LCCA Project Overview – v0.03

# 📌 Project Purpose

To develop a modular and transparent Life Cycle Cost Analysis (LCCA) tool that supports new construction multifamily projects in California. The tool ingests energy simulation outputs (e.g., CBECC 2022, PVWatts), integrates construction cost databases, applies utility rate schedules, and evaluates alternate battery/PV scenarios.

# 🧰 Key Components

- LCCA Excel Dashboard Tool (formula-driven, no macros)

- Python scripts: preprocess, parse energy model data, format inputs

- Construction Cost Database (unit costs, escalation logic)

- Battery Dispatch Model (editable strategy logic)

- Utility Rate Selector (dropdown-driven)

- Emissions Calculator using EPA eGRID data

# 📁 Folder Structure

Project folders for v0.03:

- Docs/

- Inputs/

- Outputs/

- Scripts/

- Reference/

# 📌 Current Version

Version: v0.03

Validated components:

- EV Calculator validated with test inputs

- Construction Cost Database includes CA + HI markup logic

# 🧪 Scripts & Dependencies

- process\_energy\_model.py

- generate\_pvwatts\_hourly.py

- format\_lcca\_inputs.py

Dependencies: pandas, numpy, openpyxl, python-dotenv

# 📈 Roadmap

v0.01 – Construction cost + EV calculator ✅

v0.03 – Scripts, sample inputs/outputs, Excel dashboard ✅

v0.04 – Python + Excel integration 🔄

v1.0 – Public release 🟦