



**Prepared By:** Jeff Lum  
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## *4.4kW Residential Photovoltaic NEM+ Storage*

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**November 7, 2025 / Quote No. 51393 / Marshall Ito, 565 Paopua Lp, Kailua, Hawaii**

## Introduction

### Congratulations

Welcome to Alternate Energy Inc.'s. Energy Analysis and Proposal for a grid tied photovoltaic system to be considered for the **Ito's** residence of **565 Paopua Ln**. The purpose of this document is to illustrate the advantages for you, your household and the environment by installing a gridtied photovoltaic system with Alternate Energy Inc.

### Three Generations

Alternate Energy Inc. (AEI) is a family owned and operated business with a long history of serving kamaaina. More than 30 years ago, Bruce Ekimura, a plumber by trade, realized that harnessing the power of the sun could help Hawaii families combat the rising price of electricity and help our state become less dependent on imported oil. Bruce and his father became early specialists in the installation of solar hot water heaters, and later photovoltaic (PV) systems, and in 1993 Alternate Energy was officially incorporated.

Today, as rising oil prices continue to keep electricity rates soaring, Alternate Energy remains committed to helping local families and businesses discover the clean, green, moneysaving power of the sun.

### Elite Installer

Alternate Energy Inc. recently achieved the status of Panasonic Solar's first and only recognized Elite Installer in the state of Hawaii. This means that we are Certified and



trusted by Panasonic Solar to sell and install its premium monocrystalline solar panels in Hawaii.

### Elite Training & Certification

All of our highly skilled solar technicians are employees (not subcontractors) annually Trained and Certified by Panasonic Solar to design, install and service all of your PV needs.

### Elite Products

We understand that photovoltaic systems are a long term investment. That's why we invest in the most reliable companies that have been trusted for years. Panasonic Solar's premium solar panels are among the highest efficiency and highest rated panels in the industry.

The solar panels are also designed and warrantied for installations near salt water for long lasting performance.

### Elite Service

Being family-owned and operated, we take pride in every job and make sure each customer is satisfied, every time. We are Hawaii's expert solar company since 1993.

This system will prevent 73.32 lbs sulfur dioxide (causes acid rain) from being released into Hawaii's rainforests.

# Power Production Estimate

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## Customer Details

|                                |                            |
|--------------------------------|----------------------------|
| Street Address:                | 565 Paopua Lp              |
| City, Zip Code, State:         | Kailua,96734,HI            |
| Solar Sunshine Zone:           | 400                        |
| Weather Data Source:           | (TMY2) HONOLULU, HI 6.2 mi |
| Peak Sun Hours for Production: | 4.6 hrs                    |
| Current Utility Rate:          | \$0.40 / kWh               |
| Deal Type:                     | NEM+ w/Storage             |

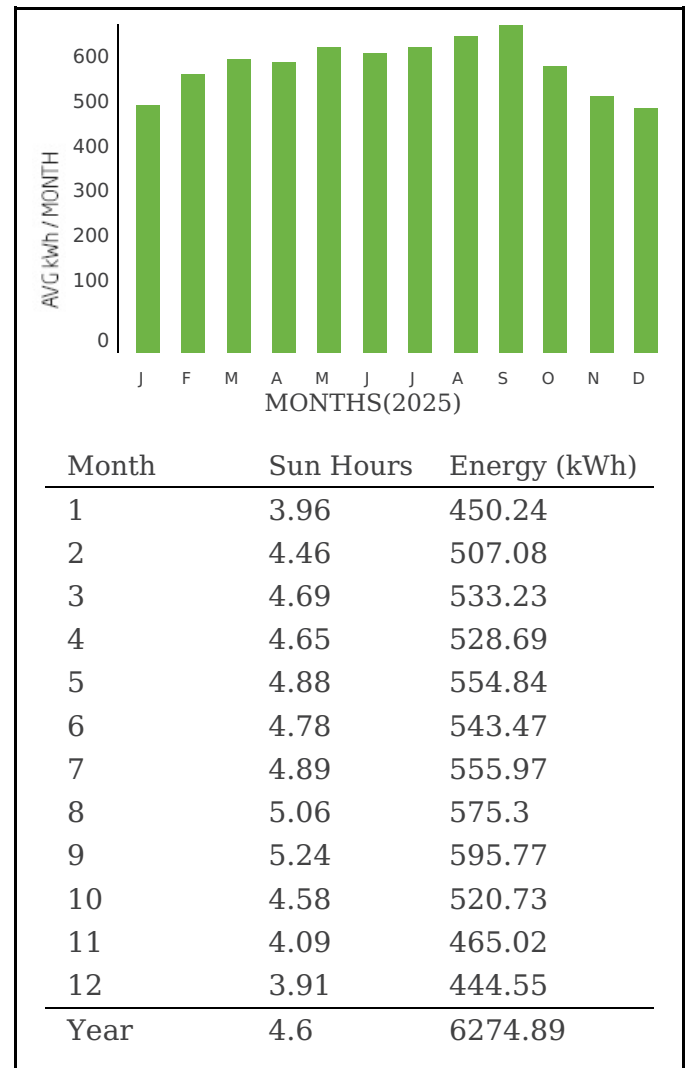
## PV System Specifications

|                                      |                                 |
|--------------------------------------|---------------------------------|
| System Size (DC Rating, kW):         | 4.40                            |
| DC to AC Derate Factor:              | .85                             |
| System Size (AC Rating, kW):         | 3.74                            |
| Module Type:                         | Hyundai 440NF Black             |
| Number of Modules:                   | 10                              |
| Module Power:                        | 440 W                           |
| Inverter Type:                       | Tesla 11.5 kWh                  |
| Number of Inverters:                 | 1                               |
| Storage Type:                        | Tesla Powerwall 3 AC (14.0 kWh) |
| Array Azimuth (Orientation):         | 180 °                           |
| Roof Tilt:                           | 23 °                            |
| Est. Annual Energy Production (kWh): | 6,275 / Year                    |

## Storage System Specifications

|                                |                                   |
|--------------------------------|-----------------------------------|
| Usable Storage Capacity (kWh): | 14                                |
| Depth of Discharge:            | 100%                              |
| Storage Type:                  | Tesla Powerwall 3 AC (14.0 kWh)   |
| Number of Storage System:      | 1                                 |
| Round Trip Efficiency:         | 92.5%                             |
| Equivalent Cycles:             | 1 full cycle per day for 10 years |

## Monthly System Production Estimates\*

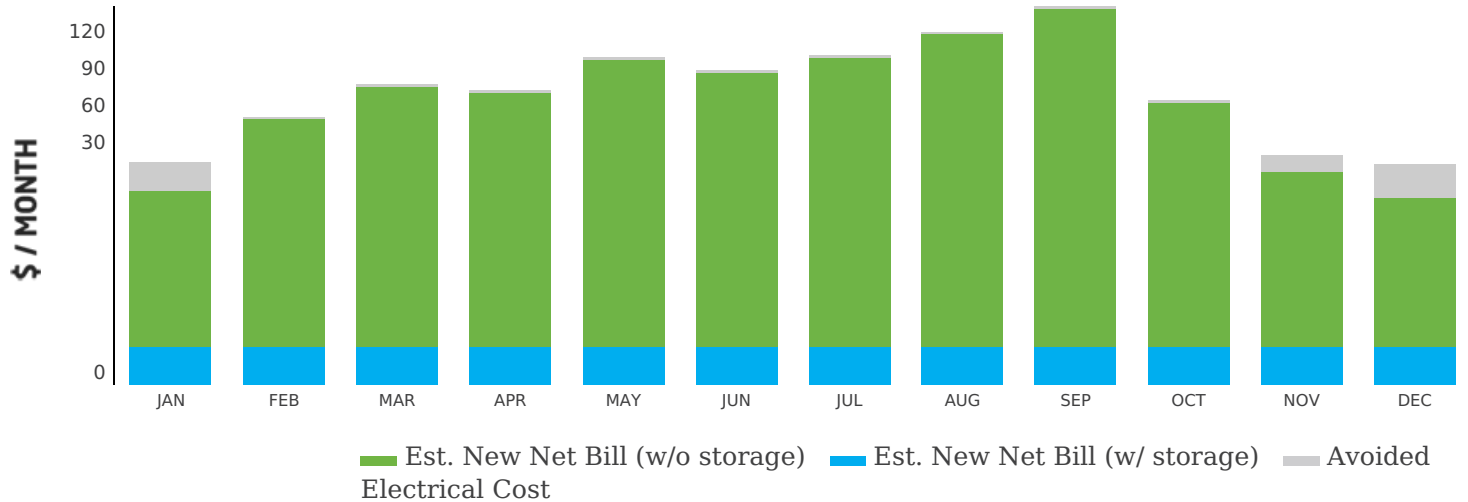


\* Estimate PV production values are provided for illustrative purposes only and should not be construed as predicted and exact energy production. Hypothetical PV performance results are simulated and have many inherent factors that may affect your PV system's performance. As your PV system has not actually been installed and put into service, the results may have under or over compensated for any impact of certain assumption and weather factors, such as but not limited to your assumption in daytime vs. nighttime loads and/ or cloudy and rainy days. Any methods, techniques, or assumptions presented in this email are for educational purposes only and are presented to assist you to make your own judgments on sizing your PV system (for which you are responsible). Any information or data contained in this PV estimate is historical and provides no indication of future performance.

# Cost Model Summary

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## Avoided Utility Costs vs. Estimated New Net Bill



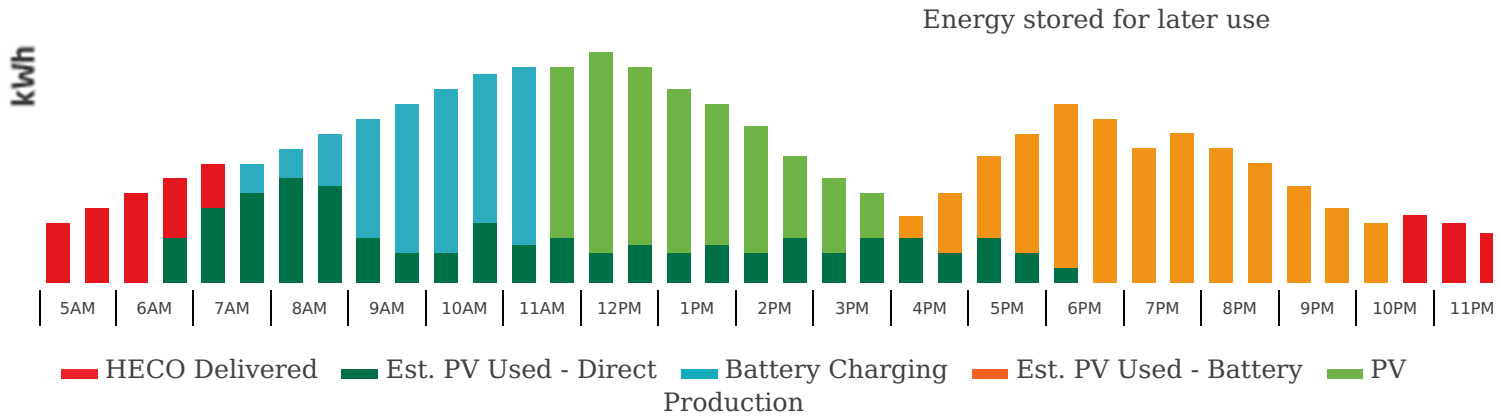
|     | Current Energy Usage (kWh) | Current Bill (\$) | Energy Production (kWh) | Est. PV used - Direct (kWh) (100%) | Est. PV used - Direct valuation (\$0.40/kWh) | Est. PV available - Battery (kWh) | Est. PV used - Battery (kWh) | HECO curtailed (kWh) | HECO Delivered (kWh) | Net Bill (* \$25 Minumun HECO Service Fee) |
|-----|----------------------------|-------------------|-------------------------|------------------------------------|--|-----------------------------------|------------------------------|----------------------|----------------------|--|
| Jan | 300.00                     | \$120.00          | 450.24                  | 300.00                             | \$120.00                                     | 150.24                            | 150.24                       | 0                    | 0.00                 | * \$25.00                                  |
| Feb | 300.00                     | \$120.00          | 507.08                  | 300.00                             | \$120.00                                     | 207.08                            | 207.08                       | 0                    | 0.00                 | * \$25.00                                  |
| Mar | 300.00                     | \$120.00          | 533.23                  | 300.00                             | \$120.00                                     | 233.23                            | 233.23                       | 0                    | 0.00                 | * \$25.00                                  |
| Apr | 300.00                     | \$120.00          | 528.69                  | 300.00                             | \$120.00                                     | 228.69                            | 228.69                       | 0                    | 0.00                 | * \$25.00                                  |
| May | 300.00                     | \$120.00          | 554.84                  | 300.00                             | \$120.00                                     | 254.84                            | 254.84                       | 0                    | 0.00                 | * \$25.00                                  |
| Jun | 300.00                     | \$120.00          | 543.47                  | 300.00                             | \$120.00                                     | 243.47                            | 243.47                       | 0                    | 0.00                 | * \$25.00                                  |
| Jul | 300.00                     | \$120.00          | 555.97                  | 300.00                             | \$120.00                                     | 255.97                            | 255.97                       | 0                    | 0.00                 | * \$25.00                                  |
| Aug | 300.00                     | \$120.00          | 575.30                  | 300.00                             | \$120.00                                     | 275.30                            | 275.30                       | 0                    | 0.00                 | * \$25.00                                  |
| Sep | 300.00                     | \$120.00          | 595.77                  | 300.00                             | \$120.00                                     | 295.77                            | 295.77                       | 0                    | 0.00                 | * \$25.00                                  |
| Oct | 300.00                     | \$120.00          | 520.73                  | 300.00                             | \$120.00                                     | 220.73                            | 220.73                       | 0                    | 0.00                 | * \$25.00                                  |
| Nov | 300.00                     | \$120.00          | 465.02                  | 300.00                             | \$120.00                                     | 165.02                            | 165.02                       | 0                    | 0.00                 | * \$25.00                                  |
| Dec | 300.00                     | \$120.00          | 444.55                  | 300.00                             | \$120.00                                     | 144.55                            | 144.55                       | 0                    | 0.00                 | * \$25.00                                  |

### Estimated Annual Totals:

|          |            |          |          |            |          |          |      |      |          |
|----------|------------|----------|----------|------------|----------|----------|------|------|----------|
| 3,600.00 | \$1,440.00 | 6,274.88 | 3,600.00 | \$1,440.00 | 2,674.88 | 2,674.88 | 0.00 | 0.00 | \$300.00 |
|----------|------------|----------|----------|------------|----------|----------|------|------|----------|

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## Solar Self Consumption



### Load Profile Assumptions\*

|                 |      |
|-----------------|------|
| Daytime Load:   | 100% |
| Nighttime Load: | 0%   |

### System Specifications

|                                   |         |
|-----------------------------------|---------|
| PV System Size (kW)               | 4.40 kW |
| Inverter Size (kW)                | 11.5    |
| Usable Storage Capacity (kWh)     | 14      |
| Daytime Load (100%,kWh)           | 10      |
| PV Energy Required for NEM+ (kWh) | 21      |
| Available kWh from PV system      | 17      |
| % of NEM+ capacity supplied       | 81%     |

### Estimated Annual Breakdown\*

|  |                   |
|--|-------------------|
| Current Annual Energy Usage (kWh):     | 3,600             |
| Current Annual Energy Bill:            | \$1,440.00        |
| Total Energy Production (kWh/year.):   | 6,275             |
| Round Trip Efficiency (RTE) Battery    | 92.5%             |
| Estimated PV Used - Direct (kWh/year): | 3,600             |
| Estimated PV Used - Battery (kWh)      | 2,456             |
| HECO Delivered (kWh/year):             | 0                 |
| HECO Curtailed (kWh)                   | 0.00              |
| <b>Total Annual Production Value:</b>  | <b>\$2,422.22</b> |
| % of Bill Offset:                      | 168%              |

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# NEM+ System Investment & Benefits

**AlternateEnergy**  
Renewable energy for your future



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## AEI's Premium PV System Cost

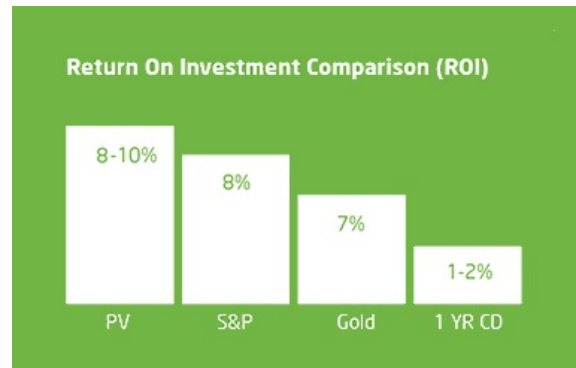
|                              |                    |
|------------------------------|--------------------|
| System Price:                | \$31,061.68        |
| Additional Cost:             | \$1,300.00         |
| 32nd Anniversary Special:    | (\$500.00)         |
| General Excise Tax (4.712%): | \$1,501.32         |
| <b>Total Payable:</b>        | <b>\$33,363.00</b> |

## Basic Tax Benefits

### System #1 (4.40 kW):

|                               |              |
|-------------------------------|--------------|
| U.S. Federal Tax Credit 0%*:  | (\$0.00)     |
| Hawaii State Tax Credit 35%*: | (\$5,000.00) |

|   |             |
|---|-------------|
| Total Investment NEM+                                       | \$33,363.00 |
| U.S. Federal Tax Credit 0%:                                 | \$0.00      |
| Hawaii State Tax Credit 35%*: (based on value of PV system) | \$5,000.00  |
| Net System Investment (Less Tax Credit)                     | \$28,363.00 |
| Simple Payback (Less Tax Credits):                          | 11.71       |
| Return On Investment (ROI):                                 | 8.54        |
| Cost/watt:  | \$7.58      |



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## Type of Modules: HD HYUNDAI SOLAR MODULE NF(BK) Series




 The Hyundai NF(BK) Series solar modules have passed vigorous international standards and certifications. Manufacturer warranties include 25 years for product defect, Materials and workmanship and 30-Year Performance Warranty. First year degradation is 1% and Linear warranty after initial year with 0.4% annual degradation, 87.4% is guaranteed up to 30 years. .

**Module Model:** Premium N-Type TOPCon Module


**Manufacturer Warranty:** 25 Years

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### Module Racking System

IronRidge Solar Roof Racking  accommodate some of the longest spans in the industry, reducing the number of roof attachments and saving time and money

### Roof Flashing

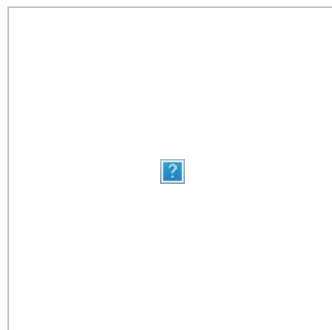
S-5! clamps attach to the panel seam  by the tightening of two "bullet-nosed" stainless steel setscrews against the seam material. The setscrews compress the seam material against the opposite wall of the clamp. They will "dimple" the seam material, but will not penetrate it.

### Hardware & Accessories

The hardware like nuts and bolts used in our installations are all stainless steel. This is to ensure a long lasting installation and foundation for your photovoltaic system.



## Type of Storage: TESLA POWERWALL 3



Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while

participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals. Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 185 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy system expansion, and simple connection to any electrical service.

**Technology:** Wall or Floor mounted, Lithium iron phosphate

**Storage Sizes Available:** 14.0 kWh (daily cycling)

**Depth of Discharge:** 100%

**Efficiency:** 90% round-trip DC efficiency

**Manufacturer Warranty:** 10 Years

## Powerwall Features

### Technology

Wall mounted, rechargeable lithium ion battery with liquid thermal control.

### Model

14.0 kWh

For daily cycle applications

### Warranty

Ten years

### Efficiency

90% round-trip DC efficiency

### Power Voltage

7 kW 350 - 550 V

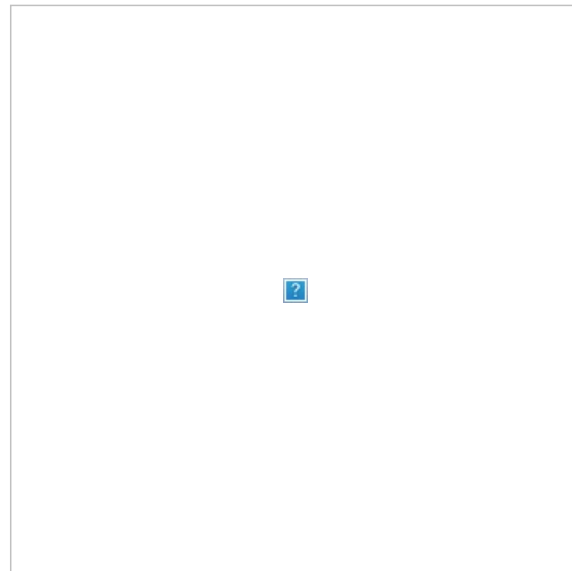
### Current

14.3 A

### Depth of Discharge

100%

### Compatibility



### Operating Temperature

-4°F to 122°F / -20°C to 50°C

### Enclosure

Rated for indoor and outdoor installation.

### Weight

287 lbs / 130 kg

### Dimensions

45.3" x 29.6" x 5.75"

1150 mm x 753 mm x 147 mm

### Certification

UL 9540, UL 1642, UL 1973

AC156 seismic certification

IEEE 693- 2005 seismic certification

FCC Part 15 Class B



Single phase compatible.

## Final Analysis

### Your Solar Future

What can you be sure of in times like this? You can be sure that your PV system will pay for itself while saving you money. As an investment property your PV system will yield a steady return year after year regardless of what the economy is doing, protecting your household from rate hikes.

38.73 lbs of nitrogen oxides  
(causes smog) avoided

### Assured Warranty

When you choose AEI, you get more than a well trained and professional staff. You also get AEI's thirty years of proven reliability, outstanding customer support and the assurance of our 10-year workmanship guarantee to the original end-user.

Workmanship warranty covers any type of roof damage, roof leaks, or damage caused by roof leaks, as a result of defects in AEI's installation or repairs. AEI does not warrant the condition of the roof or the roof structure and excludes glass breaking on the photovoltaic module through misuse, abuse, lack of reasonable care, failure of the customer to maintain the property, building and improvements in good condition, alteration or any other failure not resulting from defects in materials or workmanship in the installation. AEI is not responsible for any damages or losses relating to the decrease in output or storage which any occur during the pendency of or delays with warranty claim processing, repairs and/or replacement of parts pursuant to any applicable warranties.

AEI includes the first 5 years of labor on any PV panels or inverter/optimizer replacement at no charge. For additional information, please see our Terms and Conditions.

### Manufacturer Warranties:

Panasonic Solar, Hyundai Energy Solutions and REC Alpha Series warrants the power output of their PV panels for twenty-five

The power output degradation will not fall under 92% of the designated minimum power output.

Enphase's microinverter has a manufacturer's warranty of 25 years.

All of our SolarEdge installations include a 25 year warranty for power optimizers and a 12 year warranty for inverters from the manufacturer.

Our Home Energy Storage Solution (HESS) has a manufacturer's warranty of 10 years.

These warranties are manufacturer's warranties. AEI will assist the customer if filing a claim with the manufacturer in the event the power output is lower than the minimum power output, however, AEI is not responsible for any damages or losses due to the difference in the warranted power output and actual output or storage which may occur during the pendency of or delays with claim processing, repairs and/or replacement of parts pursuant to any applicable warranties. Trip fees may apply for warranty repairs.

### Conclusion

Thank you for the opportunity to present you with a proposal for your grid-tied solar electric system. Alternate Energy Inc. is delighted to be working with you. Please let us know what we can do to win your business.

years.

# Purchase Agreement

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## Customer Details

|                                 |                      |
|---------------------------------|----------------------|
| Name                            | Marshall Ito         |
| Street Address                  | 565 Paopua Lp        |
| City, Zip Code, State           | Kailua, 96734, HI    |
| Property Type                   | Single Family Home   |
| Primary Phone ,Secondary Phone: | (808) 554-9862       |
| Email                           | han.sourou@gmail.com |

## H.E.S.S. Specifications

|   |                                 |
|---|---------------------------------|
| Deal Type:  | NEM+ w/Storage                  |
| Storage Type:   | Tesla Powerwall 3 AC (14.0 kWh) |
| Number of Storage System:   | 1                               |
| PV System Size:   | 4.40 kW                         |
| Module Type:  | Hyundai 440NF Black             |
| Number of Modules:  | 10                              |
| Inverter Type:  | Tesla 11.5 kWh                  |
| Number of Inverters:  | 1                               |
| Roof Type:  | Metal Standing Seam             |
| Charging Cable:   | No                              |
| Additional Work Description: Remote meter, generation sub panel, gutter |                                 |
| Solar Insure added:   | Yes                             |

## Payment Details

Method of Payment:

Cash/Check

## Customer Agreement & Contract

I, the Buyer, agree to pay Alternate Energy, Inc. the Total Payable Amount for the material and labor described in this Purchase Agreement (PV), subject to and including all of Alternate Energy Inc.'s Photovoltaic Installation Terms & Conditions (attached), which I have initialed and also signed, Alternate Energy Inc's Installation Warranty, and subject to additions and deductions pursuant to authorized change orders. I will pay a 50% down payment of the Total Payable Amount upon signing of this Purchase Agreement and the balance when the PV system installation is completed.\*

Jeff Lum Feb 21,2026

Marshall Ito Feb 21,2026

Authorized Agent

Date

Customer Print & Signature

Date

Cancellations made within 24 hours of installation will incur a \$500 fee unless due to Force Majeure.

Bruce Ekimura

Feb 21,2026

President and Principal RME (Lic. No. C-26041)

Date

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## AEI's Premium PV System Cost

### PRICE SUMMARY

|                              |             |
|------------------------------|-------------|
| System Price:                | \$31,061.68 |
| Additional Cost:             | \$1,300.00  |
| 32nd Anniversary Special:    | (\$500.00)  |
| Sub Total:                   | \$31,861.68 |
| General Excise Tax (4.712%): | \$1,501.32  |

**Total Payable: \$33,363.00**

### TAX INCENTIVES

|                           |              |
|---------------------------|--------------|
| Hawaii Tax Credit (35%)*: | (\$5,000.00) |
| Federal Tax Credit (0%)*: | (\$0.00)     |

**Net Cost (w/ Tax Credits): \$28,363.00**

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