



EEPS TECHNICAL WORKING GROUP

October 26, 2023
9:00 a.m. to 11:00 a.m.

Hawai'i Energy Offices with Teams Web conference option

REMINDERS

- Remote participants, please mute your lines when you aren't speaking – we'd like to keep the lines open so you can easily join the conversation
 - You may also use the “raise hand” or chat functions
- Please identify yourself and your organization when speaking



COMMISSION WELCOME



AGENDA & INTRODUCTIONS

JENNIFER BARNES

ENERGY EFFICIENCY MANAGER TEAM

AGENDA

- 9:00 – Commission Welcome
- 9:05 – Agenda & Introductions
- 9:10 – Energy Efficiency Portfolio Standard (EEPS)
 - Findings from 3rd Report to Legislature
 - Updates on EEPS Legislation & Framework Update
- 10:10 – Break
- 10:15 – Market Potential Study (MPS)/Baseline Study Planning
- 10:35 – Valuing Benefits to Society
- 10:50 – Wrap up & adjourn



INTRODUCTIONS BY ORGANIZATION

THIRD EEPS REPORT TO LEGISLATURE

JENNIFER BARNES & TAMI RASMUSSEN
ENERGY EFFICIENCY MANAGER TEAM

EEPS OVERVIEW

- 4,300 GWh by 2030
- EE to meet 30% of forecasted sales in 2030
 - Gross GWh measured at system including transmission & distribution
 - Updated utility sales forecasts for each evaluation period
 - 2008 forecast baseline
- Metric for the 2030 GWh goal was clarified as cumulative persisting GWh

Second Performance Period Goals

Year	GWh goal	% of baseline	% of forecast
2016	195	1.36	1.36
2017	195	1.36	1.36
2018	195	1.36	1.36
2019	195	1.36	1.36
2020	195	1.36	1.36
Total	975	6.8	6.8

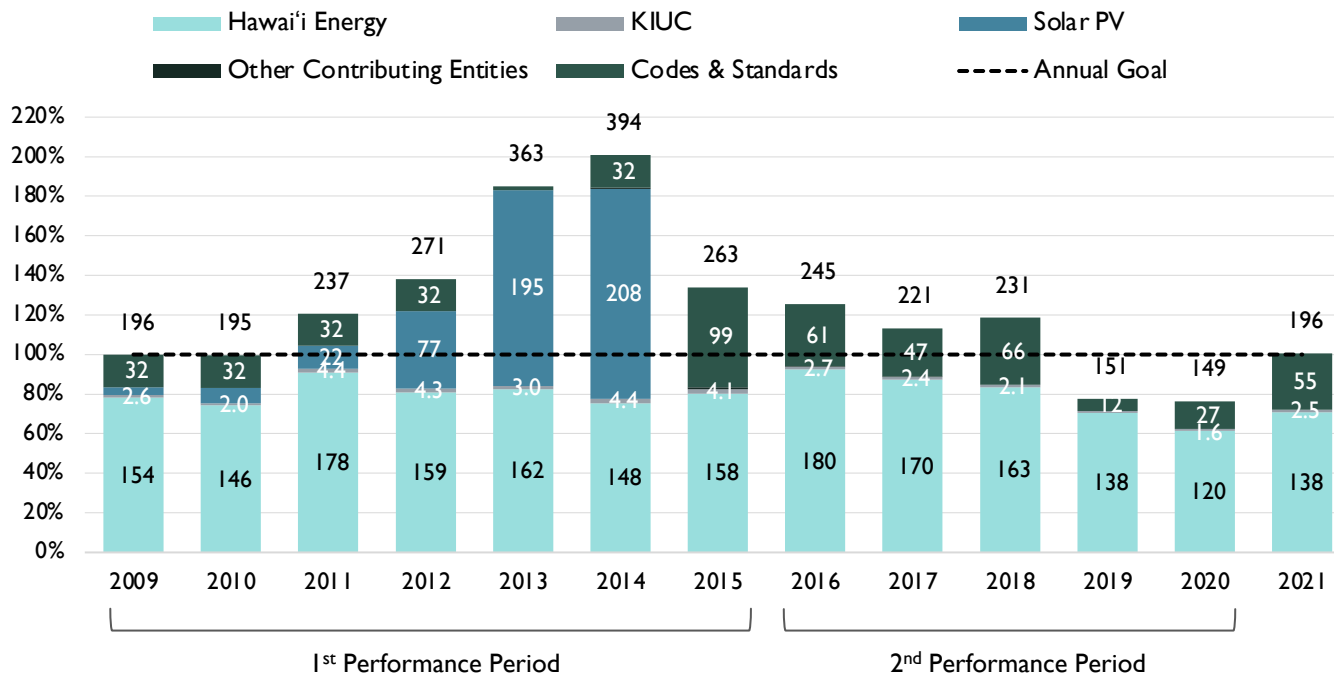
PERFORMANCE & EVALUATION PERIODS

EEPS Performance Periods (calendar years)	Evaluation Reports	Due 20 Days before Legislative Session Opening (submit in December prior)
2009-2015	First Report (EEPS & PBFA start up)	2014 Legislative Session
	Second Report	2019 Legislative Session
2016-2020	Third Report	2024 Legislative Session
2021-2025	Fourth Report	2029 Legislative Session
2026-2030	Fifth Report	2034 Legislative Session

- Delay between performance and evaluation periods allows time for 1 year+ of billing data after performance period ends & analysis begins

EEPS ACCOMPLISHMENTS – FIRST YEAR SAVINGS

Annual Statewide First-Year Energy Efficiency Accomplishments towards EEPS Goal (GWh system level savings)



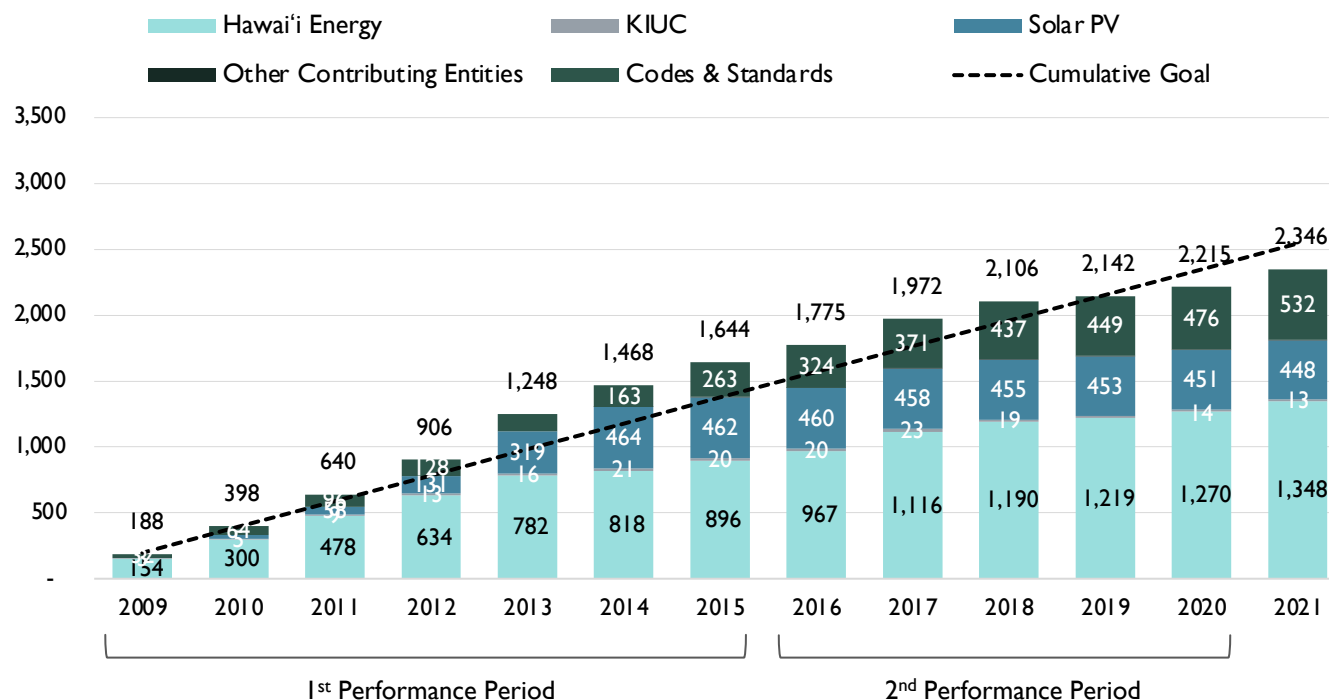
Based on the original 195 GWh per year goal in terms of first year savings, interim goals are reached (and exceeded)

- 1st performance period (2009 - 2015)
 - 1,921 of 1,375 GWh goal (140%)
- 2nd performance period (2016- 2020)
 - 998 of 975 GWh goal (102%)
- Combined periods (2009 – 2020)
 - 2,918 of 2,350 GWh goal (124%)

NOTE: Pursuant to HRS 269-91, solar PV savings after 2014 count towards the RPS.

EEPS ACCOMPLISHMENTS – CUMULATIVE PERSISTING SAVINGS

Annual Statewide Cumulative Persisting Energy Efficiency Accomplishments towards EEPS Goal (GWh system level savings)



Based on the original 195 GWh per year goal in terms of CPS, 1st period interim goal reached (and exceeded), but 2nd period falling behind, as measure savings starts to drop off

- 1st performance period (2009 - 2015)
 - 1,644 of 1,375 GWh goal (120%)
- 2nd performance period (2016- 2020)
 - 571 of 975 GWh goal (59%)
- Combined periods (2009 – 2020)
 - 2,215 of 2,350 GWh goal (94%)

NOTE: Pursuant to HRS 269-9I, solar PV savings after 2014 count towards the RPS.



LOOKING FORWARD TO 2030

OCTOBER 2023 TWG MEETING

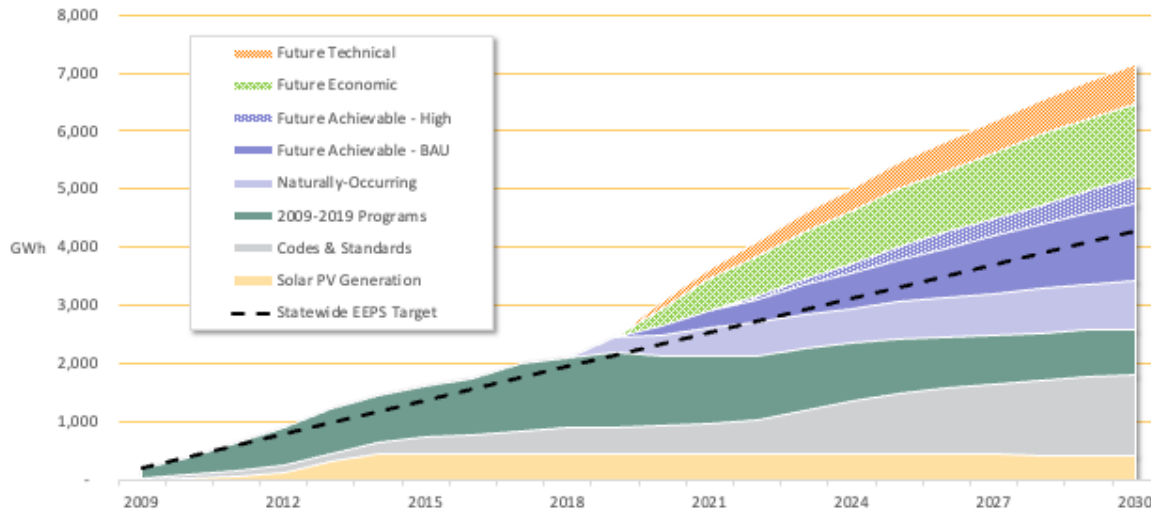


IMPACT OF EISA RELATED CHANGES ON MPS

- If we count lighting program / C&S market spillover towards EEPS, then we are on track to meet the 2023 target under a BAU scenario
- If we don't allow the lighting spillover savings (553 GWh), then we need to increase annual targets going forward

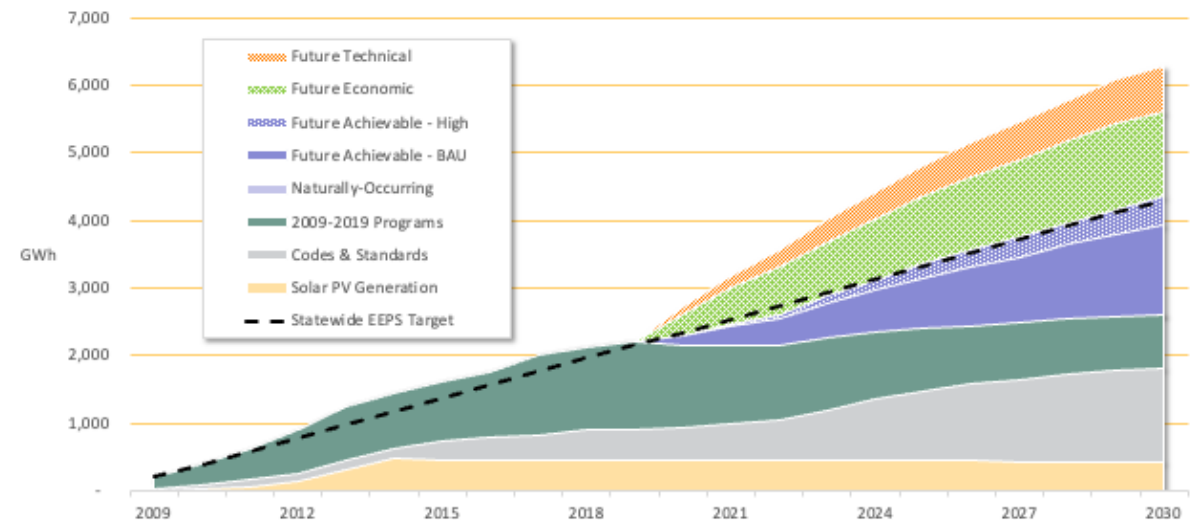
MPS with EISA Tier 2 Savings as of 2023 + Lighting Spillover Savings (aka N.O.)

Cumulative Persistent Energy Savings through 2030, EEPS Perspective



MPS with EISA Tier 2 Savings as of 2023, no Lighting Spillover Savings (aka N.O.)

Cumulative Persistent Energy Savings through 2030, EEPS Perspective



REALIGNMENT OF EEPS INTERIM GOALS

- The move from first-year savings to CPS necessitates that the goals in the outer years be adjusted to account for the savings in the early years that have reached the end of their EULs
- 2020 MPS showed that the state was projected to meet EEPS under a BAU scenario with the caveat that attainment of the 2030 target “may necessitate additional efforts in the short-term to recover from the effects of the COVID-19 pandemic on “business as usual” for energy efficiency programs and the economy, in general.”
 - The MPS business-as-usual (BAU) scenario has been sufficient to this point but the annual values from the Achievable – High scenario are required going forward
- In addition, the EISA tier 2 lighting standards were delayed/didn’t take effect until 2023 so that C&S savings was captured as N.O. in the 2020 MPS
- The savings that were forecast to occur when the EISA compliant products were stocked and purchased outside of the program.
- Discuss:
 - Does the TWG agree that this EISA savings between 2019 and 2023 should be counted towards the EEPS target as lighting spillover (programs/C&S)
 - Are there any additional savings that should be captured in this current Report to Legislature?

EEPS Period	First-Year Goals (GWh)		
	Original	Updated*	
		BAU	High
2021-2025	975	1,141	1,346
2026-2030	975	950	1,150
Total CPS	4,300	3,927	4,353

*from 2020 MPS, excludes N.O. savings

EEPS LEGISLATION & FRAMEWORK UPDATE

ASHLEY NORMAN
HAWAII PUBLIC UTILITIES
COMMISSION

SATURATION & MARKET POTENTIAL STUDIES

UPDATE ON STUDY PLANNING

TAMI RASMUSSEN

ENERGY EFFICIENCY MANAGER TEAM

SATURATION STUDY BACKGROUND

Goal is to determine (and update) how, where and when electricity is used in Hawaii

Study results inform:

- Planning of future energy efficiency policies and programs
- Preparing the MPS
- Updating the PBFA TRM (e.g., baseline assumptions)
- Serving as a reference point to monitor the effectiveness of program efforts or track progress toward goals
- Electricity load and resource planning

Based on a combination of activities:

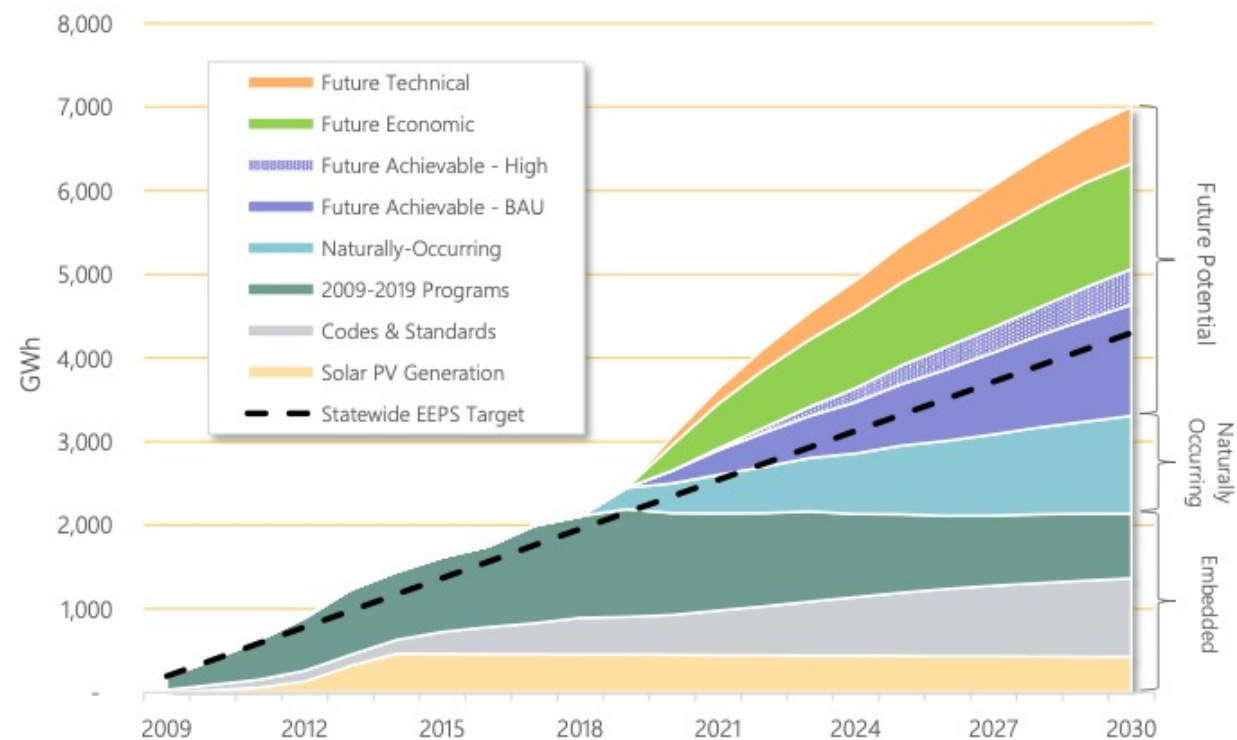
- On-site surveys
- Telephone surveys
- Online surveys
- Mail surveys
- Secondary data

MARKET POTENTIAL STUDY (MPS) BACKGROUND

Goal is to estimate the electricity savings that can be achieved by PBFA/contributing entities toward achieving the goals outlined in the state's EEPS

- Supports program planning, tracking progress toward EEPS goals and resource planning
- Provides forecasts of EE impacts, including codes and standards and naturally occurring impacts
- Based on avoided cost of electricity and saturation study data
- Includes a wide range of currently available and cost-effective measures
- Forecasts of energy efficiency potential are characterized in terms of Technical, Economic and Achievable

Figure ES-3 Cumulative Persistent Energy Savings (GWh), 2009-2030, EEPS Perspective



FOCUS OF NEXT ROUND OF SATURATION / MPS

- Continue tracking saturation data over time (from prior saturation / baseline studies)
- Gather data on newer technologies and potential for upgrades
- Update model inputs with current data
 - Saturation study
 - Avoided costs
 - C&S impacts
- Gather input from stakeholders on data wants and needs
- Coordinate with HECO on their RASS (conducted every 2 years)

Discuss:

How did you use the last Saturation Study / MPS?

What would you like to see covered by the next Saturation Study / MPS?

NEXT STEPS / SCHEDULE (TENTATIVE) FOR SATURATION STUDY / MPS

	2023	2024				2025				2026	
Stage	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Planning	█										
RFP / Solicitation		█	█								
Negotiation / Award				█							
Saturation study				█	█	█	█	█	█	█	
MPS								█	█	█	█

Provide your feedback on Saturation Study / MPS to Tami Rasmussen by Friday December 1, 2023
 (rasmussen@evergreenecon.com)

VALUING BENEFITS TO SOCIETY

JENNIFER BARNES & TAMI RASMUSSEN
ENERGY EFFICIENCY MANAGER TEAM

OPTIONS FOR VALUING SOCIETAL COST BENEFITS

- Want to begin a discussion on valuing societal cost benefits
- Two options to discuss today:
 - Adjusting the discount rate used to determine the avoided costs in the Technical Reference Manual (TRM)
 - Adding a second societal cost test (SCT) in addition to the TRC



USING A SOCIETAL DISCOUNT RATE FOR AVOIDED COSTS



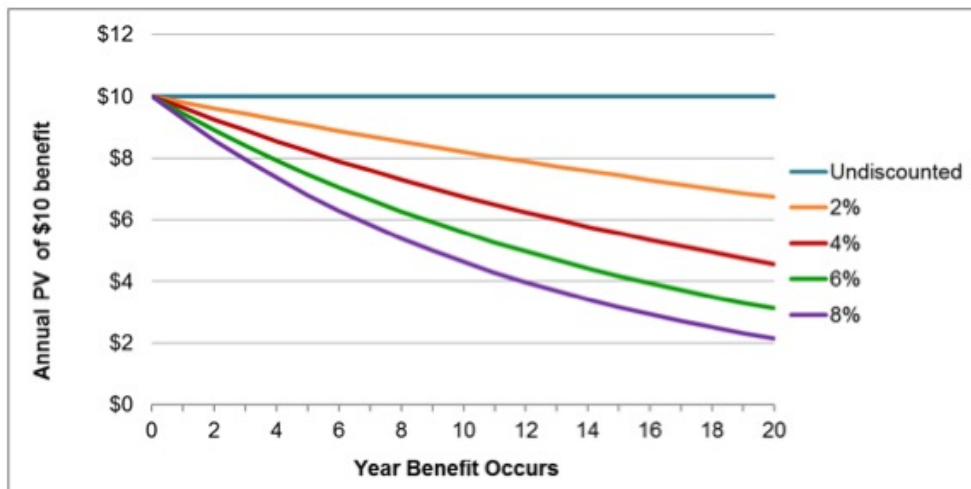
DETERMINATION OF AVOIDED COSTS IN TRM

Absent an IGP capacity expansion model simulating distributed electricity resources competing against conventional generation options, avoided costs are determined by escalating the island-specific avoided cost of energy over the measure lifetime, then discounting the stream back to present value.

Parameter	Value	Notes
Avoided Cost of Energy	<ul style="list-style-type: none">Oahu - \$0.114Maui - \$0.153Hawai'i - \$0.167	PY22 values
Escalation Rate	3%	Used to escalate the values between years
Discount Rate	6% (current)	Used to determine the net present value of savings

SOCIETAL DISCOUNT RATE

- Applying discount rates turns benefits and costs in different years into comparable values
- Higher discount rates will reduce the value of avoided benefits while lower discount rates have a smaller impact



Type of Discount Rate	Indicator	Typical Values
Societal	Societal cost of capital	<0% to 3%
Low-risk	Interest rate on 10-year US Treasury Bond	-1.0% to 3%
Utility Customers on Average	Customer's cost of money	Varies
Publicly-owned Utility	POU cost of borrowing	3% to 5%
Investor-owned Utility	IOU cost of borrowing	5% to 8%

Adapted from the National Standard Practice Manual, August 2020



SOCIETAL COST TEST



SOCIETAL COST TEST (SCT) OVERVIEW

The SCT is structurally similar to the TRC, but expands the scope of included costs to those that impact society as a whole, not just the utility and its ratepayers.

- TRC as primary B/C test
- SCT as a secondary test to enhance overall understanding of costs and benefits

Impact	TRC	SCT
Electric utility system	✓	✓
Other fuel impacts	✓	✓
Host customer impacts	✓	✓
Societal impacts		✓

SOCIETAL COST TEST (SCT) OVERVIEW

The SCT could be helpful in supporting the tracking of progress towards equity and justice goals

- HPUC Energy Equity and Justice Docket
- State legislature Act 238 Climate Mitigation (the costs of inaction)

SCT attributes to consider including:

- Applying a societal discount rate that is lower than the utility cost of capital
- Adding benefits that reflect the societal costs of electricity generation (GHG and/or air quality adder)

Suggest a test period of data gathering, calculations and sensitivity testing

- Data availability and reliability is a limiting factor
- Constraints in quantifying things that are difficult to quantify
- Report on progress at next TWG

Pros & Cons

Adjusting Discount Rate for AC		Adding a Societal Cost Test	
Changing the discount rate used to determine avoided costs from the current 6% (utility WACC) to 3% (societal discount rate)		Developing a SCT, as a supplement to the TRC, to be used to assess the effectiveness of the PBFA portfolio from a societal perspective	
Pros	Cons	Pros	Cons
<p>Simple to execute using existing framework</p> <p>Places a lower discount on the program benefits over the long term, placing a higher value on future savings</p>	<p>Would change the criteria for assessing the entire PBF portfolio, including programs not targeted for A&A</p>	<p>Allows the incorporation of broader benefits associated with PBF programs to be measured and reflected in metrics of program success</p> <p>Would allow certain parts of the PBF portfolio, such as A&A, to be assessed separately from programs for market-rate customers</p> <p>Hawai'i Energy would be able to drive A&A efforts through higher levels of financial support</p>	<p>Would require more effort and resources to develop</p> <p>Unclear the degree to which inputs are available</p> <p>By adding an expansive list of benefits, the test result may justify less cost effective programs based on a traditional TRC metric and may not be feasible to fund</p>

POINTS TO CONSIDER FOR DISCUSSION AT NEXT TWG

- What are the TWG member thoughts on adjusting the discount rate in the TRB/TRC?
 - Discuss pros and cons and next steps
- Does the TWG agree that it's worthwhile to explore data availability and measurement of SCT?
 - What are the main attributes we want to measure / include? Concerns about data availability?
- What are your thoughts on considering adding the SCT as a secondary B/C test?

NEXT STEPS & WRAP UP

JENNIFER BARNES

ENERGY EFFICIENCY MANAGER TEAM

QUESTIONS?

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- Please contact Jennifer Barnes at 510-756-1501 or jenniferbarnes@2050partners.com.
 - Meeting materials will be posted on www.HawaiiEEPS.org