Engineering Estimates for Cost, Energy Use and Refrigerant Charge Reduction for Tier I projects. When the proposed project is located in an existing facility and is undergoing a partial or full conversion, data from the existing system must be entered when available. All fields are required, unless indicated. Applicants must provide supporting documents for energy data such as screenshots from software used for modeling.

Table 1: Baseline and proposed refrigeration system characteristics determined through an engineering analysis

|  |  |  |
| --- | --- | --- |
|  | **Baseline conventional HFC system** | **Proposed ultra-low-GWP system** |
| **Refrigerant Type** | **New:** Hypothetical system using R-448A or R-449A  **Full or partial conversion in existing facility:** Refrigerant reported to RMP | Refrigerant < 10 GWP |
| **Refrigerant charge (lb)** | **New Facility:** Hypothetical estimated charge size  **Full conversion in existing facility:** Charge reported to RMP  **Partial conversion in existing facility:** Partial charge being converted | Estimated charge size for an equivalent refrigeration load as the baseline system. For microdistributed systems, provide charge size per unit and number of units. |
| **Energy Use (OPTIONAL)** | **New Facility:** Modeled data  **Existing Facility:** Modeled or measured data (if available) | **New Facility:** Modeled data  **Full or partial conversion:** Modeled data |
| **Total cost of the refrigeration system** | **New Facility:** Estimate for hypothetical R448A/R449A system  **Full or partial conversion in existing facility:** $0 |  |
| **Cost premium for the ultra-low-GWP system** | N/A |  |
| **CARB (and LADWP) funding requested** |  |  |
| **Matched funding from company** |  |  |

Table 2: Cost breakdown of the proposed ultra-low-GWP system and the hypothetical system if applicable

|  |  |  |
| --- | --- | --- |
| **Cost ($)** | **Baseline conventional HFC system (only for new facilities)** | **Proposed ultra-low-GWP system (new and existing facilities)** |
| Equipment capital cost total |  |  |
| Equipment capital cost broken down by:  Condenser/gas cooler  Refrigerated cases  Other components |  |  |
| Installation and labor costs |  |  |
| **Total upfront refrigeration system cost (sum of equipment capital cost and installation and labor costs)** |  |  |
| Annual refrigerant cost: (full charge (lb) x annual leak rate\* (%) x cost of refrigerant ($/lb)) |  |  |
| Annual energy use costs ($/kWh\*kWh/year) |  |  |
| **Total annual operating costs (sum of annual refrigerant cost and energy use costs)** |  |  |
| **Return on investment (years) based on cost premium and energy savings (if applicable)** |  |  |

\*Use RMP average annual leak rates provided in the guidelines