Module 2: Defining Your SUI

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> **Module Overview:** This is the practitioner module — you will complete your SUI Specification Document by the end. Allow 3–4 hours for reading and working through the exercises. Have your product data, market research, and the Module 1 reflection answers ready.

Learning Objectives

By the end of this module, you will have:

1. Written a complete application event definition for your primary product
2. Selected and documented your baseline with source citation
3. Calculated a first-pass SUI magnitude with uncertainty range
4. Completed the taxonomy mapping section of the SUI Specification Document
5. Identified the top three verification challenges for your SUI

2.1 The Application Event: Your Starting Point

The application event is the trigger: one occurrence of this event produces exactly one SUI. Getting this right is the most important step in the entire SUI process.

The Three-Question Test

Run your candidate application event through these three questions. All three must answer "Yes":

1. **Is it operationally countable?** Can you identify, from your existing business records, exactly how many times this event occurred in the last 12 months? (If the answer involves significant estimation or assumption, the event boundary is wrong.)
2. **Is it causally proximate to the outcome?** Is this event the direct cause of the environmental change — not a proxy, not an intermediate step, not a hoped-for consequence? (If you need to add "and then..." before reaching the outcome, you may be defining the event too far upstream.)
3. **Is it stable across geography and time?** Will the same application event definition work in a new city, a new country, or three years from now? (If the answer involves significant caveats, you may need

geography-specific SUI variants — acceptable, but must be documented.)

Common Application Event Definitions by Sector

- AgTech bio-input: *"Application of [X] kg of [Product] to [1 hectare] of [crop type] cultivation"*
- EV charging: *"Delivery of [1 kWh] to an electric vehicle through a [Company]-managed charging point"*
- Water treatment: *"Treatment of [1 m³] of water to [WHO/national standard] drinking quality"*
- Industrial efficiency: *"One month of operation of [Product] in [Building/Facility] of [size/type]"*
- Circular economy: *"Collection and verified processing of [1 kg] of [material type] at [certified facility]"*

2.2 Baseline Research: Finding Your Counterfactual

The Baseline Search Protocol

Follow this sequence to find your baseline:

1. **Government statistics first:** National statistical institutes (DANE, INDEC, IBGE, INEI) publish sector-specific data annually. These are the most credible sources for baselines because they are official, nationally representative, and regularly updated.
2. **Academic literature second:** Google Scholar search: "[your sector] + [your country] + emission factor/average consumption/baseline" + recent year. Peer-reviewed studies published in the last 5 years are acceptable.
3. **International agencies third:** FAO, IEA, WHO, UNEP publish regional and global data that can serve as proxies when national data is unavailable.
4. **Industry reports fourth:** Trade associations, consulting firms (McKinsey, BCG, Systemiq) publish sector analyses. Use only if government and academic sources are unavailable, and document limitations.

Baseline Documentation Template

```
Baseline Value: _____ [unit]
Source: [Author/Agency, Year, Publication Title, URL]
Geographic Scope: [Country / Region / City]
Temporal Validity: [Year of data; update frequency]
Representativeness Note: [How well does this baseline represent your specific customers/geograph
Limitations: [Any known biases, gaps, or caveats]
Update Trigger: [Condition under which this baseline should be recalculated]
```

2.3 Calculating Your SUI Magnitude

The Standard Calculation Template

```
Step 1: Baseline value per application event
        = [value from baseline research] [unit]

Step 2: Observed value per application event
        = [value from your field data/product specs] [unit]

Step 3: Net difference
        = Step 1 − Step 2 = [difference] [unit]

Step 4: Convert to standard impact unit
        [difference] × [conversion factor from IPCC/EPA/standard source]
        = [SUI magnitude] [CO₂e/m³/kg/etc.]

Step 5: Uncertainty range
        Based on: [sample size, measurement method]
        Range: ± [N]% at 95% confidence
        Calculation: [standard deviation / sqrt(n) × 1.96]

SUI MAGNITUDE: [Step 4 result] ± [Step 5 range] [unit]
```

Where to Find Conversion Factors

- **GHG emission factors:** IPCC AR6 Annex II (downloadable from ipcc.ch); EPA Emission Factors Hub; DEFRA conversion factors (UK, widely used internationally)
- **Agricultural emission factors:** IPCC Agriculture, Forestry and Other Land Use (AFOLU) guidelines; FAO GLEAM database
- **Grid emission factors:** National grid operators (UPME for Colombia, CAMMESA for Argentina); IEA World Energy Outlook country data
- **Water quality conversion factors:** WHO water quality guidelines; IDEAM for Colombia

2.4 Taxonomy Mapping Exercise

For each component of your SUI, complete the following mapping:

1. Go to thegiin.org/iris-plus ? "Explore Metrics" ? filter by your sector (e.g., "Agriculture", "Energy", "Water")
2. Find the indicator that most closely matches your SUI outcome. Record: indicator name, code (e.g., PI5765), unit of measurement
3. Check if your SUI outcome aligns with an SDG target (not just an SDG goal). SDG targets are numbered (e.g., 2.4, 13.2). Record the most specific target that applies.
4. Optional: Check the EU Taxonomy Compass for your activity code and environmental objective

2.5 Identifying Verification Challenges

List the top three reasons a third-party verifier might challenge your SUI:

1. **Data gap:** Which data in your SUI calculation is estimated rather than directly measured? What would it take to directly measure it?
2. **Attribution challenge:** Is there a plausible alternative explanation for the outcome change you're claiming? How would you rebut it?
3. **Baseline contestability:** Could an investor argue your baseline overstates the counterfactual (making your SUI look larger than it is)? What evidence would you provide?

Answering these proactively in the SUI Specification Document signals sophistication and reduces verification friction.

Module 2 Deliverable

Complete the **SUI Specification Document** (template available from CTH's Impact Team). Submit to CTH at impact@cleantechhub.net for review before proceeding to Module 3.

The CTH Impact Team will provide written feedback within 5 business days. A follow-up call of 45–60 minutes will be scheduled to resolve any gaps before proceeding to SSOT design.

Next: Module 3: Building Your SSOT — data architecture for impact verification.

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