



### NEW CONSTRUCTION & MAJOR RENOVATION OBJECTIVE

Hawai'i Energy has traditionally provided prescriptive rebates for new construction projects using the relevant building energy code as a baseline. To identify new construction projects in the design phase, Hawai'i Energy offers incentives to building owners and designers who use energy models to create a cost-effective design before construction begins.

Hawai'i Energy works with customers who have new construction projects (*new building and existing building major renovations*) to ensure energy models meet the intent of the rebate and that considerations for energy efficiency have been made.

### ELIGIBLE PROJECTS

Eligible customer types or project types include the following:

- New commercial or multifamily buildings
- Major renovation of an existing structure requiring a building permit
- Major change in occupancy or addition to an existing facility

New construction and/or major renovation projects qualify for an incentive or rebate at various stages of the design and construction process. We define those stages as:

1. **Conceptual Schematic**
2. **Design Development**
3. **Construction Phase**

In the first two stages, Conceptual Schematic and Design Development, projects take an **Energy Model Approach (EMA)** to receiving a rebate.

Once a permit has been issued, adjusting the design based on the results of an energy model becomes unfeasible, and thus projects take a **Systems Approach (SA)** to calculating energy savings and receiving a rebate. A **SA** incentive application must be received by Hawai'i Energy before a project reaches substantial completion.

### ENERGY MODEL APPROACH (EMA)

*A holistic analysis of a building's design performance that leverages the interactive efficiency effects of various systems.*

### Requirements

*Project is in the Conceptual Schematic or Design Development stage.*

- All projects must show a minimum of 10% increase in energy efficiency over a base code design (applicable version of International Energy Conservation Code (IECC) required for the building permit).
- Energy models must simulate whole building performance showing design/floor plan, estimated electricity consumption, and energy and demand calculations with the source of input parameters. Reports that meet the above are accepted from DOE2 eQUEST, EnergyPlus, OpenStudio, BEM Project Portfolio, Carrier HAP, Trane TRACE, and/or other Hawai'i Energy-approved modeling software. Open-source modeling software is recommended.



### Incentive Amount

The incentive is based on the energy savings predicted by the model. The overall incentive is capped at \$200,000 and paid across two milestone stages:

- Energy Model Report and Presentation: Up to \$5,000 for the cost of the report and \$1,000 to the building owner/developer plus \$1,000 to the architect/designer for a presentation of the different energy options shown in the model.
- Post-construction: An energy savings rebate (calculated at \$0.12/kWh) for the savings predicted by the energy model.

Note: As of June 2022, the total EMA incentive is estimated between \$0.82 and \$1.24 per square foot for multifamily buildings.

### Application Process

1. **Provide the following via email to the appropriate Energy Advisor or [HawaiiEnergy@leidos.com](mailto:HawaiiEnergy@leidos.com):**
  - Completed and signed Hawai'i Energy [Commercial Incentive Application](#)
  - Completed and signed IRS [Form W-9](#) for the recipients of the incentives

2. **Attend kick-off meeting.**

Building owner/developer and architect/designer meet with Hawai'i Energy to discuss project details, program timeline, and expectations.

3. **Provide schematic or conceptual drawings and equipment specifications:**

- Electrical plan (including lighting schedule)
- Mechanical plan (including equipment schedule)
- Architectural plan
- Equipment specifications

4. **Provide estimated project costs (vendor/subcontractor quote, if available):**

- Lighting equipment and labor
- Mechanical (HVAC) equipment and labor
- Other equipment and energy efficiency measures (i.e. Energy Star appliances, solar water heating, garage demand ventilation control, etc.)

5. **Provide energy model report and presentation.**

Energy Model Report

- Provides all inputs and assumptions used to build the energy model such as:
  - Building load profiles
  - Building shell parameters
  - Airflow
  - Space conditioning
  - Appliance schedules
  - Miscellaneous loads
  - Lighting
  - Power generation and energy storage (as applicable)



- Verifies that the design is at least 10% more energy-efficient than the baseline (applicable version of IECC required for the building permit).
- Simulates whole building performance showing design, floor plan, and estimated electricity consumption (compares baseline with proposed design).
- Provides energy and demand calculations with the source of input parameters for the following:
  - Baseline model
  - Enhanced or actual design

<b>BASELINE</b> (Applicable IECC version)	<b>ENHANCED</b> (>10% more energy efficient)	<b>ESTIMATED SAVINGS</b>	<b>POTENTIAL REBATE</b>
Estimated annual consumption (kWh)	Estimated annual consumption (kWh)	Energy savings (kWh)	Energy rebate at \$0.12/kWh

Architect/designer provides the final design and energy model report with expected project savings. Hawai'i Energy reviews the report and learns about model assumptions and outcomes during the architect/designer's presentation. After verifying the predicted energy savings, Hawai'i Energy pays up to \$5,000 for the cost of the energy model, \$1,000 to the building owner/developer, and \$1,000 to the architect/designer.

### 6. Complete project design, permitting, and construction.

Architect/designer communicates with Hawai'i Energy on project progress and any significant changes to construction timeline and scope that deviate from the energy model inputs.

### 7. Provide post-construction documents and additional documentation as needed.

Once the energy efficiency measures have been installed, an electronic copy of the as-built plans must be provided to Hawai'i Energy as confirmation that equipment was installed per the energy model inputs. Major deviations from the model inputs could result in a lower incentive paid in the post-construction phase. Engineering calculations may be requested to confirm energy savings. In some cases, an updated energy model may be requested to recalculate the energy savings. Hawai'i Energy will request an inspection to verify installation of energy efficiency measures.

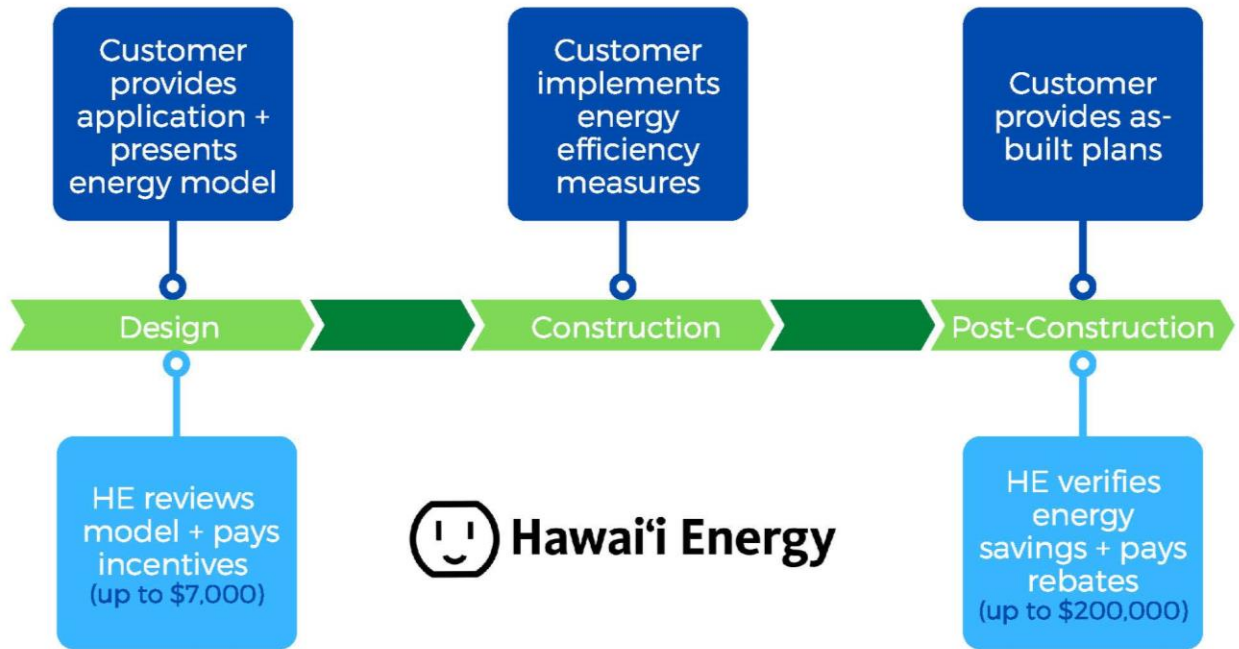
### 8. Receive final rebate.

Once the calculations are approved by Hawai'i Energy, the rebate is paid for the energy savings predicted by the final energy model. The rebate for this program year is capped at \$200,000.

The following diagram illustrates the general application and rebate process for **EMA** New Construction & Major Renovation projects. It is intended for illustrative purposes; actual process and submissions may differ on an individual project basis.



# Energy Model Approach





### SYSTEMS APPROACH (SA)

*A straightforward method that encourages designers to identify and incorporate energy-efficient equipment and measures during the construction phase.*

### Requirements

*Project is in the Construction stage before substantial completion is reached.*

- Building design and construction must be code compliant.
- Lighting systems require a [COMcheck](#) or similar energy computation report that compares allowed watts/ft<sup>2</sup> per code with proposed watts/ft<sup>2</sup>.
- All other equipment must meet Hawai'i Energy minimum efficiency requirements and product compliance with industry tests and standards (e.g. AHRI or Energy Star certifications). These can be found on Hawai'i Energy's website under the [business rebates section](#).

### Incentive Amount

The incentive is based on the energy savings by system. The overall incentive is capped at \$150,000.

- Lighting rebates are calculated at \$0.12/kWh for energy savings shown by a COMcheck or similar energy computation report.
- All other equipment must qualify through standard Hawai'i Energy prescriptive or custom requirements.
  - Prescriptive rebates can be found on the [Rebates](#) page of the Hawai'i Energy website.
  - Custom rebates are calculated at \$0.12/kWh for energy savings. Custom rebate worksheets can be found at the [Custom Project Support](#) page.

### Application Process

- 1. Provide the following via email to the Energy Advisor or [HawaiiEnergy@leidos.com](mailto:HawaiiEnergy@leidos.com) prior to project reaching substantial completion:**
  - Completed and signed Hawai'i Energy [Commercial Incentive Application](#)
  - Completed and signed IRS [Form W-9](#)
- 2. Provide documentation.**
  - As-built drawings
    - Electrical plan (including lighting schedule)
    - Mechanical plan (including equipment schedule)
    - Architectural plan
  - Equipment specifications
    - HVAC equipment specifications
    - Other equipment specifications



- Industry compliance documents
  - COMcheck or similar energy computation report
    - For multifamily new construction, the COMcheck report is only required for lighting outside of individual units (e.g., common areas, corridors, stairwells, lobbies, building exterior, and parking garages)
    - Baseline IECC must be the version used to receive the building permit.
  - Other equipment compliance documents (e.g., AHRI or Energy Star certificates)
- Estimated project cost and quantities (invoice/proof of purchase, if available):
  - Lighting equipment and labor
  - Mechanical (HVAC) equipment and labor
  - Other equipment and energy efficiency measures (e.g., Energy Star appliances, solar water heating, garage demand ventilation control, etc.)

### 3. Work with Energy Advisor for additional documentation as needed.

Hawai'i Energy will request an inspection to verify installation of energy efficiency measures.

### 4. Receive final rebate.

Hawai'i Energy rewards the final rebate based on the calculated savings per system. The rebate for this program year is capped at \$150,000.

The following diagram illustrates the general application and rebate process for SA New Construction & Major Renovation projects. It is intended for illustrative purposes; actual process and submissions may differ on an individual project basis.

## Systems Approach

