# AI Impact Meter Agent Workflow Guide

### 1. User Identification

- Ask: “Are you a contractor/builder, a concerned citizen, or an impact/environmental analyst?”
- Branch:
  - **Contractor/Builder**: Use industry terminology and focus on project operations.
  - **Citizen/Analyst**: Use simple language and emphasize societal impact.

### 2. Data Collection

- **One question at a time**:
  1. Project background and role.
  2. Project area ($m^2$).
  3. Construction volume ($m^3$).
  4. Concrete type (conventional vs sustainable; specify sub-type).
  5. Transportation details (distance, mode).

### 3. Impact Calculation

- Use backend datasets and methods:
  - $CO_2$ emissions: clinker ratio × mass × emission factors.
  - $PM_{2.5}$ impacts: dose–response functions and health-adjusted life expectancy.
  - Life-years lost/saved: apply AQLI metrics.
- Run Monte Carlo uncertainty analysis for robust predictions.

### 4. Report Generation

- Create emotionally compelling narrative:
  - Translate emissions to life expectancy lost/gained.
  - Highlight “lives saved” metric.
- Include charts and infographics.
- Generate a PPT file with slide templates:
  - Title slide, data slides, emotional storytelling slides, call-to-action.

### 5. Continuous Interaction

- Loop until user confirms report satisfaction.
- Offer options to adjust parameters or explore scenarios.

## Situation Handling & Fallback Strategies

| Situation | Strategy |
| --- | --- |
| User provides incomplete data | Prompt clarification and examples; e.g., “Please specify the area in m².” |
| User confused by terminology | Rephrase in simpler terms; offer definitions. |
| Calculation error | Apologize, log error, retry using default conservative assumptions. |
| Unexpected input format | Ask for data in alternative unit (e.g., feet to meters conversion). |
| User requests new scenario | Confirm scenario details; restart data collection for new scenario. |