

**Our state has made a
commitment to achieve 100%
clean energy by 2045.**

**At Hawai'i Energy, we believe
that we can get there faster
and cheaper with the help of
Hawai'i's families and
businesses.**

**They just need to know what to
do and how to do it.**

That's where we come in...





Hawai'i Energy's mission is to empower island families and businesses to make smart energy choices.



Hawai'i Energy

HawaiiEnergy.com

Because smart energy choices



reduce energy use

Nearly 150 MWh
reduction in PY15



save money

Nearly \$40 million in 1st
year savings
Over \$325 million in
lifetime savings from
PY15 equipment installed



**pursue a 100% clean
energy future**

Equivalent to building
90 MW solar farm
Lifetime cost of under
\$.03/kWh



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How we are getting to 100% faster through energy efficiency

Without reductions from energy efficiency, renewable generation would only cover about 22% of our energy needs.



The screenshot shows the website for Hawaiian Electric, Maui Electric, and Hawai'i Electric Light. The navigation menu includes: My Account, For Businesses, Save Energy & Money, Safety & Outages, Clean Energy Hawaii, Community & Education, and About Us. The breadcrumb trail is: Home > About Us > Newsroom > In 2016 26 percent of electricity used by Hawaiian Electric Companies came from renewables. The article title is "In 2016, 26 percent of electricity used by Hawaiian Electric Companies came from renewables". The release date is 3/8/2017. There is a "Download PDF" link. The article text begins with "Honolulu, March 8, 2017 - The Hawaiian Electric Companies reached a nearly 26 percent Renewable Portfolio Standard".

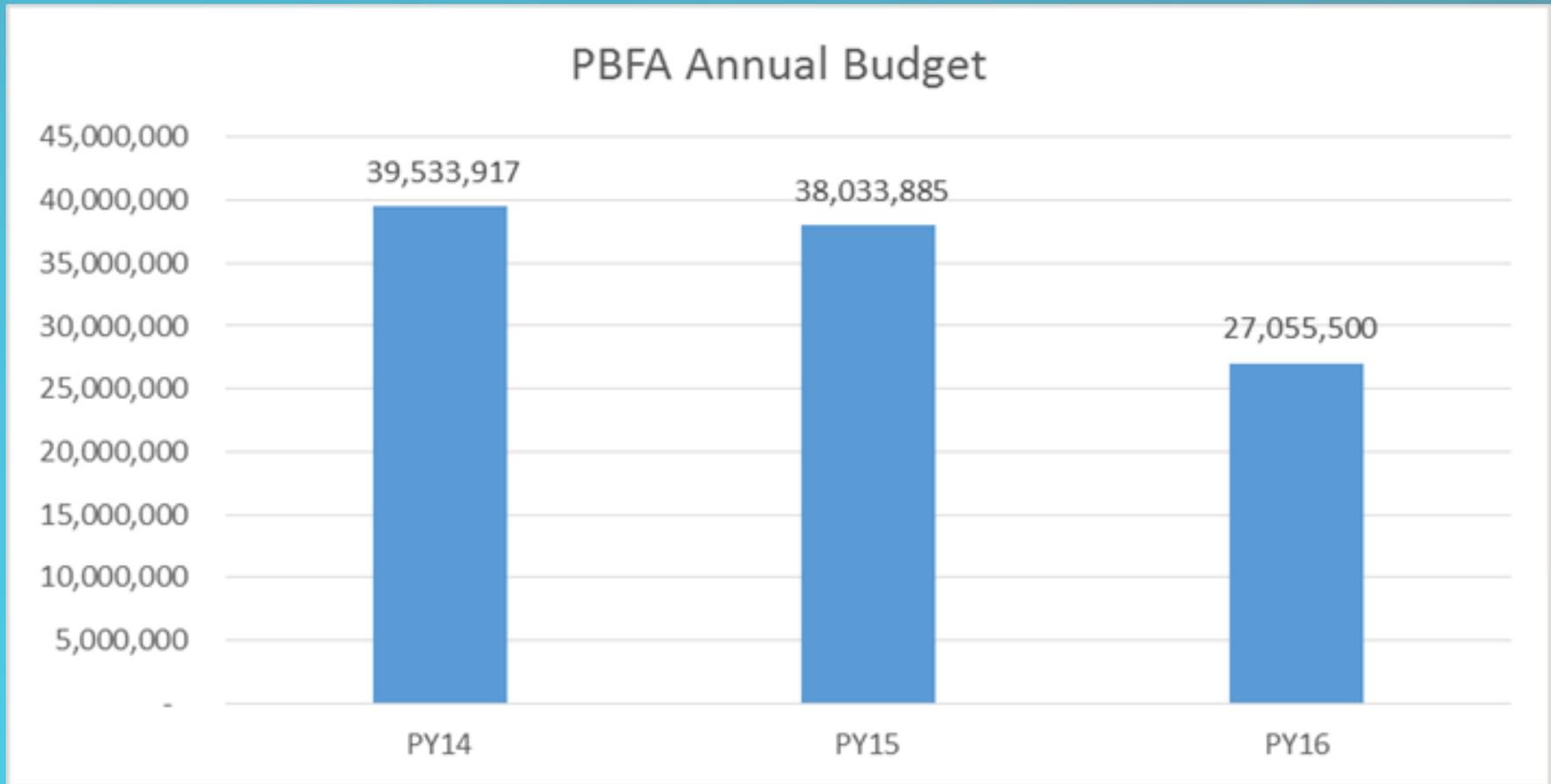


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However Hawai'i's investment in energy efficiency is declining



CURRENT CONTRACT PY16 – PY18

- ✦ July 1, 2016 – June 20, 2018 NEW – 3 year program structure
 - Benefits: Flexibility to shift funds, certainty of funding for longer projects, longer term program opportunities (such as Strategic Energy Management)
- ✦ Budget reduction of \$38 MM in PY15 to \$27 MM PY16
 - Total contract \$85 million, or about \$28 MM per year
- ✦ Already rolled forward over \$3 million in funding from PY18 to PY16 due to strong, program success.



Chart 3: PY2016 Net Energy Impact Tracking

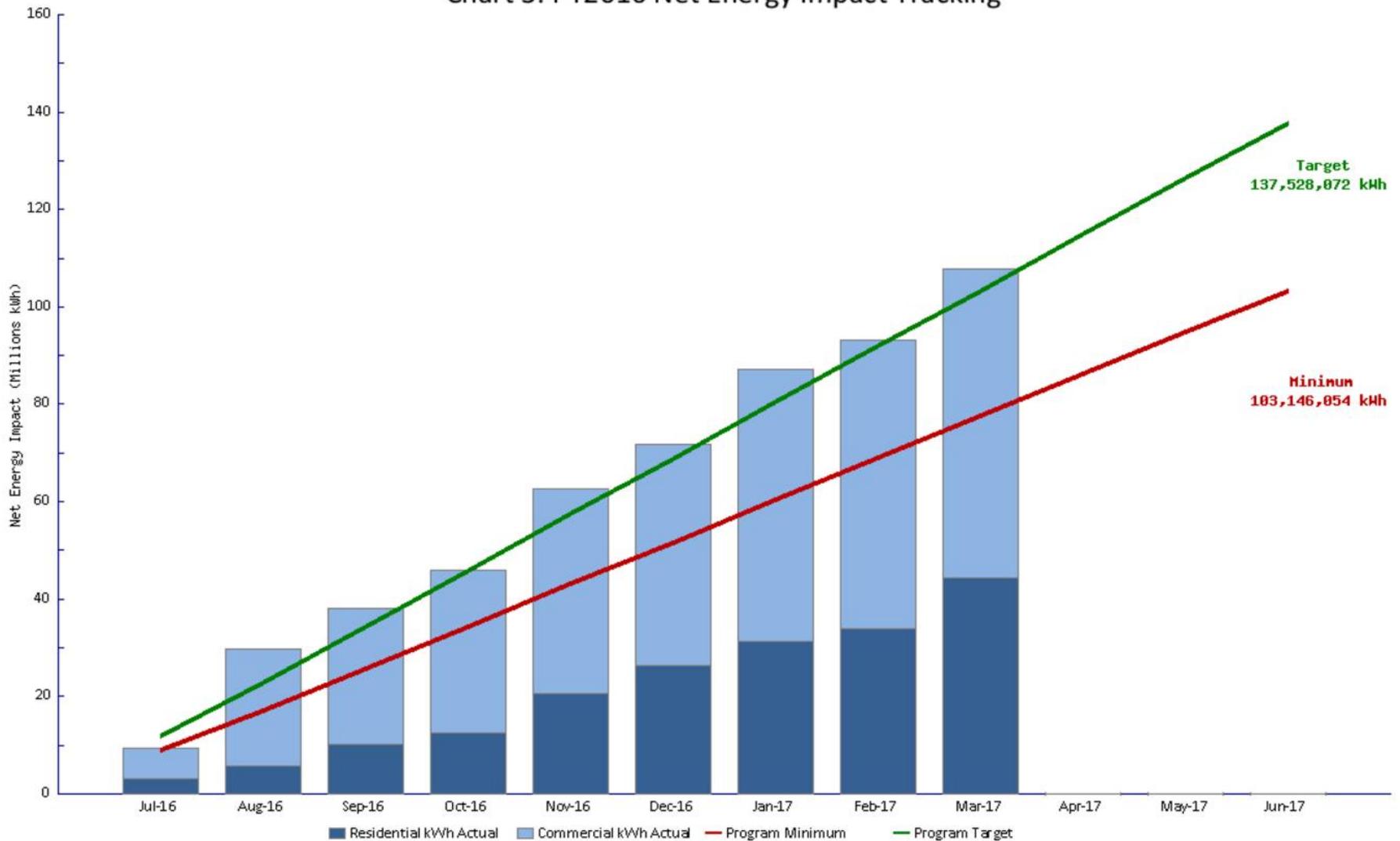
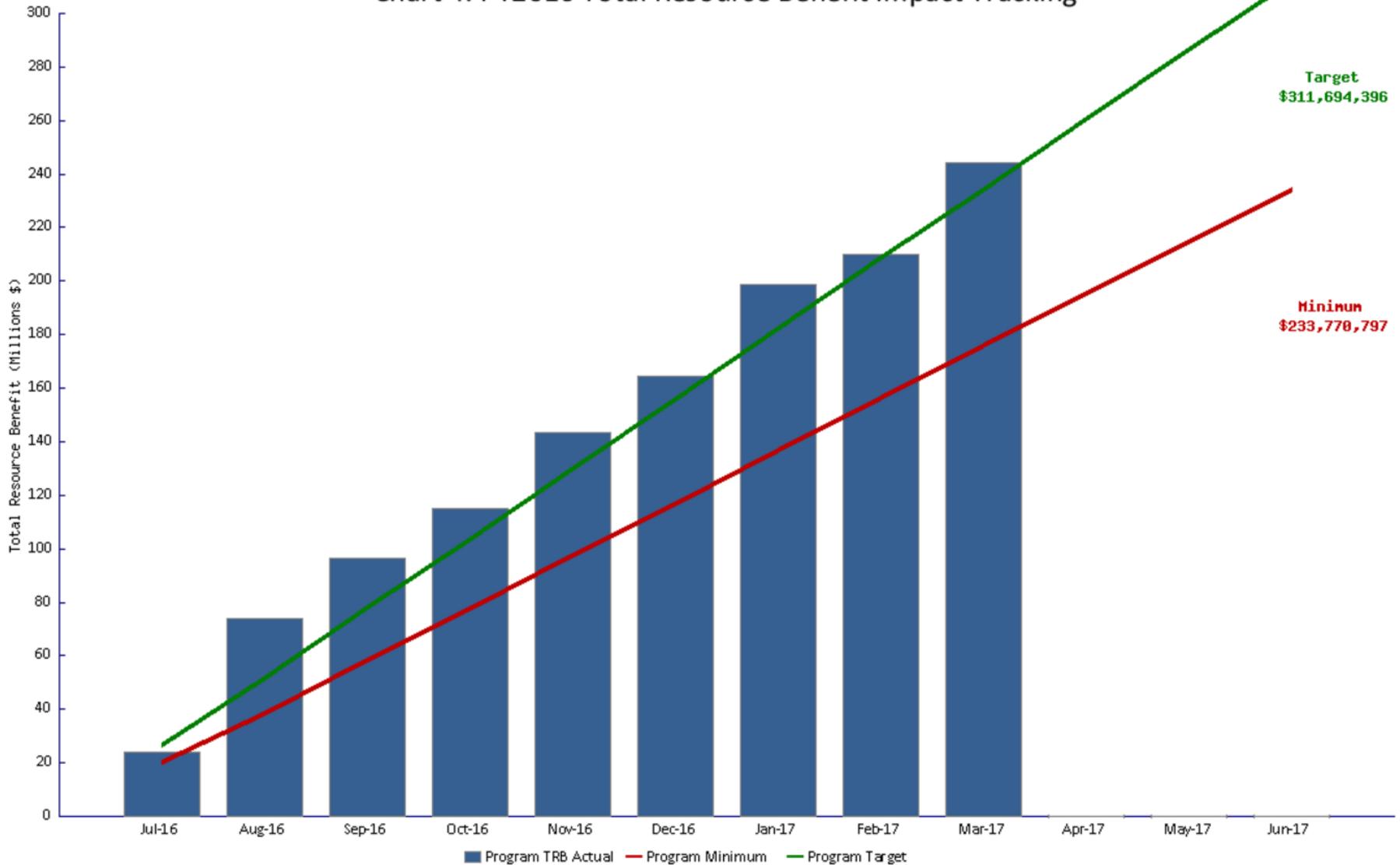


Chart 4: PY2016 Total Resource Benefit Impact Tracking



CUTS/REDUCTIONS WITH LOWER BUDGET

- ✦ Reduced headcount
- ✦ Reduced incentives and eliminating funding of energy studies
- ✦ Move away from custom analysis in favor of prescriptive incentives
 - no longer metering projects to verify pre/post (unable to accommodate more complex projects)
- ✦ Codes work and renewable energy integration efforts reduced
- ✦ Small business and hard to reach efforts limited due to budget
- ✦ Re-evaluate educational approach in schools
- ✦ Big project funding jeopardized



DRIVING INNOVATION

- ✦ Significant administration efficiencies through process automation
- ✦ Growth of upstream and midstream programs
- ✦ New program offerings such as Strategic Energy Management
- ✦ Increase effectiveness and quantity of Clean Energy Allies which are the program's force multipliers
- ✦ Market transformation through education and workforce development
- ✦ Improving data analytics for targeting and conversion by the program and by CEA
- ✦ Advancing control technologies that increase efficiency, demand reduction, and demand response capabilities
- ✦ Focus on the water-energy nexus and the benefits to reduce consumption in both areas



Connected Thermostat Data Flow for Existing and Future Use Cases

DECISION
MAKERS/ACTORS



Occupant

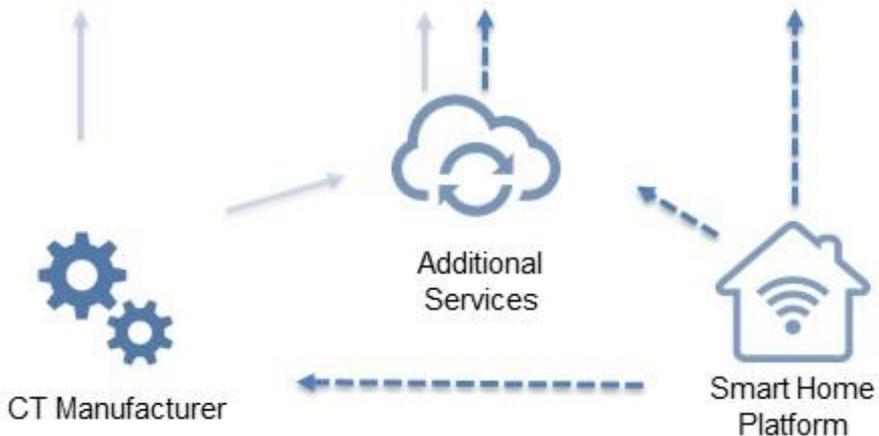
Utility Program

Contractor

SAVINGS OPP



SUPPORTING
SERVICES



Additional
Services

CT Manufacturer

Smart Home
Platform

TEMPERATURE
SENSING



Connected
Thermostat



Data from Other
Appliances, Devices,
Sensors, and/or
External Sources

- Solid line = Existing
- Dashed line = Emerging and Future

CODES AND STANDARDS ARE A BIG OPPORTUNITY – HELPING IN MANY AREAS

- ✦ 2015 IECC signed by Governor Ige in March
 - Hawai'i Energy played a role in advocating for adoption
- ✦ Classroom and field trainings
- ✦ Technical assistance
- ✦ Code enhancements
- ✦ Code compliance tools and documentation
- ✦ Standards – What happens if there is no ENERGY STAR?



WHAT'S THE FUTURE LOOK LIKE?

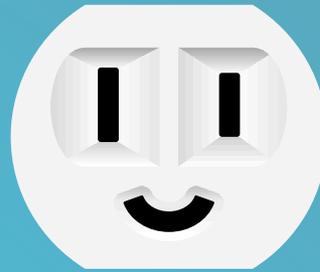
- ✦ Energy efficiency's role has been primarily reducing the denominator in the 100% clean energy goal
- ✦ The future of energy efficiency is a grid resource that allows for increased renewable energy on the grid
 - With utility temporal and locational values, efficiency can be pursued that offer the greatest grid value with incentives structured around these values
- ✦ Value stacking energy efficiency and demand response incentives to improve ROI for customers to pursue improved automation and controls
- ✦ Zero net energy ready – driving efficiencies in new construction through partnerships and codes and standards



AS THE CHEAPEST CLEAN ENERGY SOURCE, THIS VISION FOR EFFICIENCY REQUIRES INVESTMENT

- ✦ Collections are 1.5% of utility revenue
- ✦ After GEMS allocation, this is closer to 1% funding
- ✦ Best in class programs nationally are at 3% funding
- ✦ As the solar industry declines and regulatory policies evolve, there hasn't been a better time to focus on efficiency
- ✦ California's level of investment (and effort) in codes and standards is significant ~ \$30 MM over 3 years





Efficiency First!



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