

Climate MRV for Africa – Phase 2

MRV of Mitigation Actions

Quantifying Effects/Impacts of Mitigation Actions



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Project of the European Commission DG Climate Action

EuropeAid/136245/DH/SER/MULTI

Amr Osama Abdel-Aziz, Assen Gasharov, Mike Bess
and Laura Lahti

Team Leader and Key Experts

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Agenda

- Definition of Policies and Actions
- Identification of Effects
- Estimation of Effects
- Key Performance Indicators
- Challenges of Data Collection



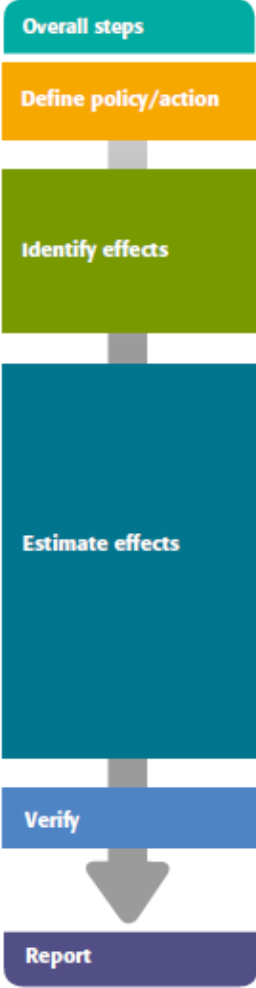
Overall Steps



Policy and Action Standard

An accounting and reporting standard for estimating the greenhouse gas effects

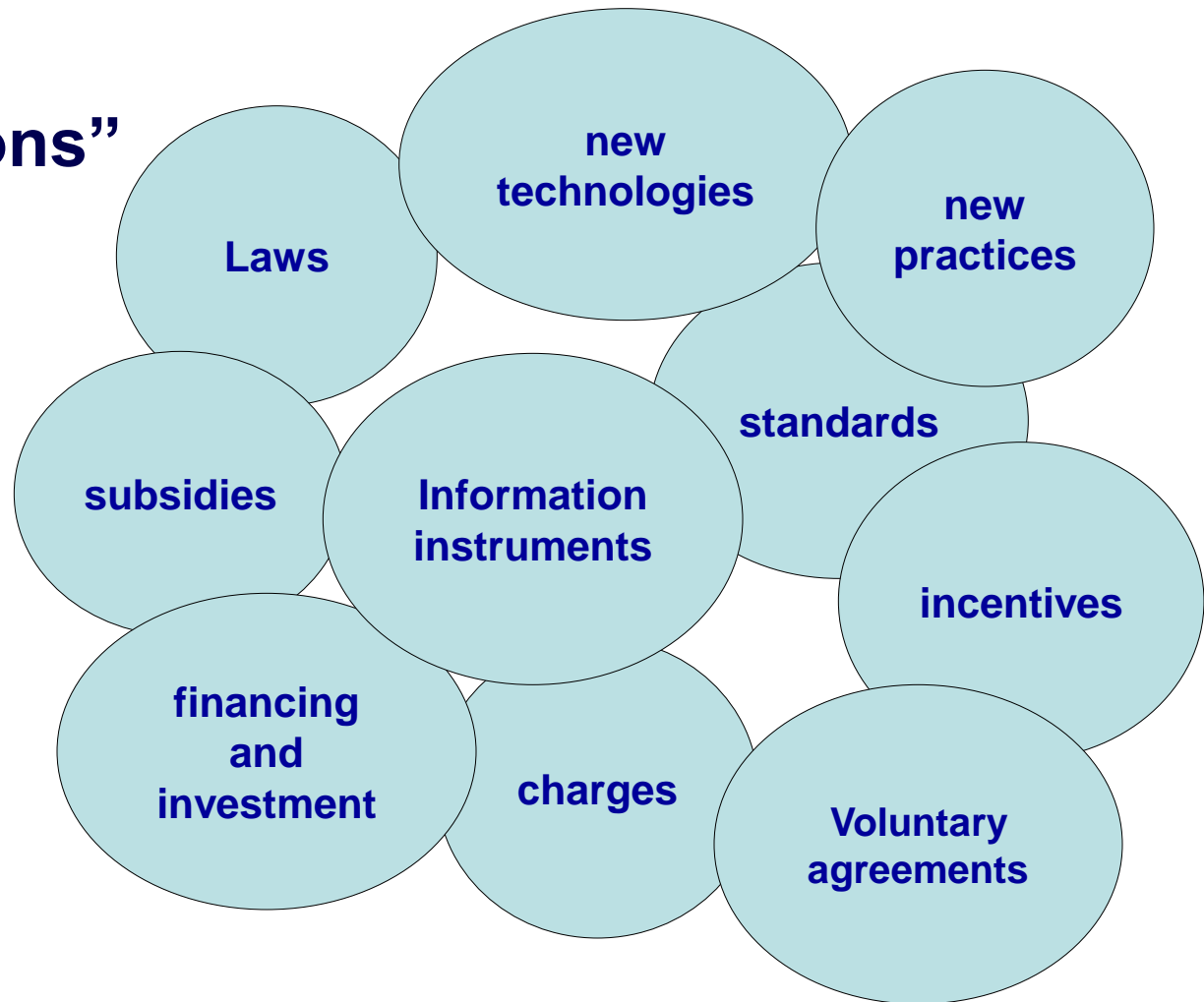
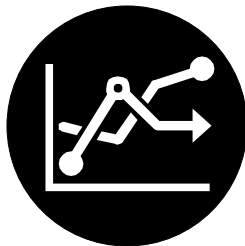
An accounting and reporting standard for estimating the greenhouse gas effects of policies and actions



* Presentation based on *Policy and Action Standard*
<http://ghgprotocol.org/policy-and-action-standard>

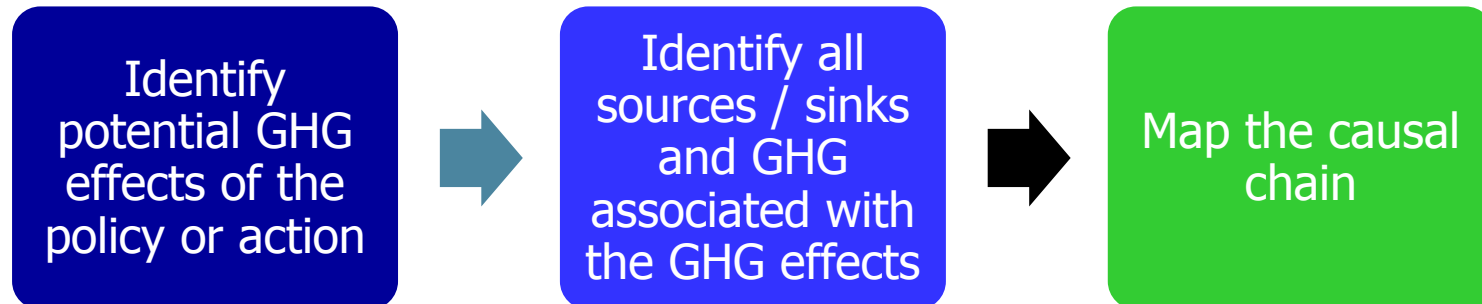
Define Policies and Actions

“Policies” and “actions”



Identifying Effects

- Step 1: Identifying potential effects of a policy or action
- Step 2: Identifying the key source and sink categories and the GHG associated to the GHG effects of a policy or action
- Step 3: Mapping the causal chain



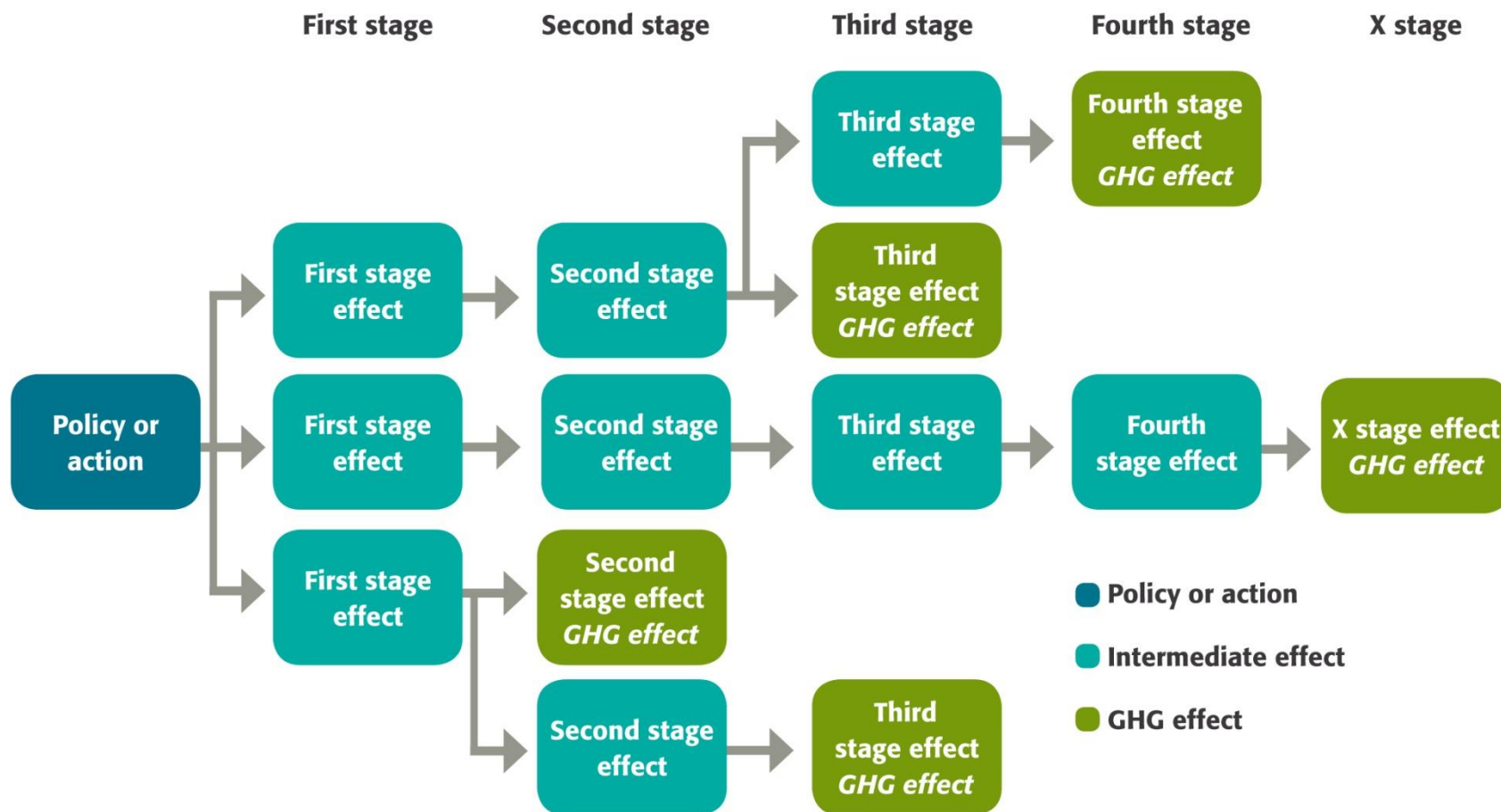
Identifying Effects

How Are Effects Identified

- Literature reviews of previous evaluation of similar policies under similar circumstances
- Consultations or panels with experts and other relevant stakeholders
- Review of environmental impact assessments and economic studies
- Sector specific methodologies or guidelines
- Expert judgment

Identifying Effects

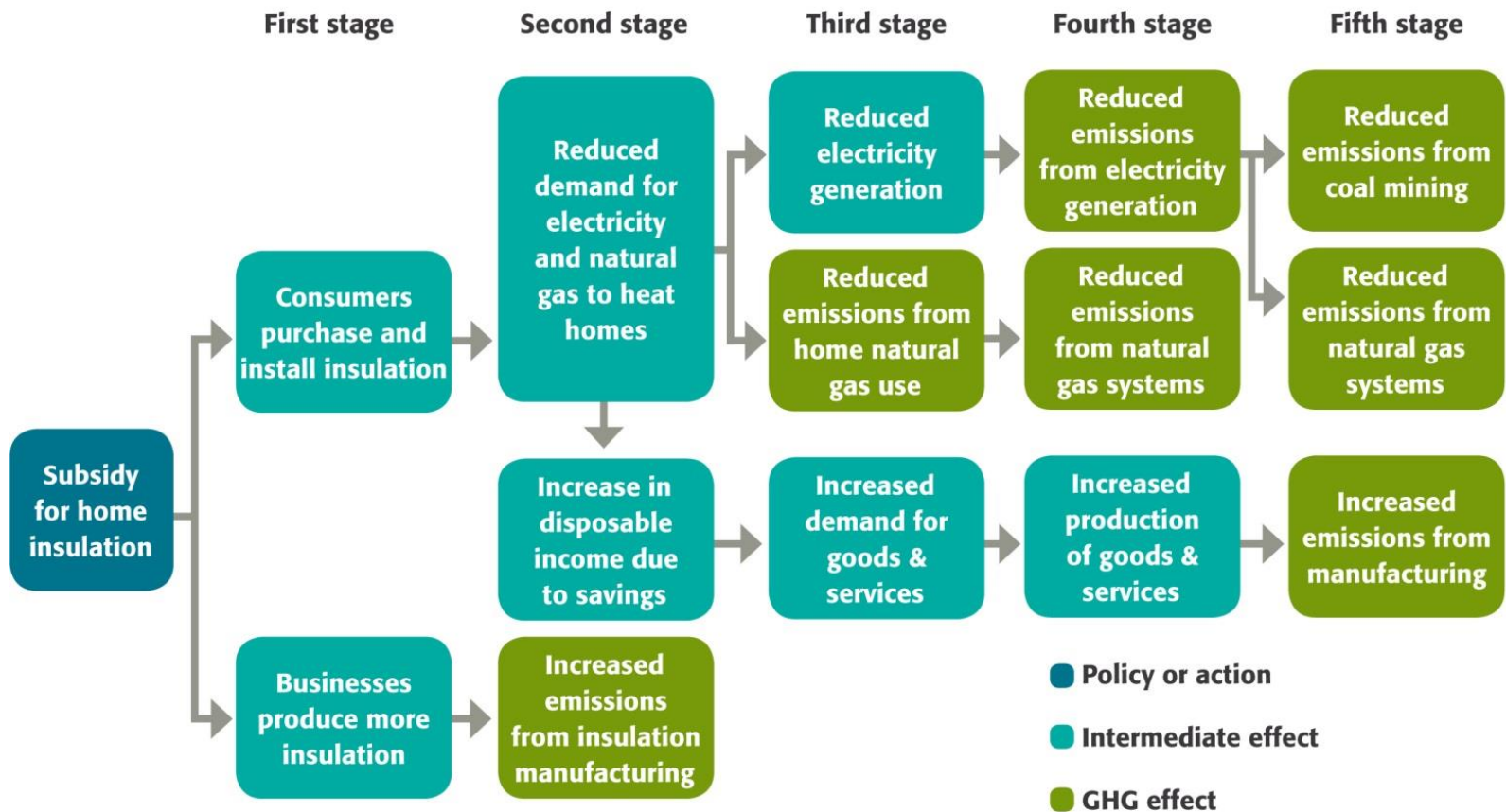
Causal Chain



Source: WRI Policy and Action Standard

Identifying Effects

Causal Chain



Estimation of Effects

- Four basic steps to estimate a change in emissions resulting from a policy or action:

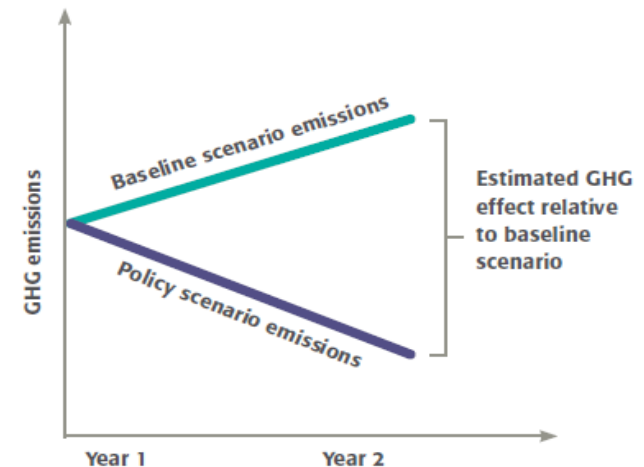
Estimate baseline emissions for each source/sink category in the GHG assessment boundary

Estimate policy scenario emissions for each source/sink category in the GHG assessment boundary

For each source/sink category, **subtract baseline emissions from policy scenario emissions to estimate the GHG effect** of the policy or action

Aggregate GHG effects across source/sink categories to estimate total GHG effect

Policy/action accounting methodology



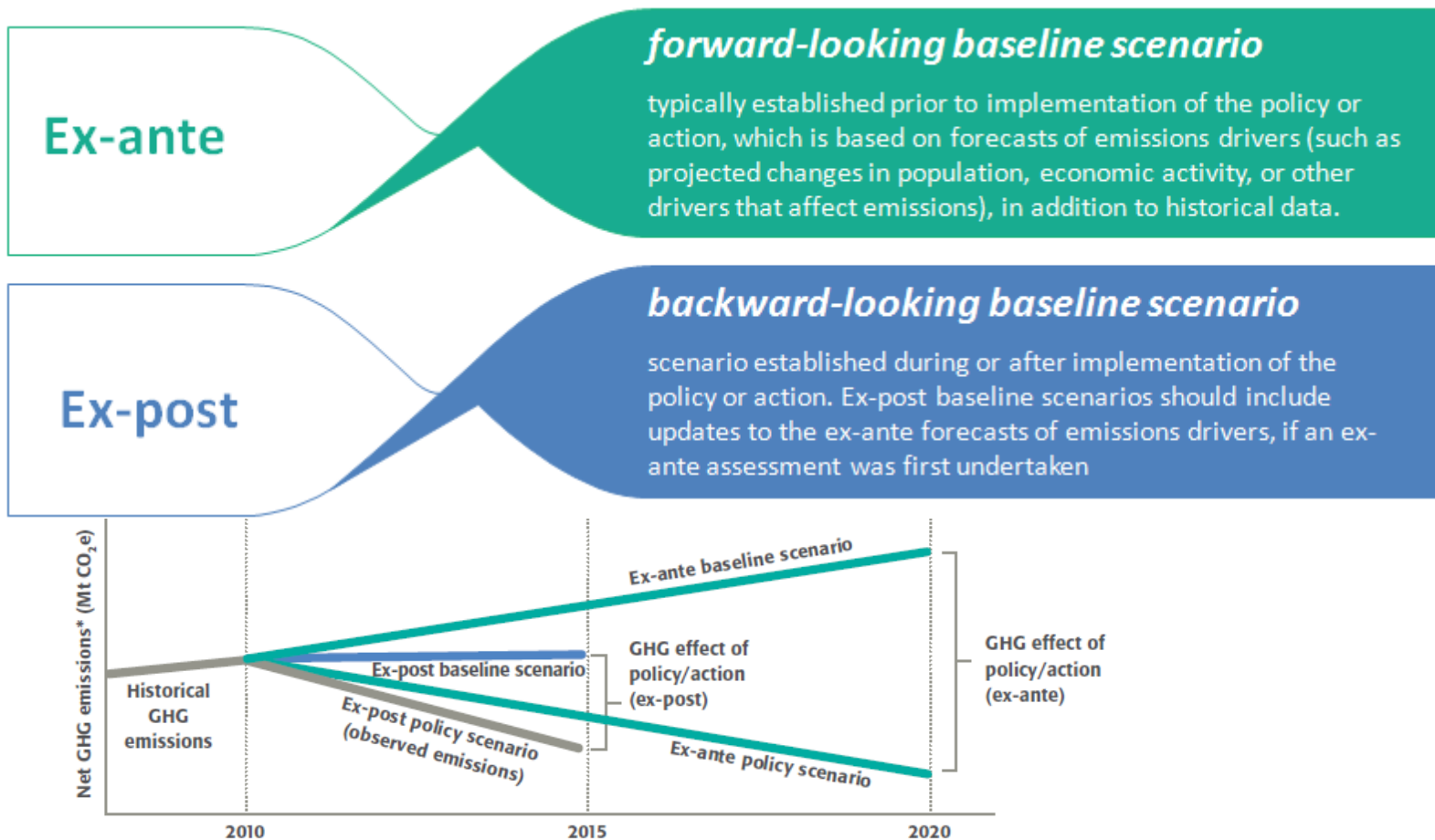
Define Baseline Scenario

The baseline scenario represents the events or conditions most likely to occur in the absence of the policy or action being assessed

- Estimating the effect of a policy or action requires a reference case, or baseline scenario, against which GHG effects are estimated
- The baseline scenario depends on assumptions related to key emissions drivers
 - Economic conditions
 - Energy prices
 - Technological development

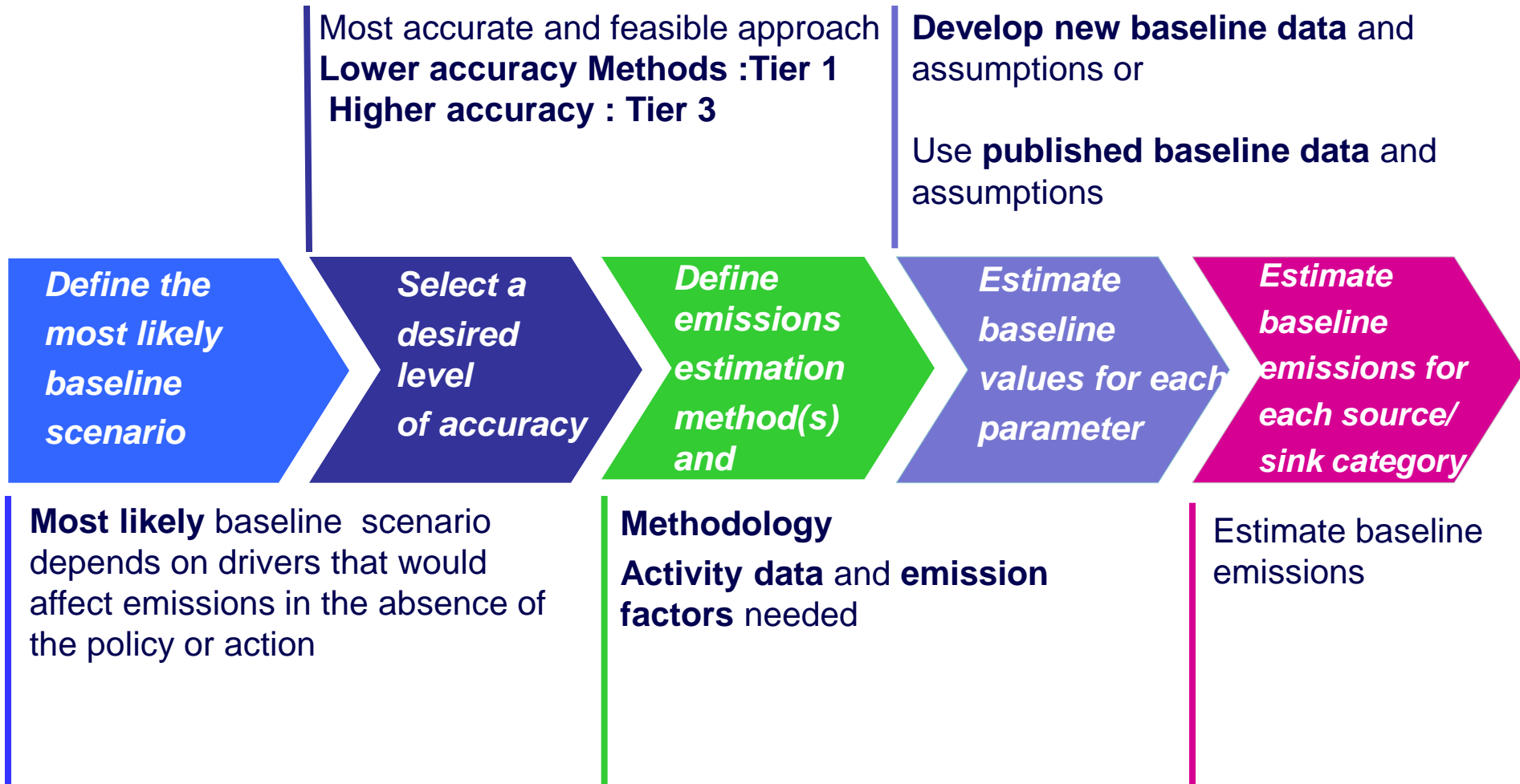
Define a Baseline Scenario

- Baseline scenarios can be determined Ex-ante or Ex-post



Note: * Net GHG emissions from sources and sinks in the GHG assessment boundary.

Baseline Scenario - Scenario Method



Defining a Baseline Scenario: *DRIVERS*

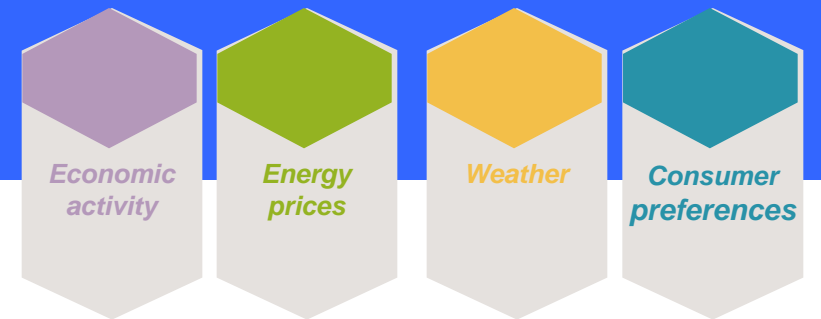
Other Policies or actions drivers

- ✓ regulations and standards
- ✓ taxes and charges
- ✓ subsidies and incentives
- ✓ emissions trading programs
- ✓ voluntary agreements
- ✓ Information instruments
- ✓ Clean Development Mechanism (CDM) projects
- ✓ voluntary market offset projects




Non-policy drivers

- ✓ socioeconomic factors
- ✓ market forces



Defining a Baseline Scenario: Level of Accuracy

Level of accuracy	Emissions estimation method	Source of data for drivers and parameters
Lower  Higher	Lower accuracy methods (such as Tier 1 methods in the <i>IPCC Guidelines for National GHG Inventories</i>)	International default values
	Intermediate accuracy methods	National average values
	Higher accuracy methods (such as Tier 3 methods in the <i>IPCC Guidelines</i>)	Jurisdiction- or source-specific data

Defining a Policy Scenario

The policy scenario represents the events or conditions most likely to occur in the presence of the policy or action being assessed

- Multiple policies or actions in the same timeframe → users may assess the policies or actions either individually or together as a package
- Policies or actions that interact with each other can be overlapping or reinforcing

Estimating GHG Emissions Effects Ex-ante and Ex-post

How to estimate the expected future GHG effects of the policy or action?



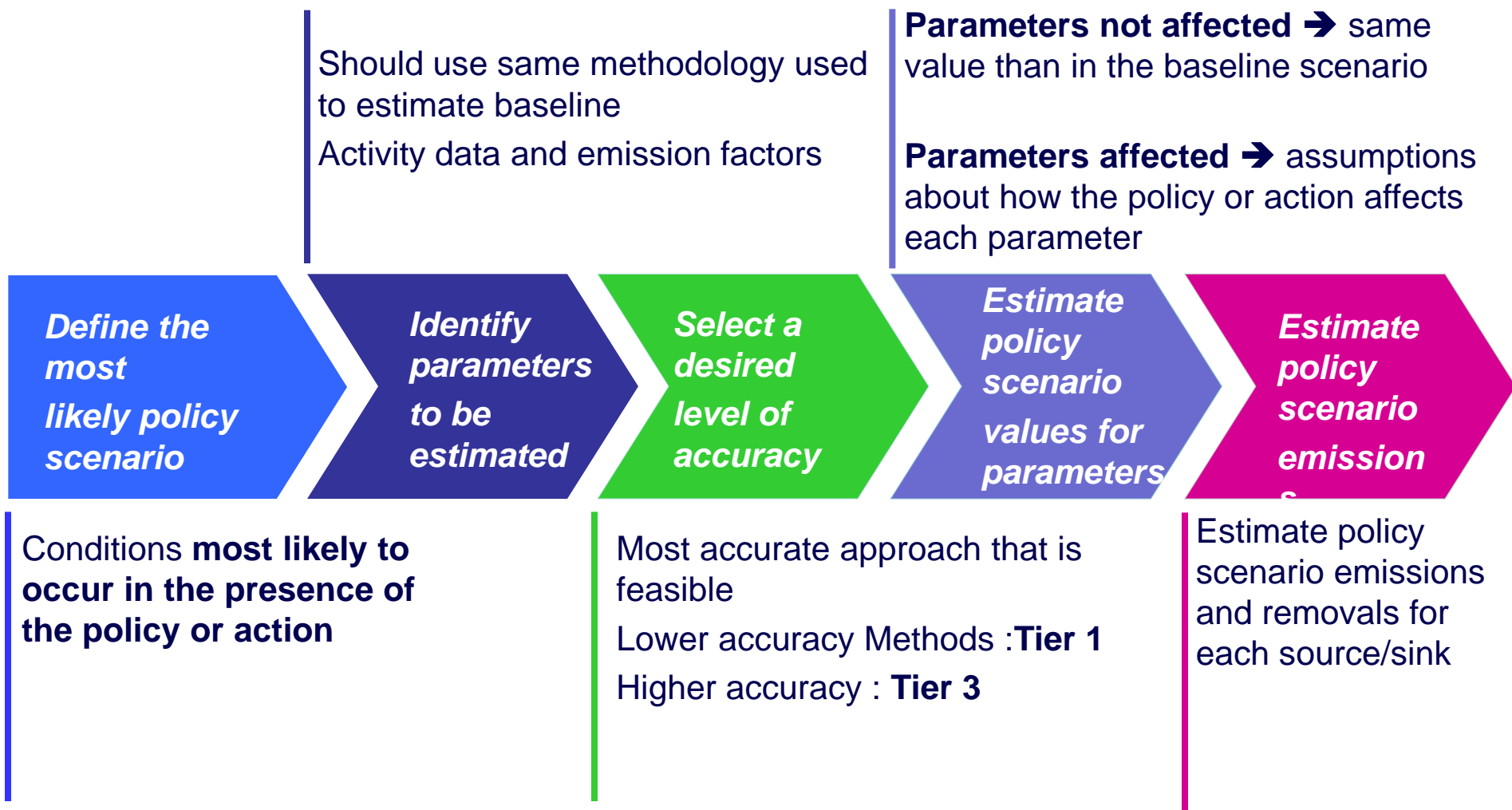
Ex-ante Assessment

How to estimate the GHG effects that have occurred as a result of the policy or action?

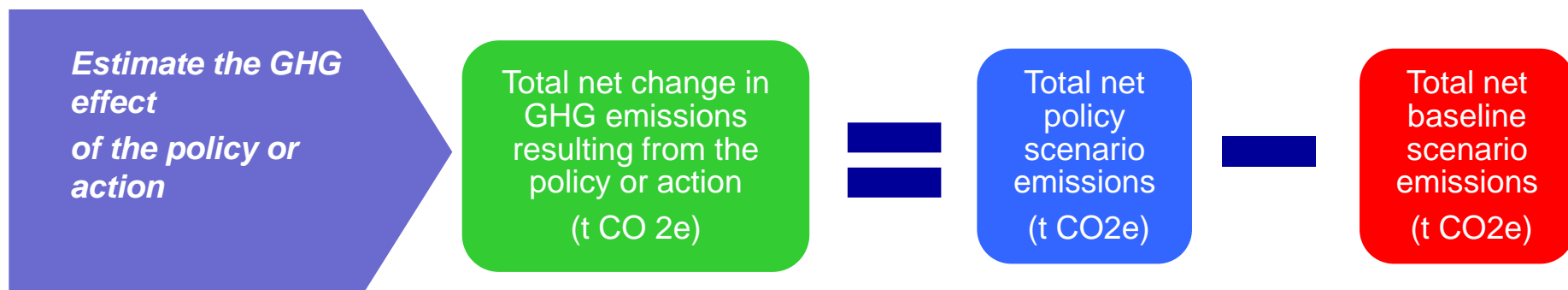


Ex-post Assessment

Policy Scenario Emissions Ex-ante



Estimating GHG Emissions Effects Ex-ante



Subtracting baseline emissions from policy scenario emissions

Policy Scenario Ex-post

Bottom-up: at the source, facility, entity, or project level

Top-down : macro-level , jurisdiction or sector level

May be useful to conduct surveys with consumers or businesses affected by the policy or action

Monitor policy scenario and Update baseline
Ex-post assessment (if applicable)

Select an ex-post assessment method

Select a desired level of accuracy

Estimate policy scenario emissions

Estimate the GHG effect of the policy or action

Ex-post policy scenario emissions are **observed based on data collected during policy or action implementation**

Baseline emissions should be recalculated

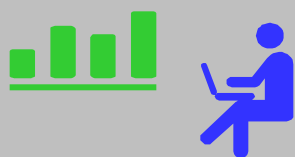
Most accurate approach that is feasible

Lower accuracy Methods : Tier 1
Higher accuracy : Tier 3

Subtract baseline emissions from policy scenario emissions for each source/sink category

Monitoring Performance: Key Indicators

Monitoring performance during the policy implementation period serves two related functions



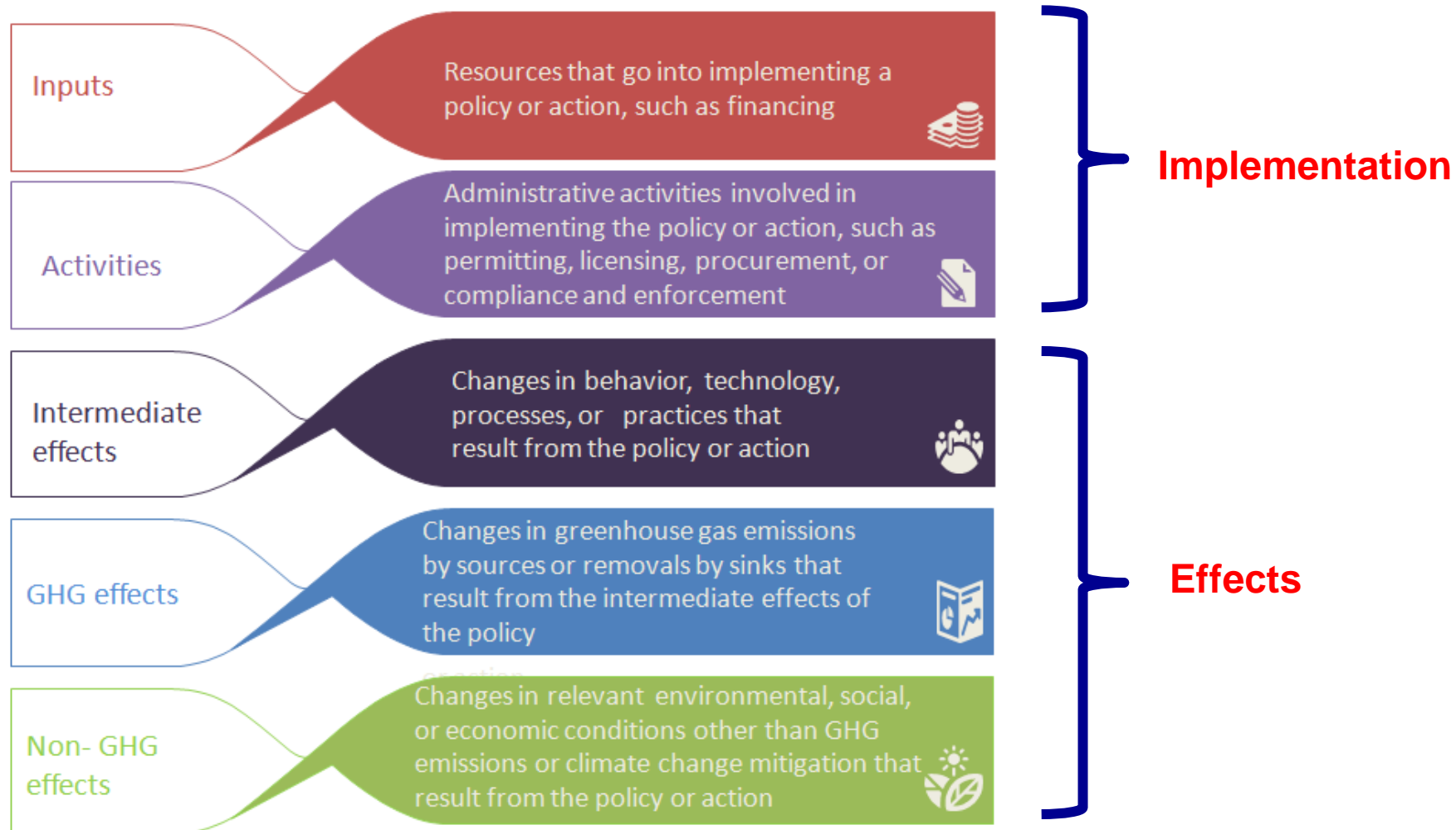
Monitor implementation

progress: whether the policy or action is on track and being implemented as planned



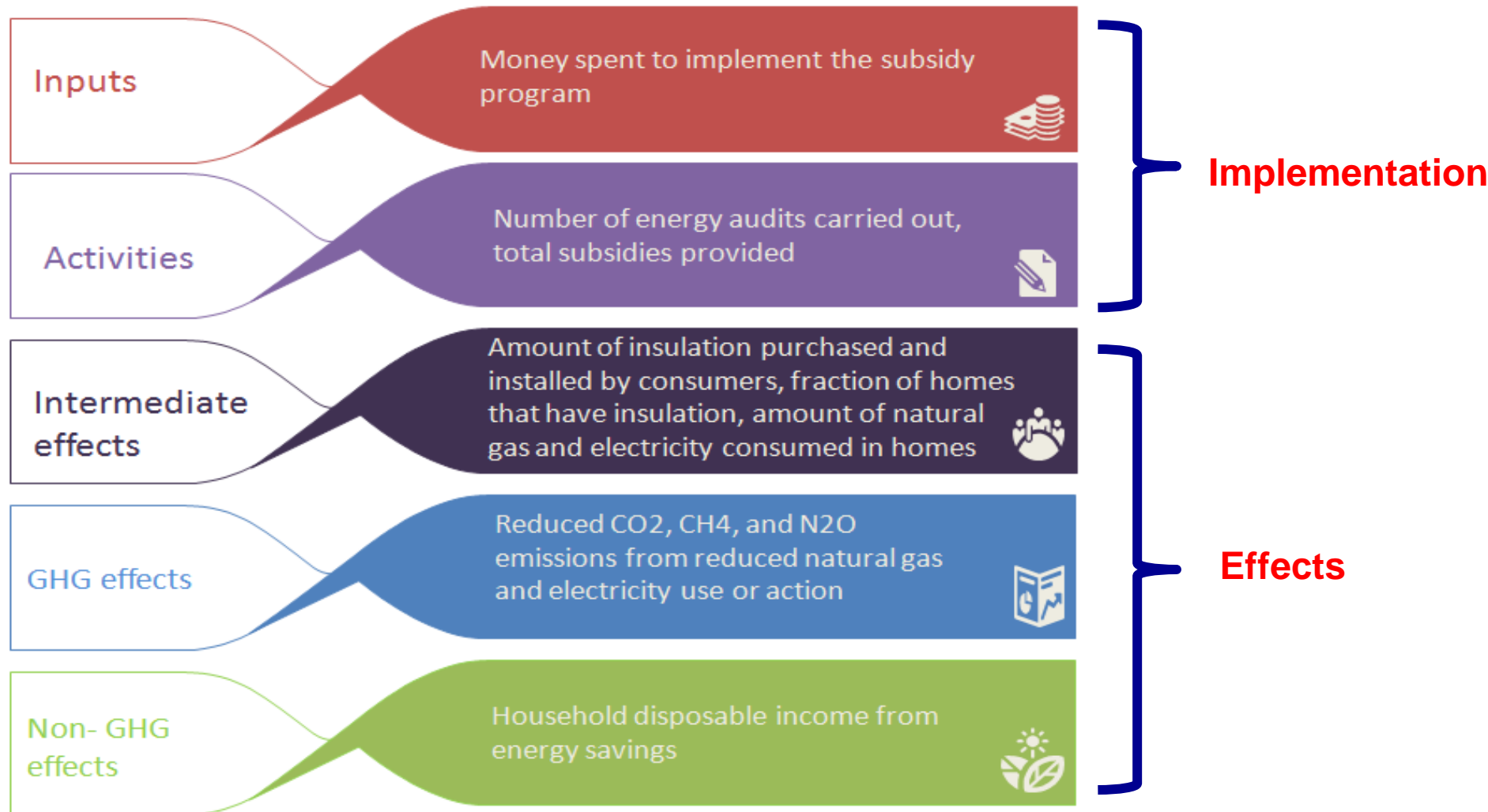
Estimate Effects: Collect the data needed for ex-post assessment of GHG, Non-GHG, and intermediate effects

Define Key Performance Indicators - Types



Key Performance Indicators

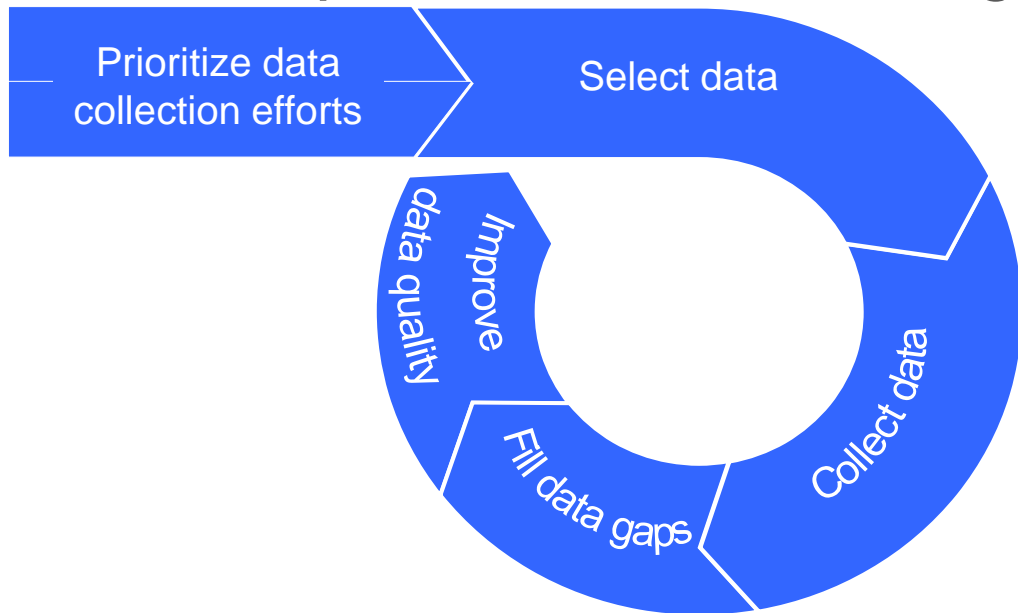
Home Insulation Subsidy Program



Challenges of Data Collection

Developing a GHG assessment of a policy or action is typically a data-intensive process. The quality of the GHG assessment depends on the quality of the data used to develop it.

Iterative process for collecting data



Prioritize data collection efforts



Collect higher quality data for those effects determined to be most significant

Challenges of Data Collection

Type of data

Primary

Data collected from specific sources or sinks

e.g. fuel use measured at a specific facility

- Better representation of the policy's specific effects
- Enables more accurate assessment
- +
- May be costly
- May be difficult to verify its quality

Secondary

Data not collected from specific sources or sinks

e.g. production data from industry associations

- Enables estimation when primary data is unavailable
- +
- More cost-effective and easier to collect
- Can estimate relative magnitude of various effects to prioritize efforts
- May not be representative
- May limit the ability for accurate assessment

Data Collection Steps

Data Compilation

- Clearly describe Data Collection Process
- How, Who and where is data stored

Data Processing

- The steps taken to further process the data should be clearly described and documented
- Details of modifications or corrections, removal of outliers and any adjustments

Quality Assurance / Quality Control

- Provide indication of the overall quality of the data and the main uncertainties.
- Established QA/QC procedures

Conclusion

- Quantifying impacts of policies and actions requires the definition of a baseline scenario
- Baseline scenario can be established ex-ante or ex-post
- Many drivers affect the definition of the baseline scenario
- Policy scenario is defined ex-ante and updated ex-post in most of the cases
- Key indicators have to be defined for monitoring effects and implementation
- Data collection for quantifying impacts may be challenging

Thank you!

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