

## IGES-WRI Side Event

Kelly Levin, PhD

### Aims of paper

- Assess the advantages and disadvantages of different commitment types from the perspective of measurement, reporting, and verification of emissions and emissions reductions in order to facilitate the design of commitments that achieve measurable emissions reductions.

## Why?

MRV is critical at various points of the commitment design and implementation process:

- Before implementation, during implementation, after implementation

The ease with which emissions and emissions reductions associated with mitigation commitments can be measured is critical for:

- enhancing transparency, accountability, comparability, domestic GHG management, and accurate tracking of global emissions reductions.

## Limitations of the paper

- Cannot focus on overall ambition without more knowledge of Parties' post-2020 offers.
- Do not comment on the question of differentiation, or which countries should take on which types of commitments.
- Do not offer a comprehensive discussion of what GHG emissions accounting rules for the post-2020 period could or should look like.
- Many other factors relevant to choice of commitment type.

## Types of mitigation commitments

- Economy-wide goals
- Sectoral goals
- Policies
- Projects

## Economy wide goals

Emissions reduction goals applied to a Party's entire jurisdictional boundary and may include all sectors, ranging from energy to land use.

- *Assessment of measurability:*
  - Largely be done using a Party's GHG inventory, which Parties develop as part of reporting requirements under the UNFCCC.
  - Comparability could be challenging with some goal types.
  - Nevertheless, in general, if common accounting rules are advanced, measurability is maximized with economy-wide goals as opposed to the other commitment types.

## Sectoral goals

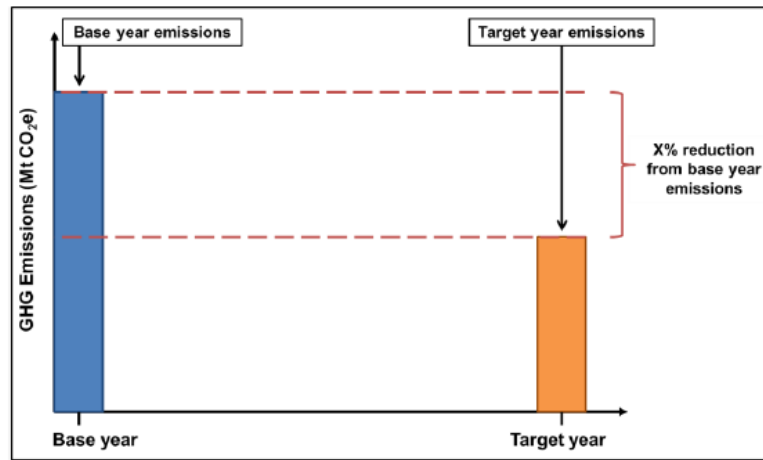
Emission reduction goals that apply to one sector and are often put forward as a way to focus mitigation effort and resources on the highest-emitting sector.

- *Assessment of measurability:*
  - Could have differences in sectoral definitions.
  - Could be leakage of emissions to other sectors.
  - Therefore, may be more difficult to estimate emissions reductions ex-ante beyond the sector across the entire Party boundary.

## Types of economy-wide and sectoral goals

- Base year
- Intensity
- Baseline scenario
- Fixed level

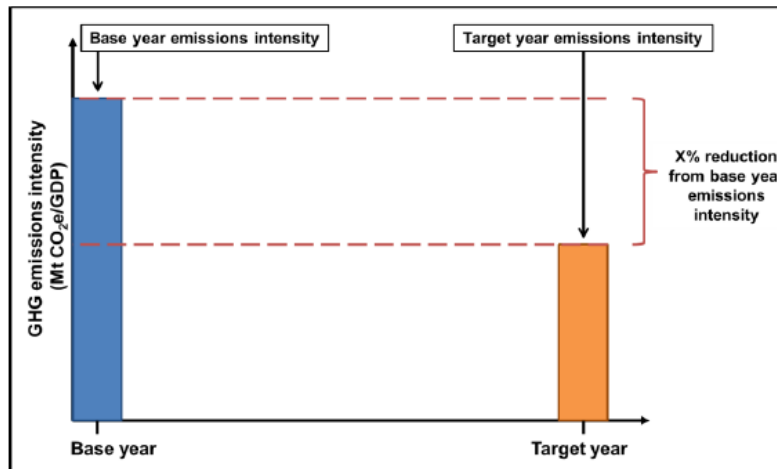
## Example of a base year goal



## Base year 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.

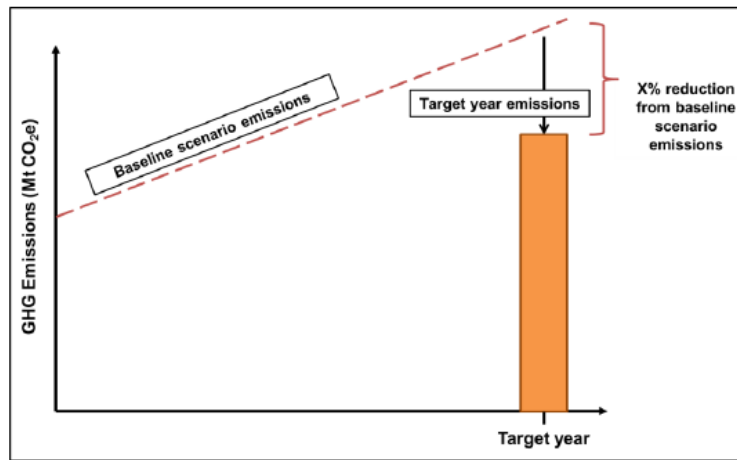
## Example of intensity goal



## 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.

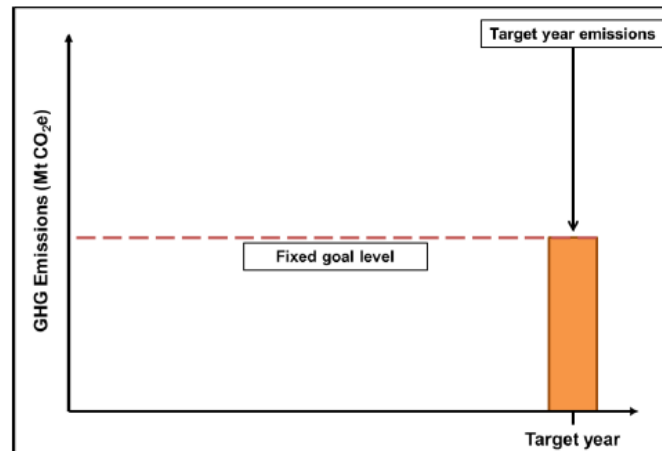
## Example of a baseline goal



## 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 fixed level goal



## Fixed level goals

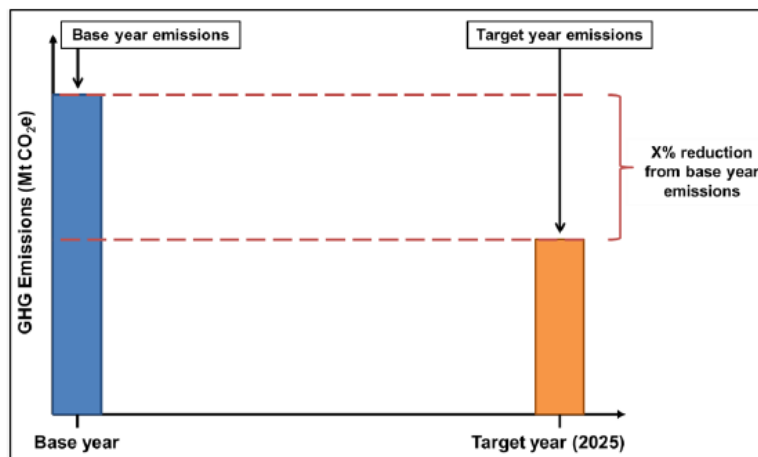
- *Assessment of measurability:*
  - Emissions level associated with the target year is defined by the goal itself.
  - No non-GHG data are involved nor do models have to be used for projections.



## Timeframe of economy-wide and sectoral goals

- Single year
- Multi-year
- Peak-and-decline pathway

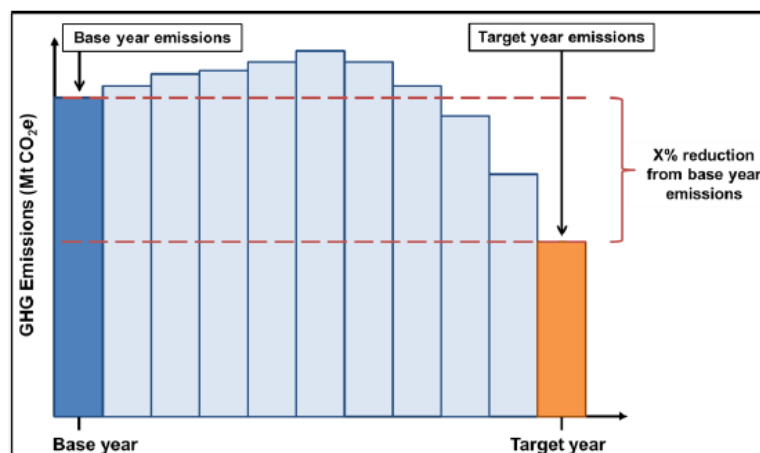
## Example of single year goal



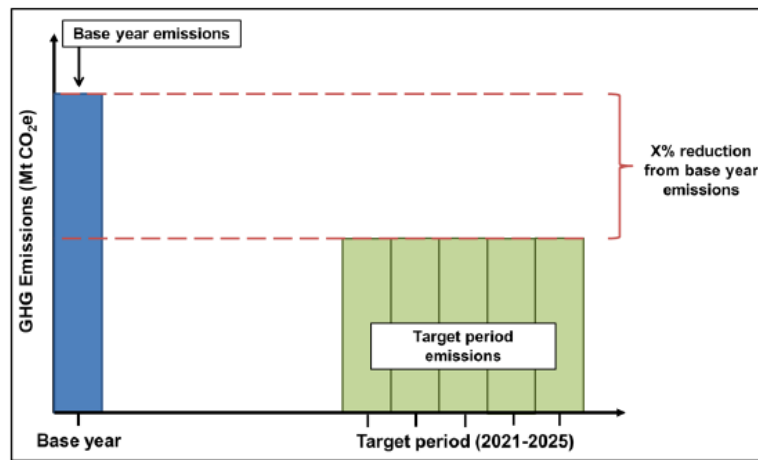
## Single year goals

- *Assessment of measurability:*
  - Difficult to understand the cumulative emissions pathway ex-ante associated with a single year goal.
  - Less measurable than multi-year goals when it comes to understanding cumulative emissions over a longer time period.
  - Challenges with regard to tracking unit transfers with a single year goal, especially if older vintages of units are retired in the target year.

## Disadvantage of single year goal



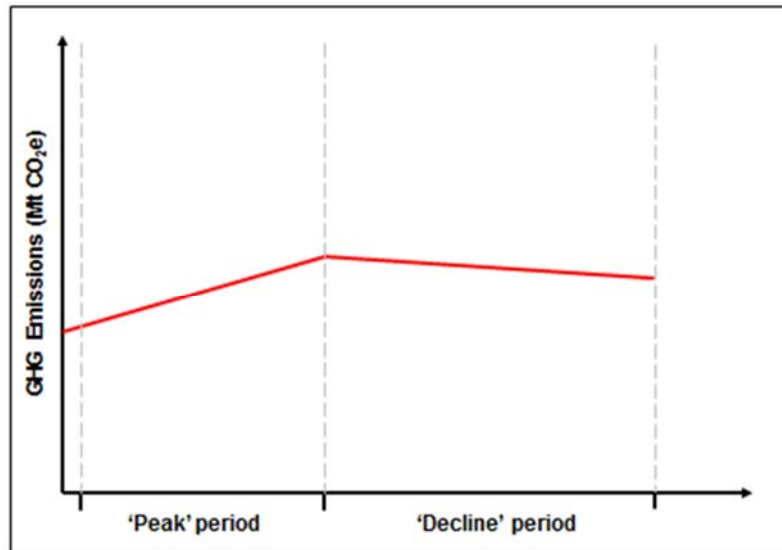
## Example of multi-year goal



## Multi-year goals

- *Assessment of measurability:*
  - Enable an understanding of emissions levels throughout multiple years rather than just the single target year.
  - Longer emissions pathways can be compared across countries, as opposed to emissions in a single year only.

## Peak-and-decline pathway



## Peak-and-decline pathway

- *Assessment of measurability:*
  - Provides more information than a single year goal because it incorporates one or more interim targets before the target year
  - Cumulative emissions reductions can be better estimated than with a single year goal (assuming a linear extrapolation between target years).
  - Unlike multi-year goals, however, peak-and-decline pathways may not specify the emissions level for a period of consecutive years.

## Policies

- *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.

## Projects

- *Assessment of measurability:*
  - Diversity of methods, data sources, and project types.
  - May not be framed explicitly in terms of emissions reductions, but could instead be framed in terms of a desired outcome.

## Recommendations

*On the scope of the commitment:*

- To maximize measureable emissions reductions, countries should embrace economy-wide goals. At the very least, countries that set an economy-wide goal for the pre-2020 period should also set one for post-2020. Parties with pre-2020 economy-wide goals include most major emitters, including all Annex I Parties as well as Brazil, Mexico, South Africa, and South Korea, among others.
- If a country sets a sectoral goal, it should target the highest-emitting sector and achieve meaningful emissions reductions in that sector.

## Recommendations

*On the type of goal:*

- Commitments framed as goals (either economy-wide or sectoral) should be framed as reductions from a base year or to a fixed level. For countries that need to accommodate short-term emissions increases (e.g., major emerging economies), base year or fixed level goals should still be adopted, even if they are framed as an increase in emissions from a base year (as opposed to a reduction from a base year).
- Countries considering intensity or baseline scenario goals should adopt intensity goals given the variety of measurability challenges related to baseline scenario goals. Over the long term (e.g., from 2030 onward), Parties with relative goals should take on absolute goals that are framed as a reduction from a base year or a fixed level goal.

## Recommendations

### *On the timeframe of the goal:*

- Parties with economy-wide and sectoral goal commitments should take on multi-year instead of single year goals.
- If emissions growth is necessary for a short period, peak-and-decline pathways are preferable to single year goals because the overall emissions trajectory is made more transparent, and cumulative emissions can be more easily assessed. Peak-and-decline pathways should be designed to ensure that global emissions peak by 2020 and are reduced below 1990 levels by 2030 for a likely chance of limiting warming to 2°C.

## Recommendations

### *On policies and projects:*

- Given the measurability challenges related to policies and projects, Parties should undertake efforts to:
  - adopt standardized methods to attribute and report changes in emissions to individual policies and projects;
  - assess and report leakage from policies and projects, where relevant; and
  - adopt policies that facilitate long-term transformation, leading to significant emissions reductions in the most carbon-intensive sectors.