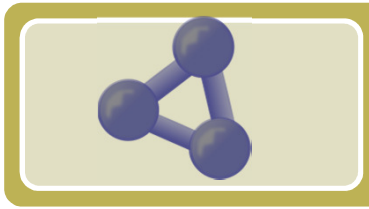
International Partnership on Mitigation and MRV

WORLD RESOURCES INSTITUTE

Designing Reporting Programs

Step 1: Determine Program Objectives

Step 2: Create an Enabling Environment



Step 3: Determine Program Structure and Requirements

Step 4: Conduct Program Review

Program Structure

Program coverage
- Who reports what

Emissions quantification
- How to calculate and monitor emissions

Reporting procedures and schedules
- What to report and how often

Reporting platforms and data disclosure
- Where to report and who has access to reported information

Quality control and assurance
- Who verifies what and how

Enforcement
- What measures to apply in case of non-compliance

Emissions quantification

- Calculation-based approaches
- Direct measurement
- Methodologies, tiers, uncertainty, GWP

Calculation approach – Activity data

- Measure the activity leading to emissions (e.g., the amount of fuel consumed) and multiply with its carbon content
- Can be used for a variety of measurements
- Uncertainty in the input values (i.e., activity data and emission factors) reflected in the calculated emissions

Activity data - examples

Type of Emission Source	Example Activity Data
Stationary combustion of fossil fuels	Fuel flow meter data, facility fuel consumption records (monthly bills)
Process emissions (e.g., cement manufacturing, pulp and paper manufacturing, adipic acid production)	Quantity of limestone used, quantity of clinker Quantity of fossil fuels used in chemical recovery furnaces, quantity of makeup chemicals added, quantity of adipic acid produced
Fugitive emissions (e.g., underground coal mines)	Quarterly or more frequent sampling of liberated CH_4 from ventilation shafts
Waste management (e.g., municipal solid waste landfill)	Measured or estimated values of historic annual waste disposal quantities,
Mobile combustion	Distance travelled, fuel consumed

Calculation approach – Mass balance

- Based on the balance of GHGs entering and exiting the facility or a defined process in the facility
- Used in situations where it is possible to directly monitor the changes in GHG levels or where carbon leaves the system in the final product
- E.g., iron and steel, fluorinated gas production

Direct measurement

- Measure emissions directly from the stacks - where air flows from the facility into the open air using Continuous Emissions Monitoring Systems (CEMS)
- Useful when different fuels and materials are used, e.g., cement
- Not practical for small emitters, facilities with multiple exhaust stacks, or fugitive emissions
- Relatively costly to implement and maintain

Emissions quantification

- Not mutually exclusive approaches
- Quantification methodologies include more than 1 method
  - Categorized in tiers
  - based on one or more of these approaches

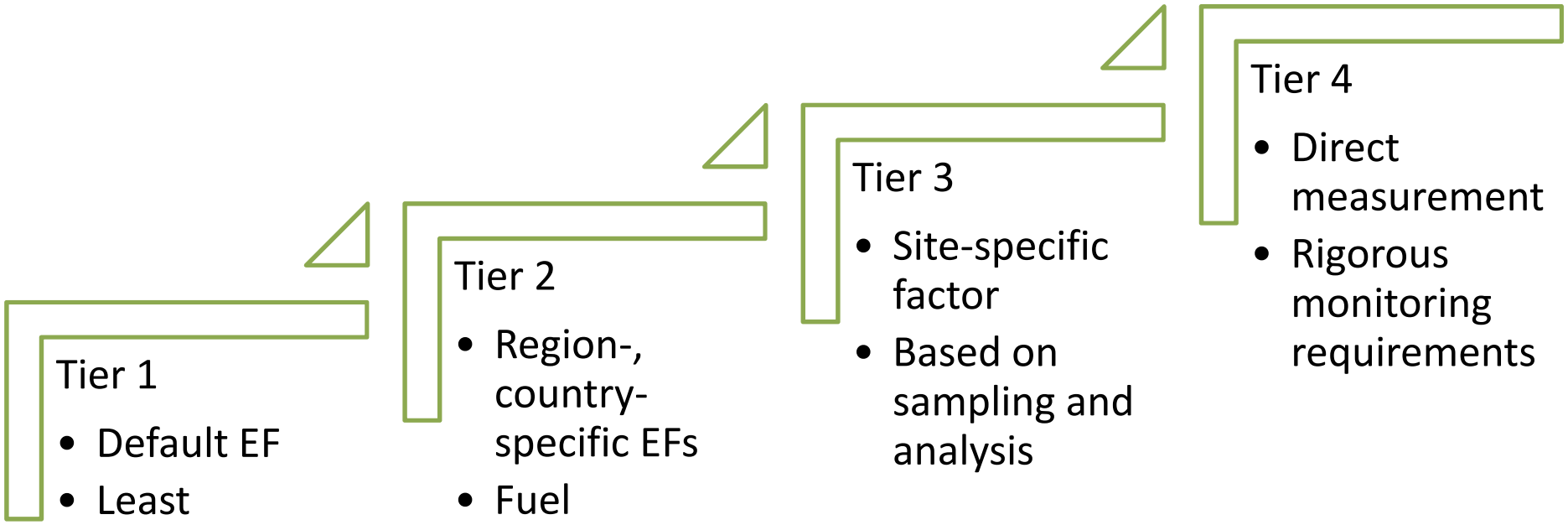
GWP values

- Programs can specify which GWP values to be used to bring consistency
- Could use the latest values or those being used in the national inventories
- When changes are made, programs can clarify whether previous years' emissions should be recalculated (relevant where entities have set targets)

Tiers

- Represent differences in terms of data quality, accuracy, uncertainty
- Allow entities/programs to strike a balance between cost and data quality; flexibility
- E.g., U.S., Australia, EU

Increasing levels of data quality, accuracy, precision



Program's role

- Prescribe calculation methodologies
  - calculation approach to be used, GWP values to be used, monitoring methods to be followed, how to obtain activity data, and how to calculate emissions factors
  - Example: detailed source-specific calculation requirements, such as the Australian, Californian, EU and the US reporting programs

- Supplement with technical guidance
  - additional explanatory material on program websites, a 'help desk' or 'hotline' to support entities

How prescriptive?

- Depends on factors such as program objectives, reporters' capacity and their level of preparedness, and the calculation approach being used, for e.g.,
  - support ETS: prescribing methods can bring greater consistency in calculations
  - Nat'l inventory – influences how methods are defined, e.g., align source and sector definitions with those used in national inventories; use published national emission factors instead of global defaults where appropriate

Checklist

- Have quantification methodologies been provided based on the need for consistency and accuracy? Have country-specific emission factors and GWP values been specified to further promote consistency in calculations?
- Are methodologies categorized in tiers? If so, have clear criteria based on factors, such as the quantum of emissions, permissible uncertainty, the type of activity data and emission factors used, been laid out to categorize methodologies in tiers?
- Have factors such as program objectives and reporters' capacity been considered in deciding how prescriptive the methodologies should be? Has the need for a pilot learning phase for reporting entities been considered?
- Have solutions, such as additional guidance and a help desk, been considered to facilitate entities in correctly applying the calculation methods?