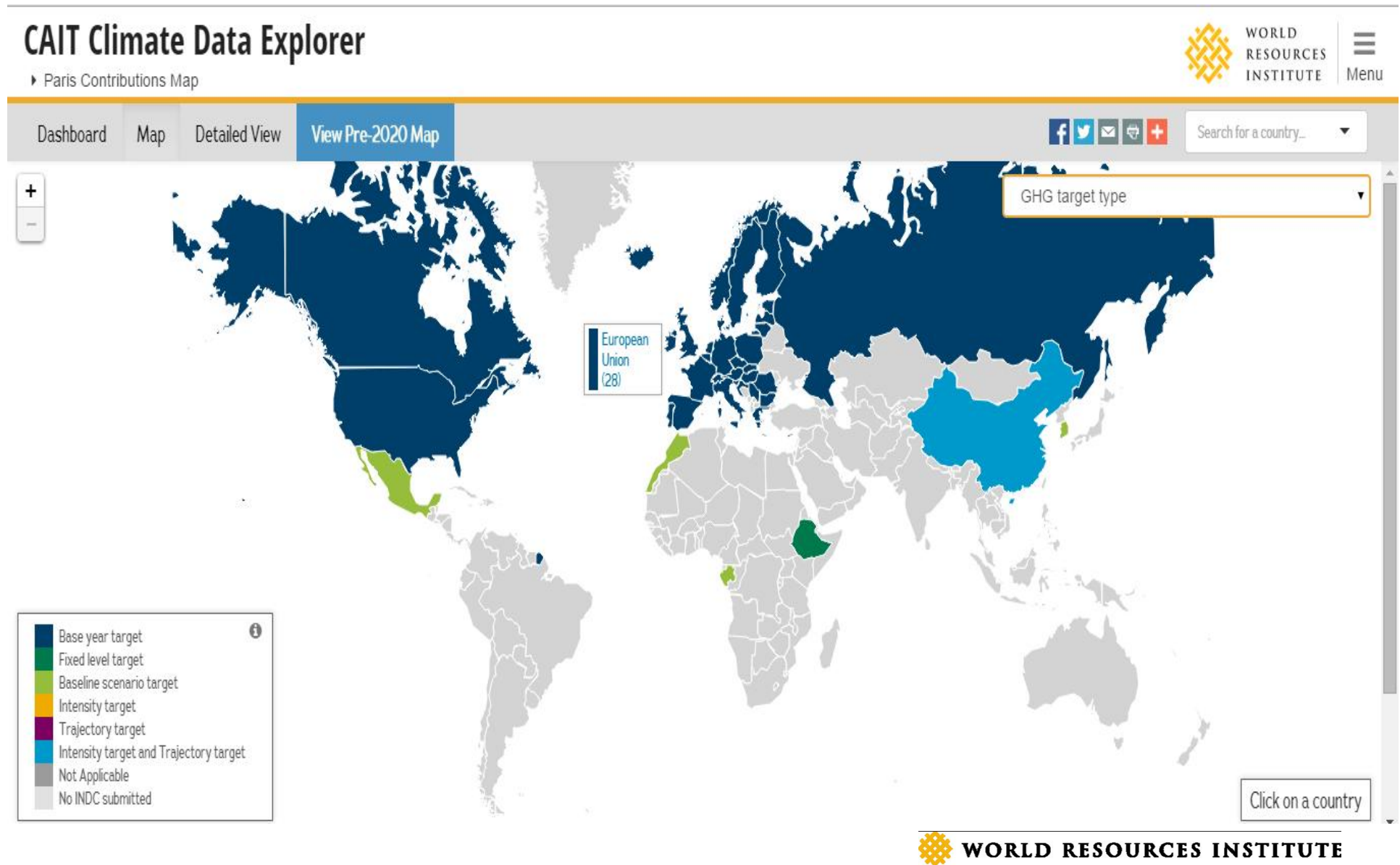
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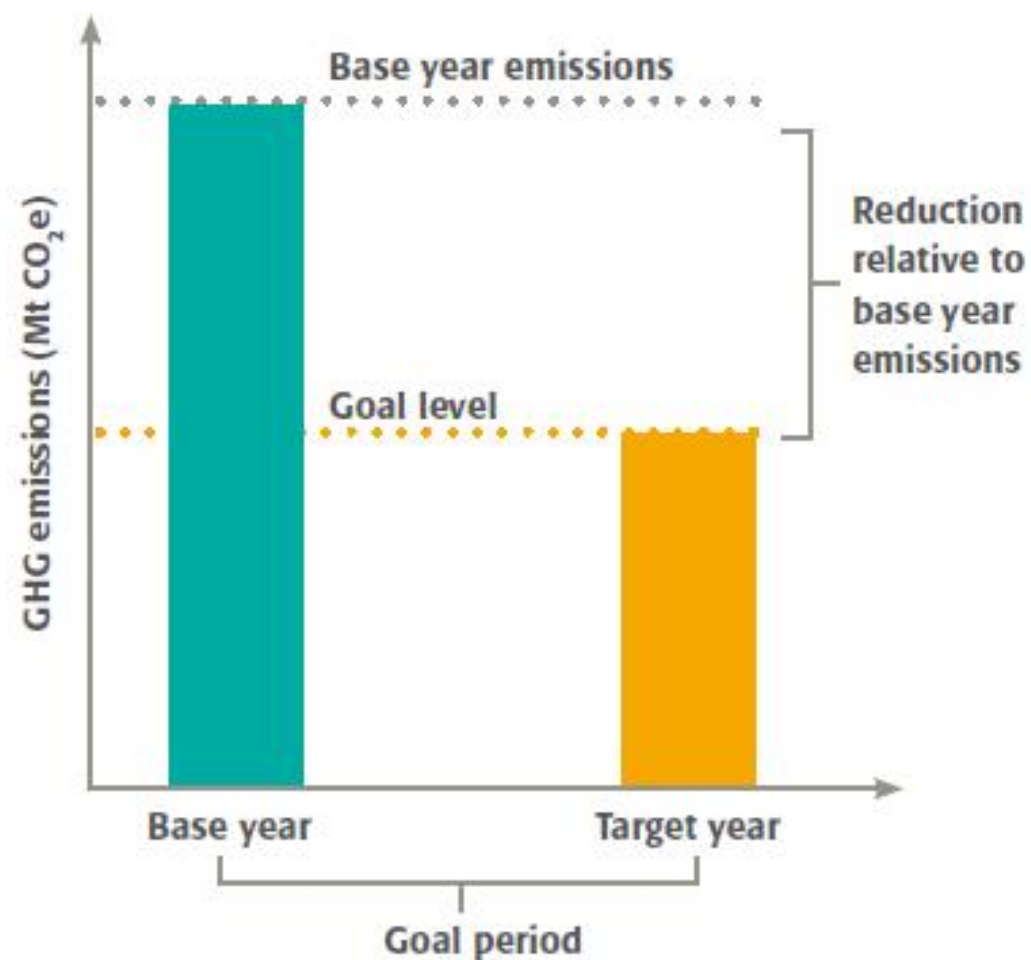
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# GHG TARGET TYPES SO FAR



# EXAMPLE OF A BASE YEAR EMISSIONS GOAL



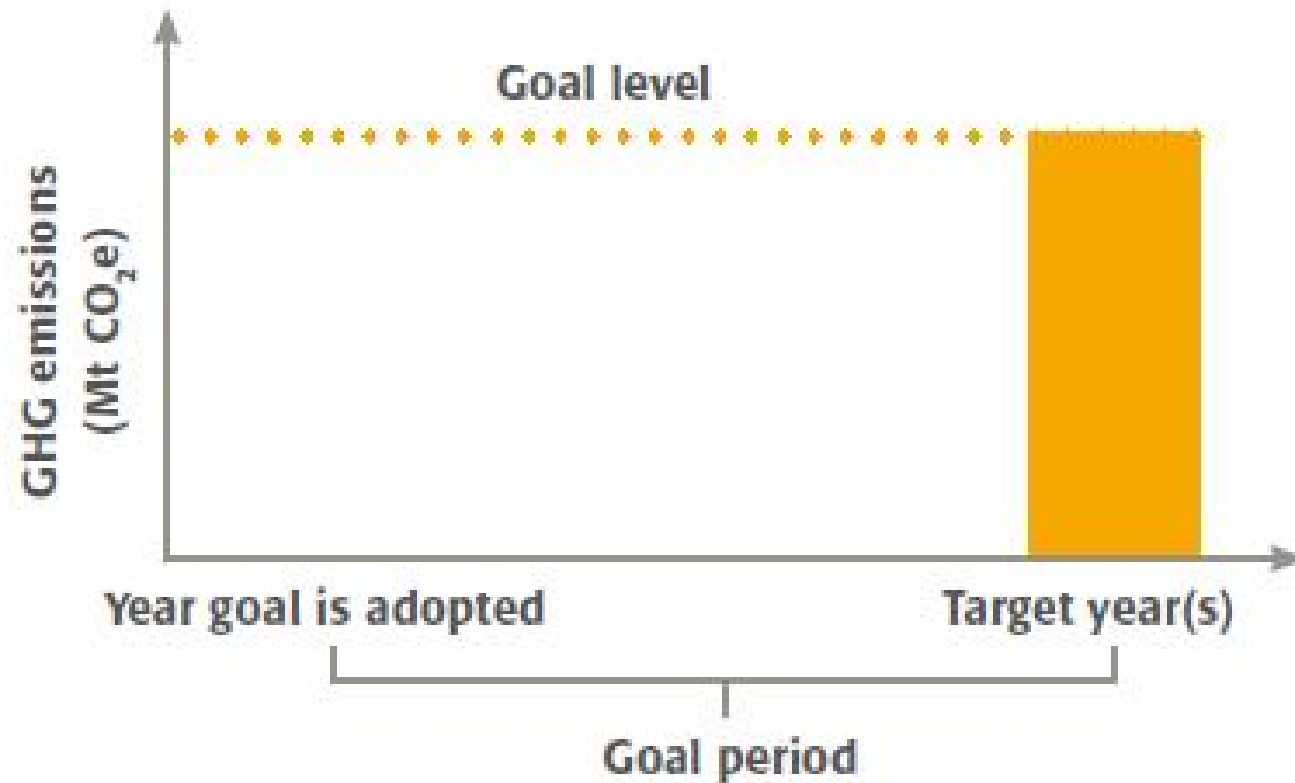


# BASE YEAR EMISSIONS GOALS

- *Assessment of measurability:*
  - Best facilitate measurability, in terms of both emissions reductions and emissions levels in the target year associated with meeting the goal.
  - No non-GHG data are involved
  - No models have to be used for projections
  - Easy to translate to various base years.



# EXAMPLE OF FIXED LEVEL GOAL

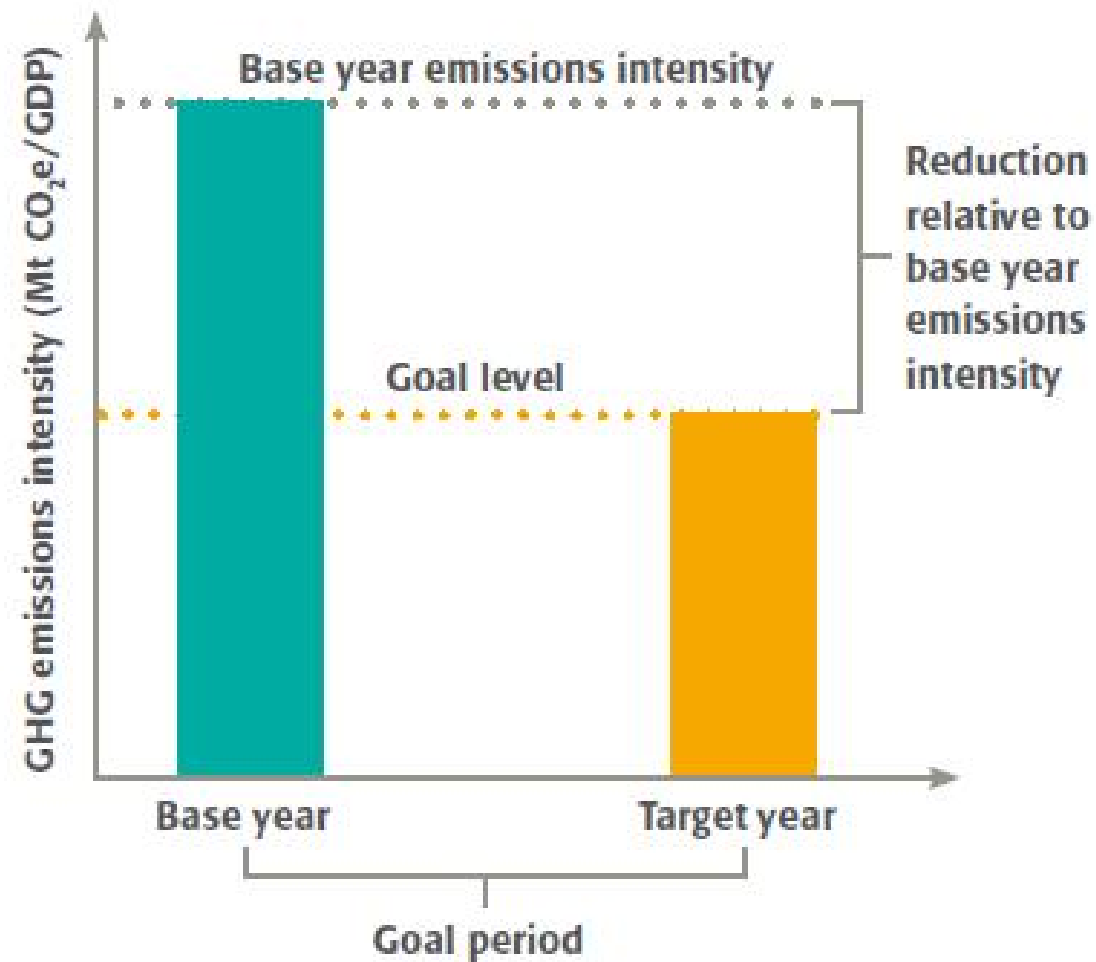


# FIXED LEVEL GOALS

- *Assessment of measurability:*
  - Emissions level associated with the target year is defined by the goal itself.
  - No non-GHG data are involved nor do models have to be used for projections.



# EXAMPLE OF BASE YEAR INTENSITY GOAL

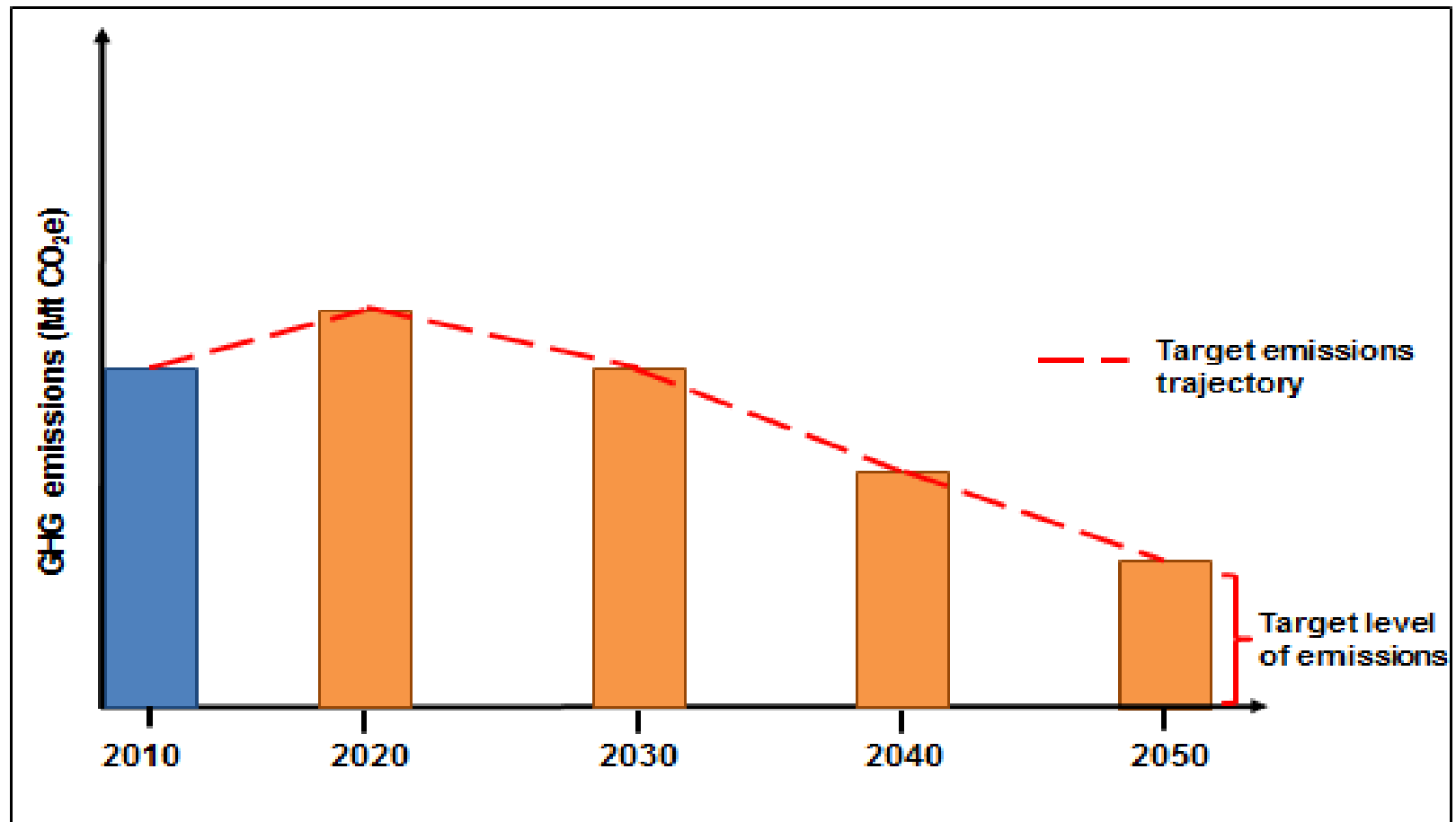


# BASE YEAR INTENSITY GOALS

- *Assessment of measurability:*
  - Unit of output needs to be estimated and measured
  - Requires projections of how the unit of output will change
  - Typically domestic data sources and methods are used, which vary and contribute to a lack of comparability among Parties.



# EXAMPLE OF TRAJECTORY GOAL



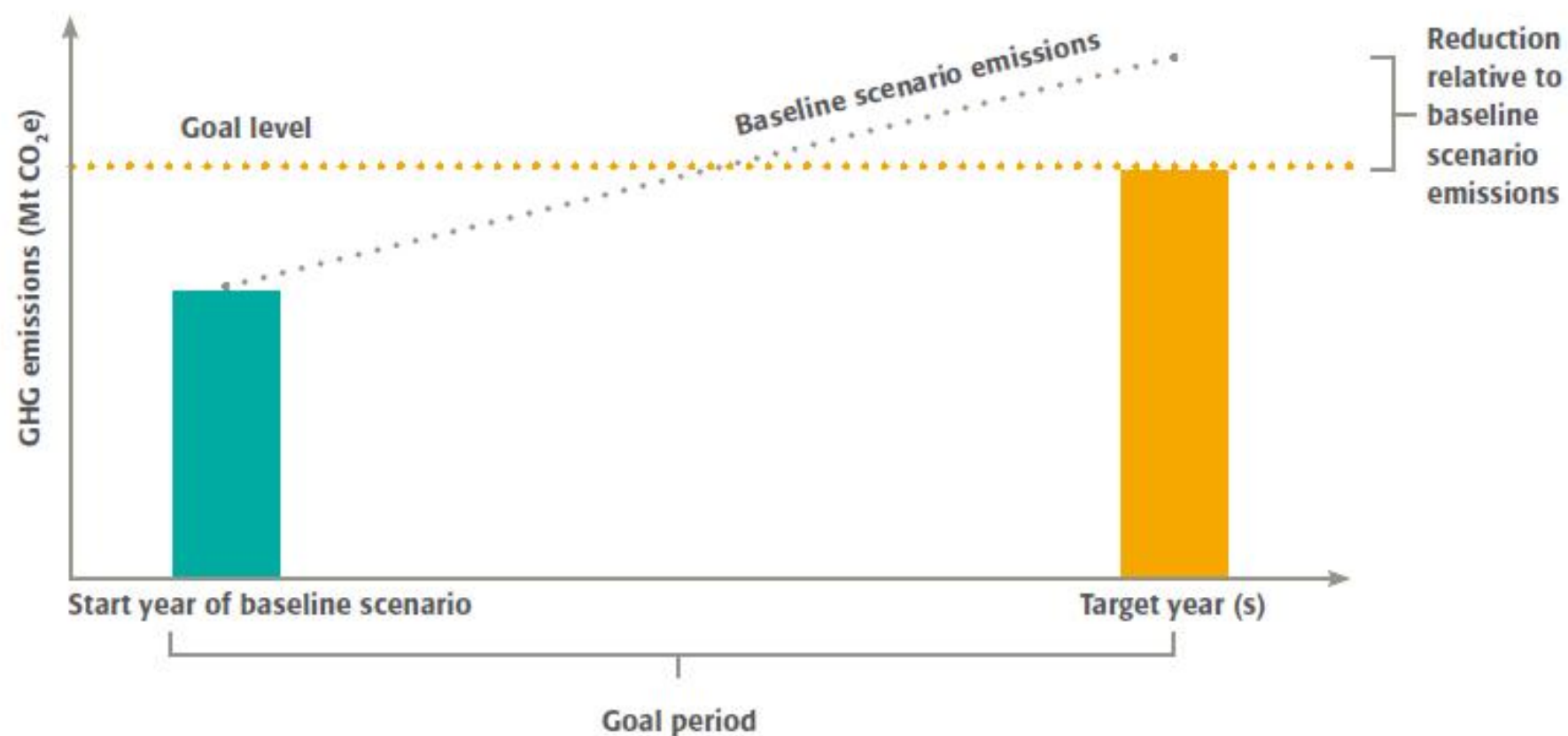
# TRAJECTORY GOALS

- *Assessment of measurability:*
  - *should specify the target years*
  - *and associated emissions levels for each milestone*





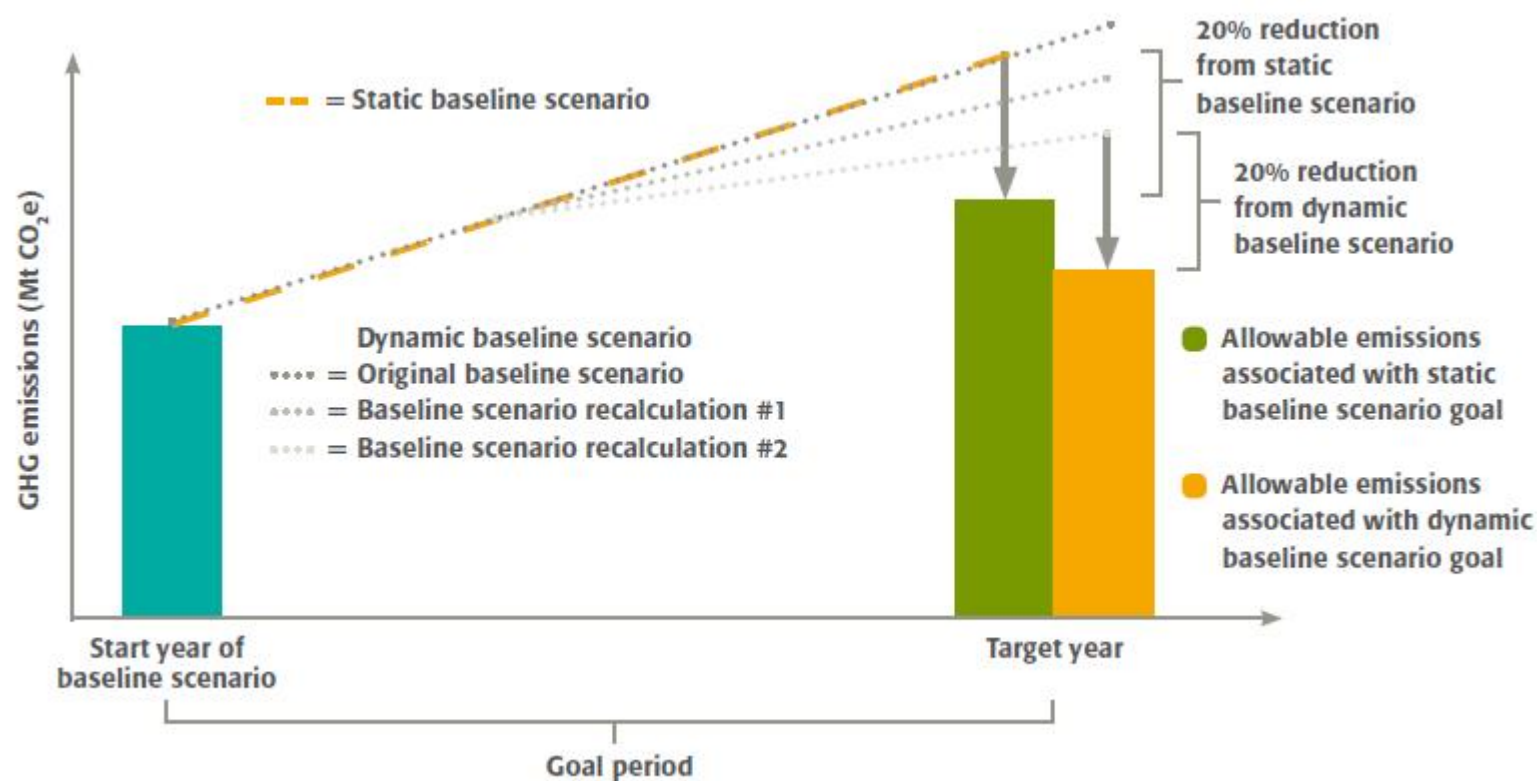
# EXAMPLE OF A BASELINE SCENARIO GOAL



# BASELINE SCENARIO GOALS

- *Assessment of measurability:*
  - Require projections, based on assumptions, for a range of emissions drivers and depend on modeling techniques, which can range from simple to complex.
  - Variation in inclusion of implemented, adopted, and planned policies, as well as the methods for estimating their effects
  - If baselines are not fixed ex-ante, the emissions level associated with meeting the goal cannot be calculated.

# EXAMPLE OF STATIC VERSUS DYNAMIC BASELINE SCENARIOS



# NON-GHG TARGET TYPES SO FAR

## CAIT Climate Data Explorer

► Paris Contributions Map



Dashboard

Map

Detailed View

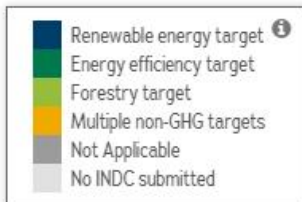
View Pre-2020 Map



Search I



Non-GHG target type

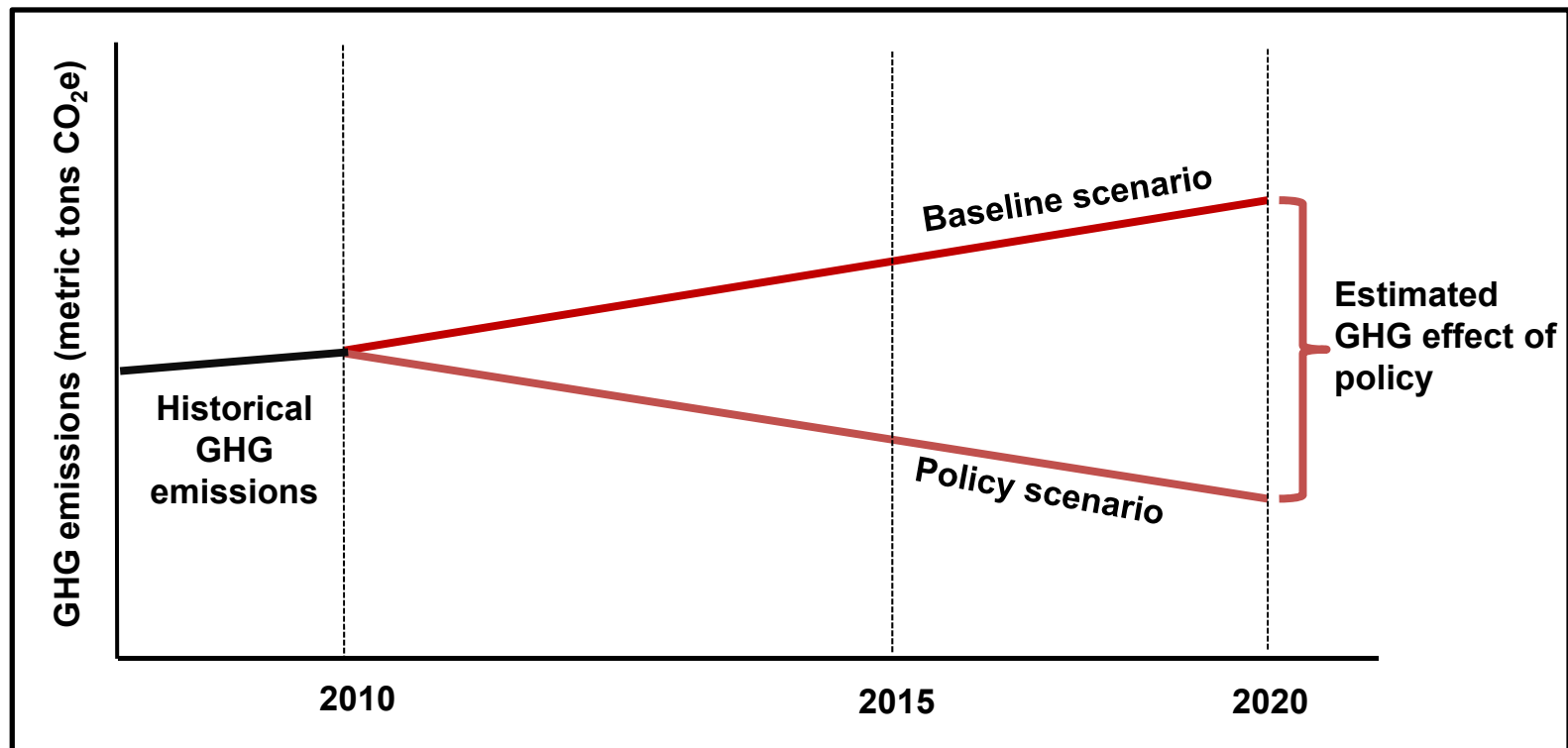


European Union (28)



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# EX ANTE ESTIMATION OF EMISSIONS IMPACT OF ACTIONS



# POLICIES AND ACTIONS

- *Assessment of measurability:*
  - The GHG impacts of policies are, in general, more difficult to assess than those of mitigation goals.
  - Guidance exists but standardized methods have yet to be adopted by the UNFCCC.
  - Differences in data availability, methods, and the diversity of policy commitments, the results of such assessments cannot be easily compared across countries.
  - Policies may not always be framed in terms of emissions reductions.



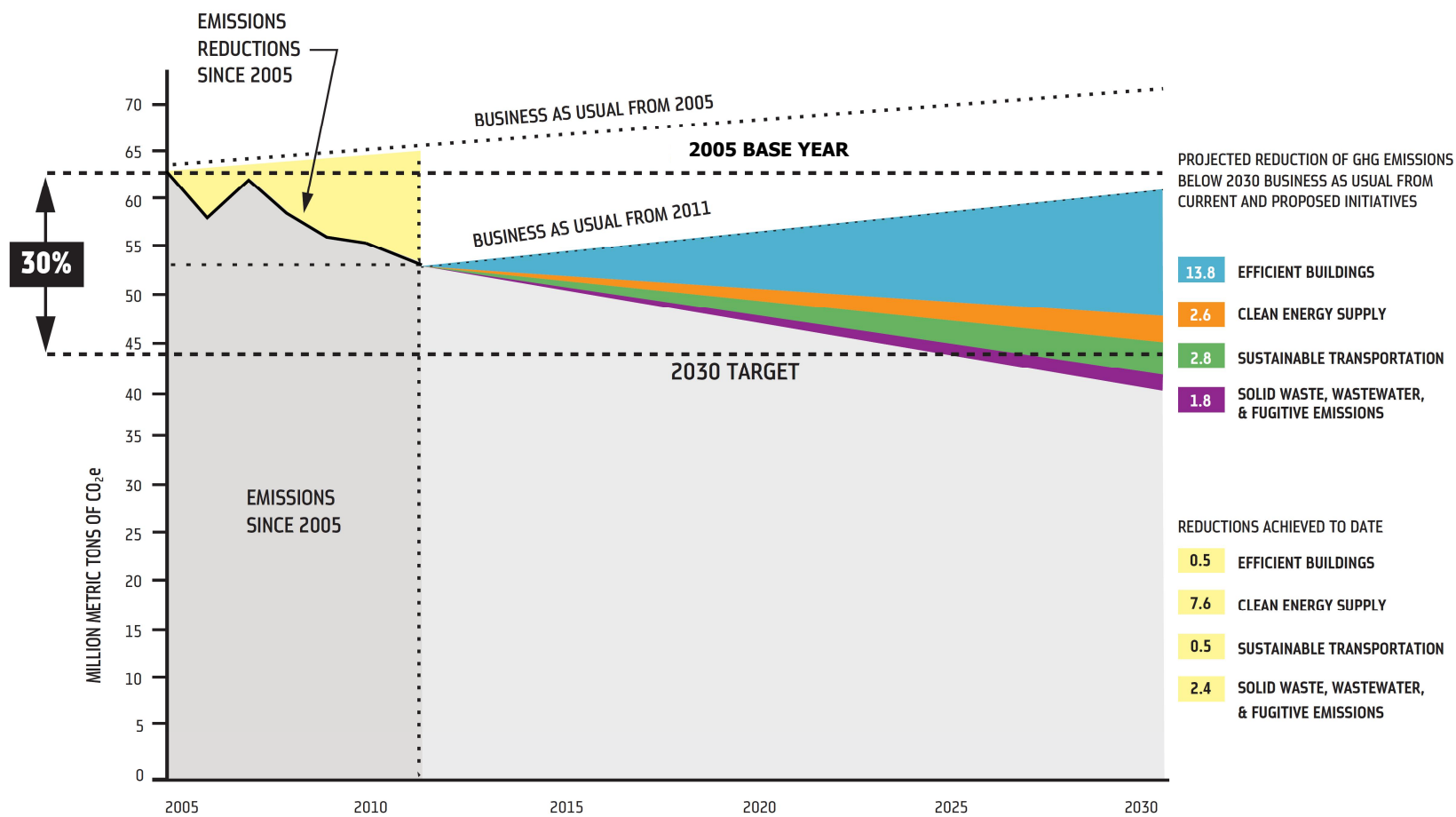
# MRV FOR INDCS

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# TRACKING PROGRESS



Source: NYC Mayor's Office and M.J. Beck Consulting, LLC

# WHAT WILL MRV RULES LOOK LIKE?

- Reporting requirements?
  - For GHG effects?
  - For non-GHG effects?
  - For implementation?
- Methodologies for measurement and accounting?
- Reporting format?
- Reporting frequency?
- Verification requirements? By whom? How often?



# METHODS FOR MEASUREMENT OF EMISSIONS

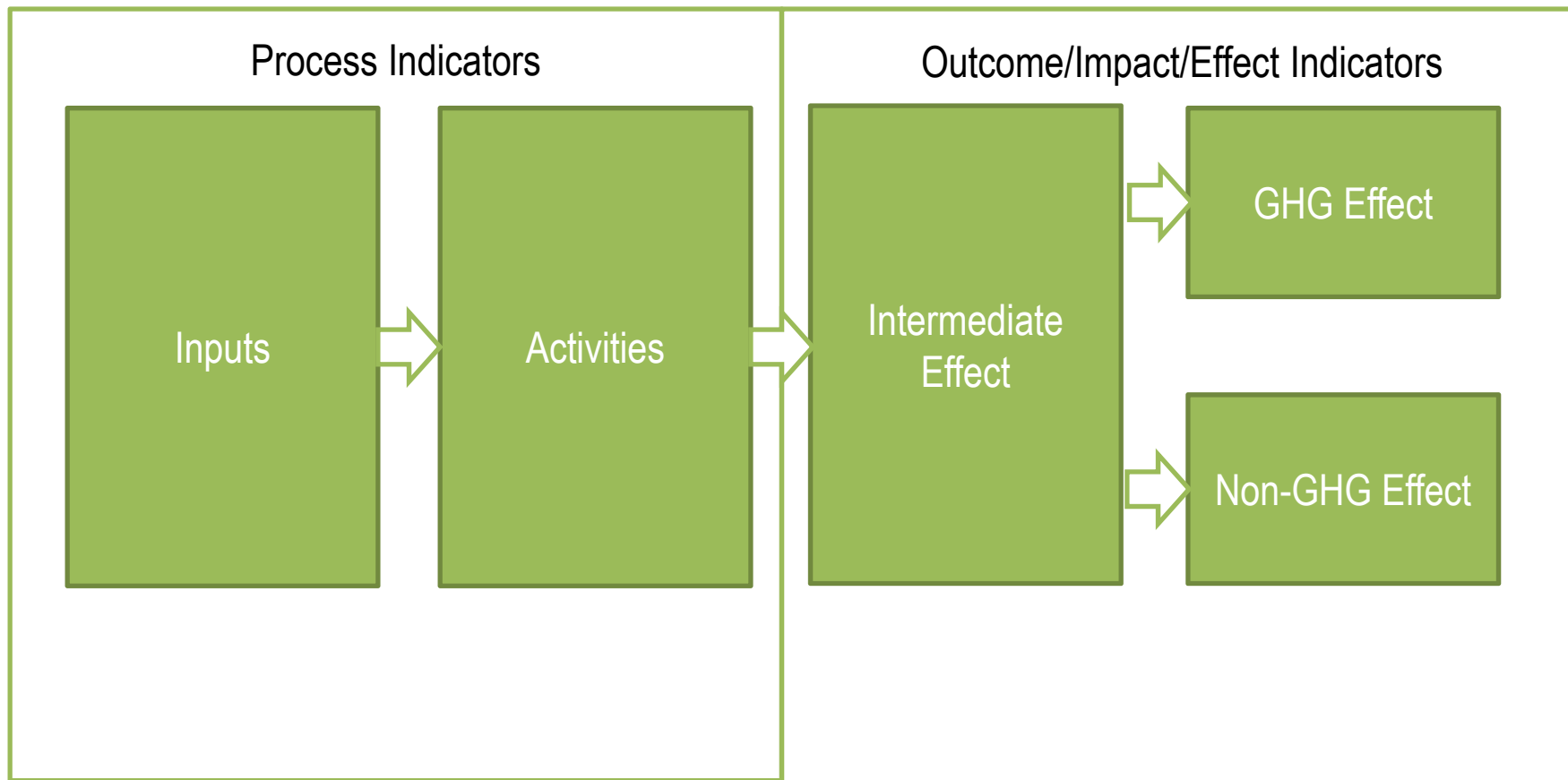
Type of MRV	Method	Data requirements
<b>MRV of GHG emissions</b>		
<b>National GHG inventory</b>	<ul style="list-style-type: none"> <li>• IPCC Guidelines for National Greenhouse Gas Inventories</li> </ul>	<ul style="list-style-type: none"> <li>• Activity data and emission factor</li> <li>• Calculation methodologies for some emissions sources</li> </ul>
<b>Corporate GHG inventory</b>	<ul style="list-style-type: none"> <li>• GHG Protocol Corporate Standard</li> <li>• GHG Protocol Scope 3 Standard</li> <li>• ISO 14064-1</li> </ul>	<ul style="list-style-type: none"> <li>• Activity data and emission factor</li> <li>• Or continuous emissions monitoring system (CEMS)</li> </ul>
<b>Facility-level GHG inventory</b>	<ul style="list-style-type: none"> <li>• No universal standard</li> <li>• Source specific methods based on reporting program</li> <li>• May use guidance from relevant standards such as GHG Protocol</li> </ul>	<ul style="list-style-type: none"> <li>• Activity data and emission factor</li> <li>• Or continuous emissions monitoring system (CEMS)</li> </ul>



# TRACKING PROGRESS

Type of MRV	Method	Data requirements
<b>Goals</b>	<ul style="list-style-type: none"> <li>GHG Protocol Mitigation Goal Standard</li> </ul>	<ul style="list-style-type: none"> <li>GHG inventory</li> <li>Transferable emissions units</li> <li>Baseline scenarios in case of baseline scenario goals</li> </ul>
<b>Policies</b>	<ul style="list-style-type: none"> <li>GHG Protocol Policy and Action Standard</li> <li>Climate Policy Implementation Tracking Framework</li> </ul>	<ul style="list-style-type: none"> <li>Defined by GHG quantification method and the policy type</li> <li>Baseline scenario and policy scenario</li> <li>Typically include activity data, emission factors, and socioeconomic data</li> <li>Performance indicators</li> </ul>
<b>Projects</b>	<ul style="list-style-type: none"> <li>CDM; GHG Protocol Project Standard; Gold Standard; VCS</li> </ul>	<ul style="list-style-type: none"> <li>Defined by GHG quantification method, project type</li> <li>Project baseline</li> <li>Typically include activity data, emission factors, and socioeconomic data</li> <li>Performance indicators</li> </ul>
<b>Non-GHG effects</b>	<ul style="list-style-type: none"> <li>No internationally accepted standard</li> </ul>	<ul style="list-style-type: none"> <li>Defined by type of non-GHG effect under consideration</li> <li>Typically include socioeconomic data related to employment, health, and air quality</li> </ul>

# POLICY IMPLEMENTATION TRACKING



# IDENTIFY ROLES AND RESPONSIBILITIES, BUILD CAPACITY

Type of MRV	Implementation	
	Measurement and Reporting	Verification
<b>MRV of GHG emissions</b>		
<b>National GHG inventory</b>	National governmental ministry, department, agency, external consultant	Peer review by domestic experts; UNFCCC Expert Review (for Annex I Parties only); Review under IAR and ICA processes
<b>Corporate GHG inventory</b>	Company itself; consultant may support the process	Verification by the company itself (self-auditing) or a third party verifier.
<b>Facility-level GHG inventory</b>	Facility itself; consultant may support the process	Verification by the facility itself (self-auditing) or a third party verifier.
<b>MRV of mitigation actions</b>		
<b>Goals</b>	Government, civil society, or external consultant	Depends on UNFCCC rules (ICA and IAR processes)
<b>Policies</b>		
<b>Projects</b>		
<b>Non-GHG effects</b>		
<b>Implementation</b>		

# MRV BUILDING BLOCKS

## Measurement

- Accounting methods
- Data collection
- Frequency of assessment

## Reporting

- Reporting requirements
- Frequency of reporting
- Database/reporting platform and format

## Verification

- Verification guidance
- Rules and procedures

## Institutional arrangements

- Roles and responsibilities
  - Coordination
  - Leadership

Capacity: Human, technical, financial, and institutional





# THANK YOU

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