



MEMORANDUM

To: Jennifer Barnes
 From: Ingrid Rohmund
 CC: Kelly Marrin, Maggie Buffum
 Date: May 31, 2022
 Re: State of Hawaii Market Potential Study Update

Background

Over the past six months, AEG has been supporting HECO with its integrated resource planning (IRP) effort. As the EEM and Commission know, we have been using the Hawaii Market Potential Study as the basis for the supply curves we developed for HECO. In responding to a data request in from HECO in late March, AEG discovered an error in how savings for a subset of non-equipment measures included in the potential study (see Table 1). AEG corrected the measure-savings calculations and ran the models for Oahu to assess the impacts. The revised Oahu results showed savings that were about 5% higher for this subset of measures. At this point, we communicated our findings to the EEM along with our recommendation that AEG rerun the models for all the islands. This memo presents the results of this analysis.

Figure 1: Affected Measures

| Residential Sector | Commercial Sector |
|---|--|
| Advanced New Construction Design - Zero Net Energy* | Behavioral Programs - Small Business Submetering |
| Advanced Power Strips - IR Sensing* | Commissioning |
| Advanced Power Strips - Load or Occupancy | Distribution Transformers - High Efficiency |
| Behavioral Programs - Peer Group Comparison | Office Equipment - Advanced Power Strips |
| Behavioral Programs - Whole Home Metering | Office Equipment - Power Management |
| Connected Home Control System* | Retrocommissioning |
| Electronics - Switch Plug | Strategic Energy Management |
| ENERGY STAR Home Design | Uninterrupted Power Supply (UPS) |
| ENERGY STAR Soundbar | |
| Water Heater - Solar System - Tune-Up | |

*Measures ranked in the top 20 for each sector

Summary

The overall cumulative impact of the change in savings across the affected measures is an increase of half a percent (.5%) or less in the two achievable potential cases in 2030 and 2040 (see Table 2). Figure 1 shows results by sector.



Table 2: Overall Impact on Cumulative Savings

Change from 2020 to 2022

All Islands Achievable Potential Summary (GWh), All Sectors

| Segment | 2030 | 2040 |
|---|------|------|
| Cumulative Savings (GWh) | | |
| Achievable Potential - BAU | 31 | 48 |
| Achievable Potential - High | 33 | 56 |
| Economic Potential | 58 | 89 |
| Technical Potential | 43 | 61 |
| Energy Savings (% of Reference Baseline) | | |
| Achievable Potential - BAU | 0.3% | 0.4% |
| Achievable Potential - High | 0.3% | 0.5% |
| Economic Potential | 0.6% | 0.8% |
| Technical Potential | 0.4% | 0.6% |

Figure 1: Comparison of Savings by Sector – High Achievable Case

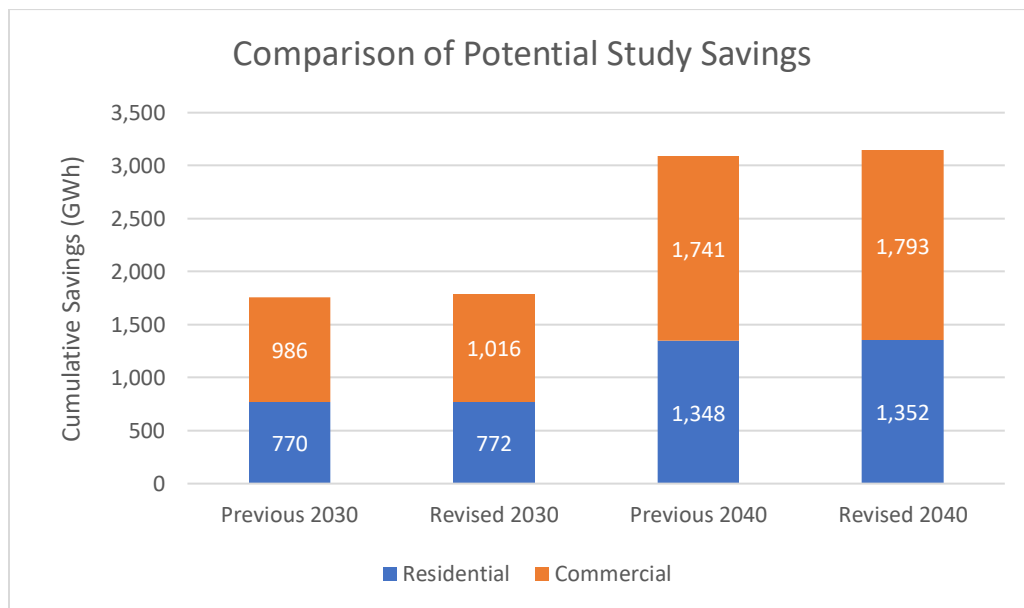




Table 3 below presents the high-level results from the original 2020 Study and the revised 2022 results.

Table 3: Summary of Original 2020 and Revised 2022 Savings

2020 Study

All Islands Achievable Potential Summary (GWh), All Sectors

| Segment | 2020 | 2021 | 2022 | 2025 | 2030 | 2040 |
|---|-------|-------|-------|-------|--------|--------|
| Reference Baseline (GWh) | 9,790 | 9,837 | 9,873 | 9,982 | 10,132 | 10,955 |
| Cumulative Savings (GWh) | | | | | | |
| Achievable Potential - BAU | 150 | 295 | 406 | 737 | 1,329 | 2,262 |
| Achievable Potential - High | 150 | 316 | 468 | 963 | 1,755 | 3,089 |
| Economic Potential | 455 | 849 | 1,161 | 1,951 | 3,014 | 4,125 |
| Technical Potential | 563 | 1,031 | 1,415 | 2,399 | 3,695 | 5,088 |
| Energy Savings (% of Reference Baseline) | | | | | | |
| Achievable Potential - BAU | 1.5% | 3.0% | 4.1% | 7.4% | 13.1% | 20.6% |
| Achievable Potential - High | 1.5% | 3.2% | 4.7% | 9.6% | 17.3% | 28.2% |
| Economic Potential | 4.6% | 8.6% | 11.8% | 19.5% | 29.8% | 37.7% |
| Technical Potential | 5.7% | 10.5% | 14.3% | 24.0% | 36.5% | 46.4% |

2022 Revision

All Islands Achievable Potential Summary (GWh), All Sectors

| Segment | 2020 | 2021 | 2022 | 2025 | 2030 | 2040 |
|---|-------|-------|-------|-------|--------|--------|
| Reference Baseline (GWh) | 9,790 | 9,837 | 9,873 | 9,982 | 10,132 | 10,955 |
| Cumulative Savings (GWh) | | | | | | |
| Achievable Potential - BAU | 153 | 301 | 415 | 754 | 1,360 | 2,310 |
| Achievable Potential - High | 153 | 322 | 476 | 979 | 1,788 | 3,145 |
| Economic Potential | 461 | 860 | 1,177 | 1,986 | 3,072 | 4,213 |
| Technical Potential | 568 | 1,040 | 1,429 | 2,426 | 3,738 | 5,148 |
| Energy Savings (% of Reference Baseline) | | | | | | |
| Achievable Potential - BAU | 1.6% | 3.1% | 4.2% | 7.6% | 13.4% | 21.1% |
| Achievable Potential - High | 1.6% | 3.3% | 4.8% | 9.8% | 17.6% | 28.7% |
| Economic Potential | 4.7% | 8.7% | 11.9% | 19.9% | 30.3% | 38.5% |
| Technical Potential | 5.8% | 10.6% | 14.5% | 24.3% | 36.9% | 47.0% |