



MAUI COUNTY CLIMATE ACTION & RESILIENCY PLAN

2023 Status Report

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Received at 05/24/2023 DRIP Committee meeting

Received at 11/18/2024 ESCS Committee meeting

OUR COLLECTIVE VOICES

TO UNDERSTAND ITS MOST PRESSING CHALLENGES,

the County of Maui worked with diverse communities through an in-depth public engagement process. These collective voices are woven into the fabric of the CARP and shape the plan's goals, pillars, strategies, and actions.

ENGAGEMENT NUMBERS

at a glance

70+

**COMMUNITY
ADVISORS**

**20 CARPAC
MEMBERS**

representing a
diverse cross-section
of our community

**50+
RESILIENCY
HUI MEMBERS**

participating across
11 County of Maui
Departments

21

**COMMUNITY
ADVISOR
WORKSHOPS**

**11 CARPAC
WORKSHOPS**

**10
RESILIENCY
HUI
WORKSHOPS**

20

**VIRTUAL COMMUNITY
FORUMS & MEETINGS**

identifying climate vulnerabilities
and resilience strategies

31+

SITE VISITS

across Maui County with 100+
community members engaged to
assess climate vulnerabilities and
related cultural impacts

800+

**TOTAL
RESPONDENTS
TO 5 COMMUNITY
SURVEYS**

OUR GUIDING PRINCIPLES



**Protect, restore,
and sustainably
manage our natural
environment for
current and future
generations.**

We are dedicated to active stewardship and restoration of our natural environment for current and future generations. Not only do we seek to protect our natural environment, but also to restore the 'āina, wai, kai, and lewa (air) resources that have been degraded. Implementing regulations, policies, and programs that support the sustainable management of our natural environment will help reinforce ongoing restorative practices throughout our community. This approach embraces the use of traditional knowledge, including lessons learned from the moku-ahupua'a land management system and sustainable ecological practices.



**Reduce local
greenhouse gas
(GHG) emissions
to achieve net
negative carbon.¹**

We are committed to eliminating GHG emissions and to achieving net negative carbon. To achieve this, we must continue to reduce our GHG emissions through climate action while also supporting regenerative practices that sequester carbon and increase our carbon stock.

1. Net negative carbon occurs when more CO₂ is removed from the atmosphere through carbon sequestration than what the community emits.

KŌ KĀKOU LOINA ALAKA'I



**E ho'opalekana, e
ho'oponopono, a e
ho'omalu me ka
mālama kūpono
i ko kākou ao
kūlohelohe no kēia
au nei a i ke au hou
e hiki mai ana.**

'Onipa'a nō mākou i ka mālama ku'upau 'ana i ko kākou ao kūlohelohe, a i kona ho'oponopono hou 'ia 'ana, no nā haunauna o kēia au nei a o ia mua aku. Ke noke na'e nei mākou i ka ho'omalu 'ana i ko kākou ao kūlohelohe pū me ka ho'oponopono 'ana i nā kumuwaiwai 'āina, wai, kai, a lewa i ho'ohaumia a ho'opō'ino 'ē 'ia. Ma o ka ho'okō 'ana i nā kānāwai, nā papa hana, a me nā polokalamu e kākō'o ana i ka ho'okele kūpono a ho'omāunauna 'ole 'ana i ko kākou ao kūlohelohe nō e ho'oikaika ai i nā hanana ho'oponopono ma o ko kākou mau kaiaulu. Ho'ohana nō kēia 'ano hana i ka 'ike Hawai'i ku'una pau pū ho'i me nā ha'awina o ko ka 'ōnaehana kālai'āina moku a ahupua'a a me nā papa hana kālakaiaola kūpono a ho'omāunauna 'ole.



**E ho'okanaha'i i
ka malele māhūea
ho'omehana honua
(MHH) i loa'a ka 'ole
malele kalapona¹.**

'Onipa'a kākou i ka hō'ole 'ana o ka māhūea ho'omehana honua i mea e loa'a ai ka ho'okanaha'i 'ana o ka māhūea 'ino, pono e hō'eu 'ana i ka hana paepae aniau e like me ka hana hō'ipale kalapona a me ka hana ho'onui waihona kalapona.

1. E loa'a nā ka 'ole malele kalapona ke 'oi a'e ka nui o ke kalapona 'okikene lua i unuhi 'ia mai loka mai o ka ewa ma o ka ho'opa'a kalapona 'ana nā ma mua nā ho'i o ka nui kalapona i ho'omalele 'ia e ke kaiaulu.



Optimize resiliency
within local
communities.



Cultivate local
cultural practices
rooted in ecological
knowledge and
values.



Advance social equity
and community
inclusion.



Grow a thriving
local circular
economy.



Sustainably address
current and future
infrastructure
needs.



Commit to both
institutional
and individual
action and local
implementation of
climate action and
resiliency strategies.

SYMBOLS SUMMARY



The Aloha+ Challenge is a statewide public-private commitment to achieve Hawai'i's social, economic, and environmental goals by 2030.

VISIT: <https://alohachallenge.hawaii.gov>



CLEAN
ENERGY
TRANSFORMATION



SMART
SUSTAINABLE
COMMUNITIES



GREEN
WORKFORCE &
EDUCATION



NATURAL
RESOURCE
MANAGEMENT



LOCAL FOOD
PRODUCTION &
CONSUMPTION



SOLID WASTE
REDUCTION



**SUSTAINABLE
DEVELOPMENT GOALS**

The Sustainable Development Goals are a universal call to action to end poverty, protect the planet, and improve the lives and prospects of everyone, everywhere. The 17 Goals were adopted by all United Nations Member States in 2015 as part of the 2030 Agenda for Sustainable Development.

VISIT: <https://www.un.org/sustainabledevelopment/development-agenda/>



NO POVERTY



ZERO
HUNGER



GOOD HEALTH &
WELL-BEING



QUALITY
EDUCATION



GENDER
EQUALITY



CLEAN WATER &
SANITATION



AFFORDABLE &
CLEAN ENERGY



DECENT WORK &
ECONOMIC
GROWTH



INDUSTRY,
INNOVATION, &
INFRASTRUCTURE



REDUCED
INEQUALITIES



SUSTAINABLE
CITIES &
COMMUNITIES



RESPONSIBLE
CONSUMPTION &
PRODUCTION



CLIMATE ACTION



LIFE BELOW
WATER



LIFE ON LAND



PEACE, JUSTICE,
& STRONG
INSTITUTIONS



PARTNERSHIPS
FOR THE GOALS



Strategies and Actions

- The actions identified in this plan will require dedicated funding, programs to be developed and implemented, and policies and ordinances to be developed and adopted by the County of Maui and community partners in order to ensure the implementation of these actions.
- This integrated plan serves as a road map and guidance document, rather than as a policy drafting repository or database.
- Throughout this process CCRS identified 25 climate mitigation strategies and 83 supporting actions.
- CCRS also established 22 resilience strategies and 84 supporting actions to better prepare our community and build resilience against climate threats.

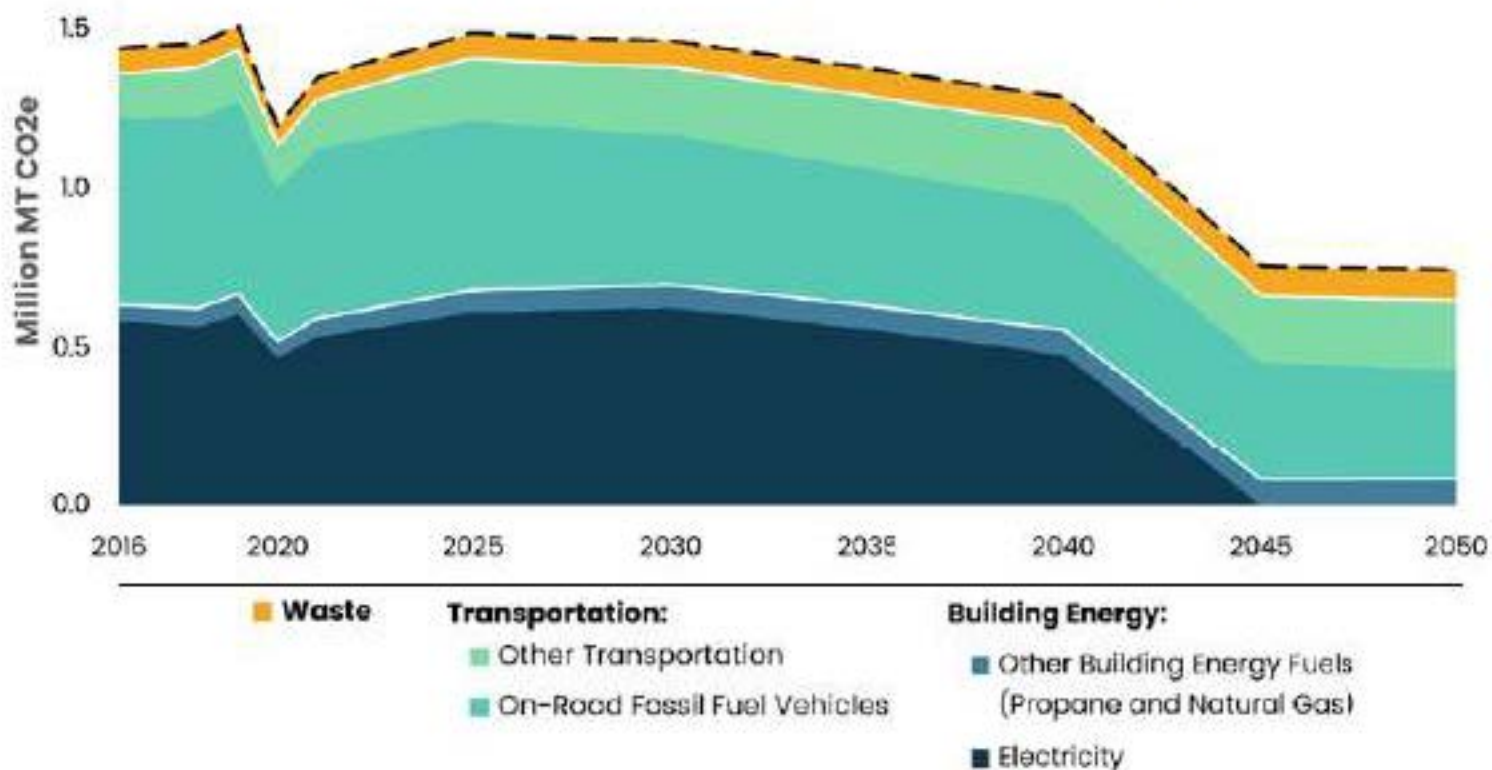
The background of the slide is a close-up photograph of a plant with vibrant red, spiky flower heads and clusters of white, fuzzy buds with pinkish-red edges.

MITIGATION STRATEGIES & ACTIONS

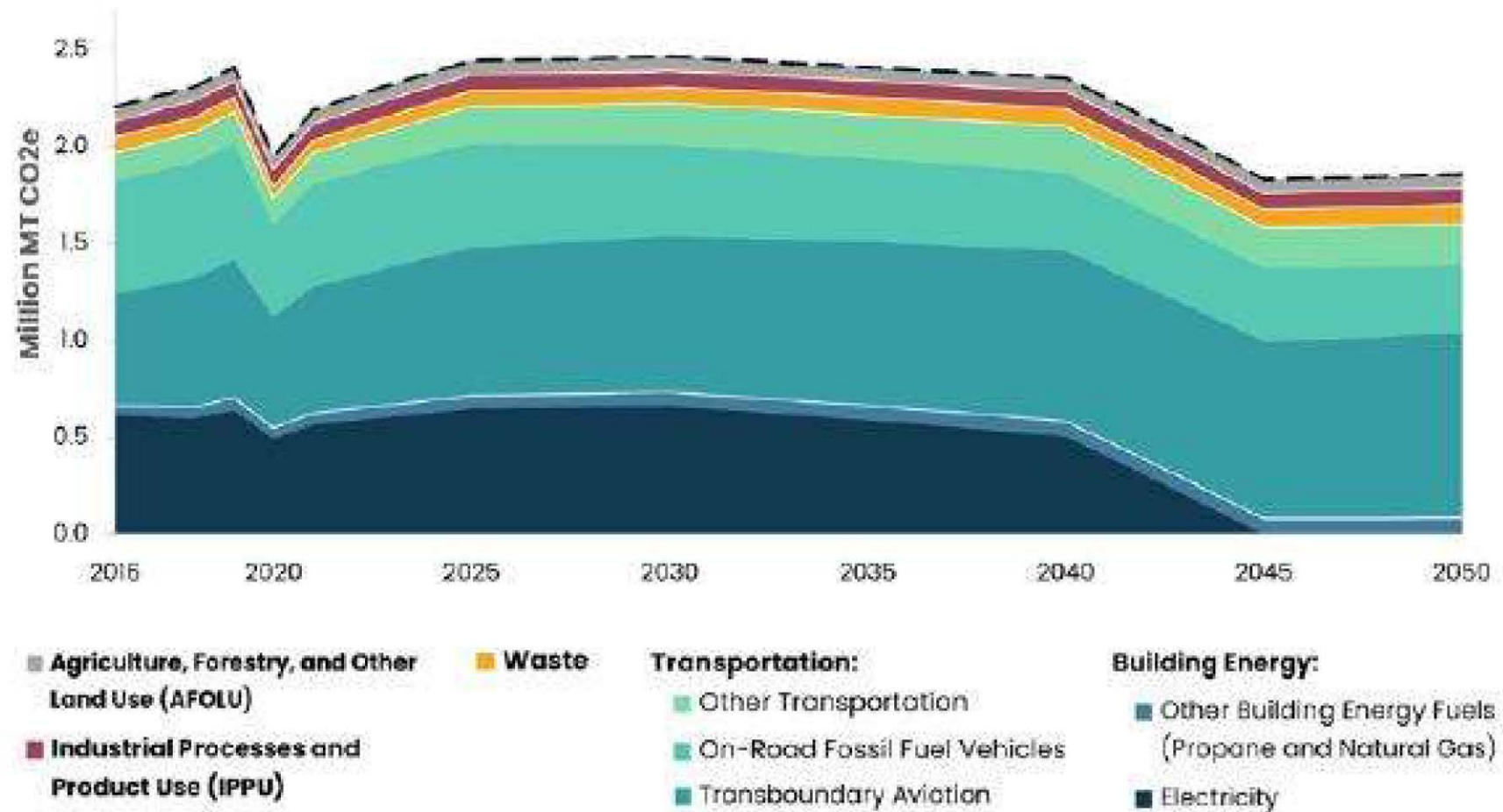
**THE
FOLLOWING
STRATEGIES
& ACTIONS**
were *identified
and vetted* by
Maui County
community
stakeholders.

BASIC Business-as-Usual Emissions Projection by Source

In a BAU scenario, emissions are expected to decrease from 1.4 million mt CO₂e in 2016 to roughly 750,000 mt CO₂e in 2050. This reduction is primarily due to Hawaiian Electric Company reaching 70% renewable energy by 2040 and 100% renewable energy by 2045.



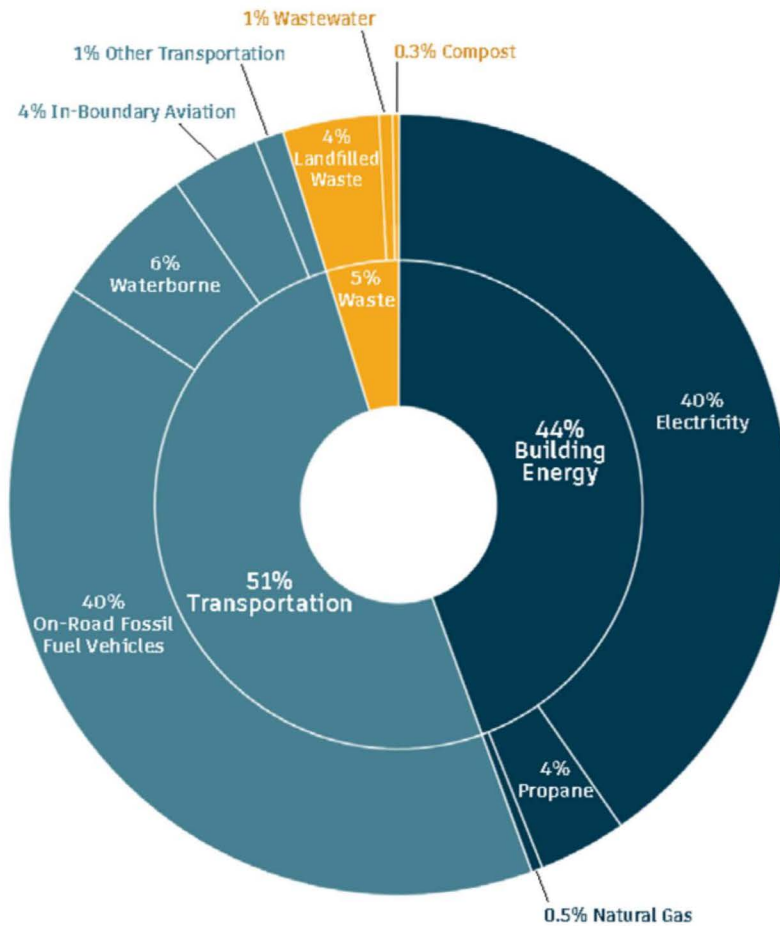
BASIC+ Business-as-Usual Emissions Projection by Source



BASIC Emissions by Sector and Source

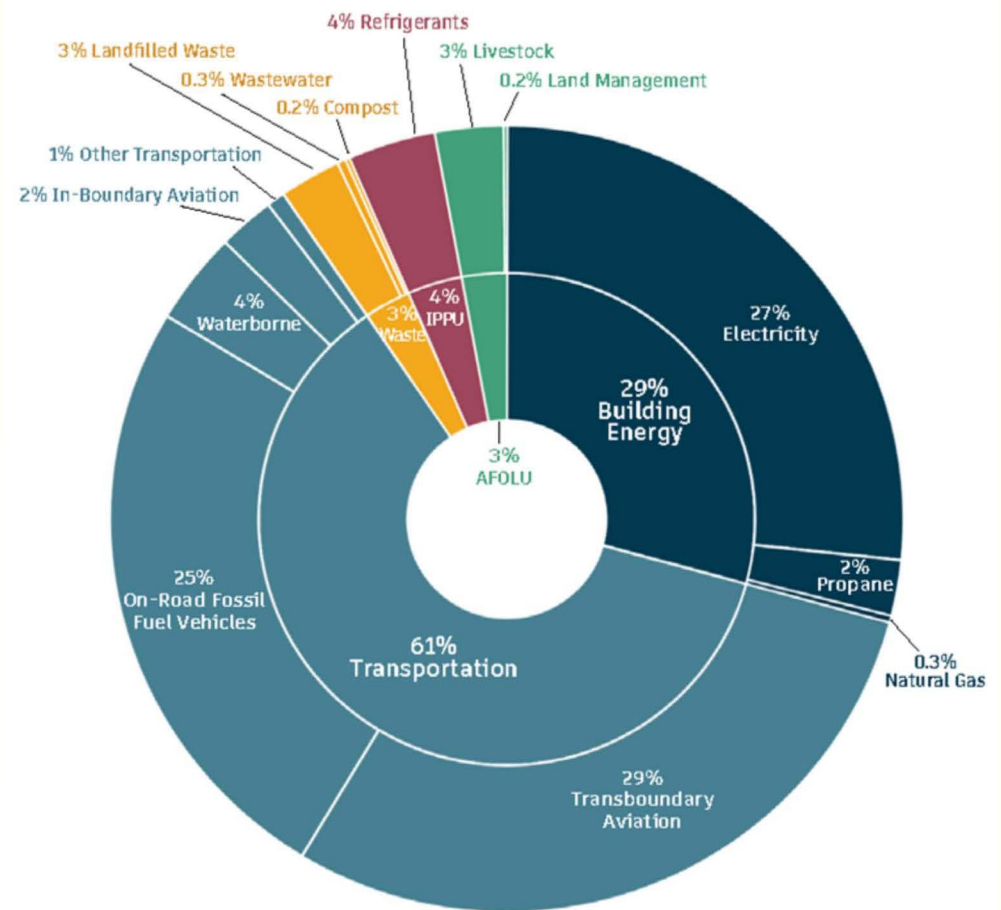
The inner circle shows the share of emissions from each sector. The outer circle displays the breakdown of emissions produced by individual sources that fall within each sector.

For example, the building energy sector produces 44% of Maui County's total emissions. Electricity, within the building energy sector, produces 40% of Maui County's total emissions.



BASIC+ Emissions by Sector and Source

BASIC+ emissions include additional sectors and sources compared to BASIC emissions. Transboundary aviation is the largest BASIC+ source and contributes 29% of Maui County's 2019 BASIC+ GHG emissions.



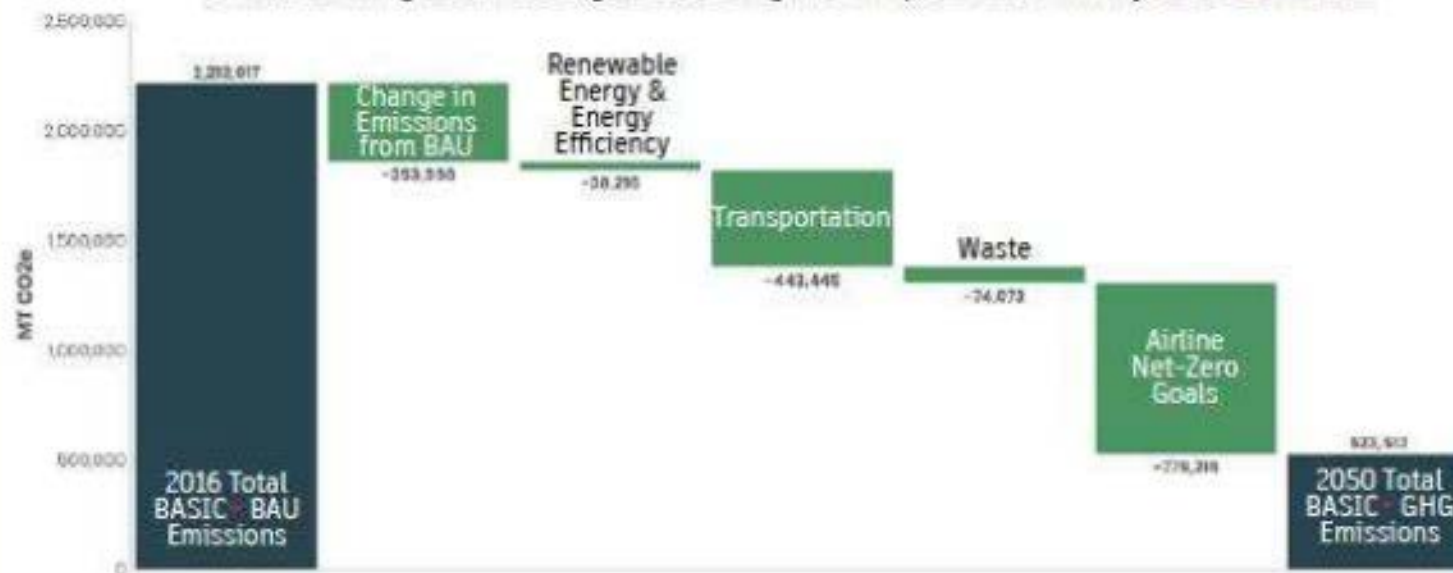
IPPU: Industrial Processes and Product Use
AFOLU: Agriculture, Forestry, and Other Land Use

Overview of Action

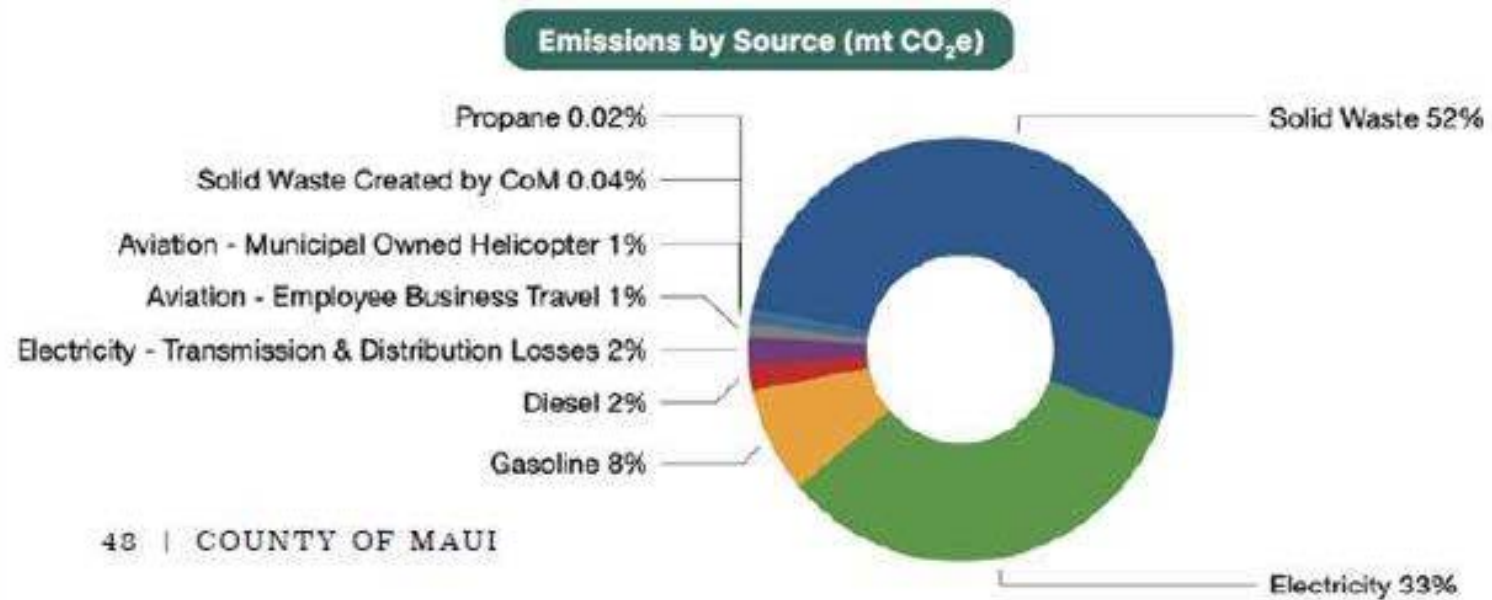
In a "Business-as-Usual" scenario, Maui County's BASIC+ GHG emissions would decrease by 16% by 2050 compared to the 2016 baseline. With the strategies and actions identified, BASIC+ GHG emissions are expected to decrease by 76% by 2050. GHG emissions in 2050 are expected to be 523,512 mt CO₂e if all strategies and actions are implemented, and major airlines meet their goals of net-zero by 2050.

2050 BASIC+ GHG Emission Totals

These are the expected BASIC+ emission totals in 2050 if all identified actions were to be implemented. Airlines reaching their net-zero goals have the greatest impact on Maui County BASIC+ emissions.



County of Maui Operations (GHG Inventory)



The background of the slide is a close-up photograph of red flowers, likely a bottlebrush, with many thin, red, needle-like petals. The flowers are in sharp focus in the foreground and become blurred towards the background. The overall color palette is dominated by reds and greens.

MITIGATION STRATEGIES & ACTIONS

Pillars

1. Municipal (*6 strategies; 19 actions*)
2. Building Energy (*6 strategies; 19 actions*)
3. Transportation (*5 strategies; 18 actions*)
4. Waste (*3 strategies; 12 actions*)
5. Agriculture, Land Use, & Natural Resources (*3 strategies; 7 actions*)
6. Outreach & Education (*2 strategies; 8 actions*)



RESILIENCY STRATEGIES & ACTIONS

Pillars

- 1. Secure Our People**
(6 strategies; 21 actions)
- 1. Secure Our Infrastructure**
(6 strategies; 32 actions)
- 1. Secure Our Natural Systems**
(5 strategies; 17 actions)
- 1. Funding and Implementation**
(5 strategies; 14 actions)

Resiliency Strategies & Actions

Secure Our People

>> STRATEGY 1

Provide easily accessible education programs and resources to grow community awareness of climate resiliency.

KEY PARTNERS: *County of Maui, local community nonprofits and organizations, Maui Economic Development Board, University of Hawai'i*

ACTION 1 MEDIUM PRIORITY

Partner with community organizations and secure funding to enhance countywide outreach and education campaigns to engage the general public, businesses, and other stakeholders on local renewable energy opportunities and resource efficient behaviors (including energy storage and electrification of transportation/clean fuels), energy efficiency programs, water conservation/efficiency, and solid waste diversion. In particular, focus on bringing these services to underserved and difficult to reach communities.

Aloha+ Challenge



UN SDGs



HIGH	Equity Impacts
MEDIUM	GHG Reduction Potential
LOW	Level of Difficulty

Timeframe: Short-term, Ongoing

Estimated Cost

\$\$\$

ACTION 2 HIGH PRIORITY

Allocate County of Maui funding and secure additional funding to establish or support existing programs that cultivate leadership and environmental stewardship in local youth. Partner with local schools and universities, Native Hawaiian organizations, and other nonprofits with climate action and resiliency programs. Build climate and resiliency action and eco-literacy for youth through education, outreach materials, focused internships, and leadership development opportunities.

Aloha+ Challenge



UN SDGs



HIGH	Equity Impacts
LOW	GHG Reduction Potential
LOW	Level of Difficulty

Timeframe: Short-term, Ongoing

Estimated Cost

\$\$\$

ACTION 3 MEDIUM PRIORITY

Secure funding to develop educational signage for visitors and community members on native plants used for landscaping on County of Maui property and create educational materials to share about the differences between native, non-native, and invasive plants.

Aloha+ Challenge



UN SDGs



MEDIUM	Equity Impacts
LOW	GHG Reduction Potential
LOW	Level of Difficulty

Timeframe: Medium-term

Estimated Cost

\$\$\$

Building Energy



Building Energy

STRATEGY 1

Increase residential solar photovoltaic (PV) and solar hot water access for all Maui County residents. Ensure that low- to moderate-income (LMI) households are able to access and pay for solar PV, battery energy storage, and solar hot water systems through partnerships, outreach, and dedicated funding.

STRATEGY 5

Create a building energy performance rating and disclosure policy that requires commercial, municipal, and multi-family buildings equal to or greater than specified square footage to publicly report annual energy usage.

STRATEGY 2

Expand renewable energy planning and expedite permitting.

STRATEGY 3

Reduce energy demand by increasing energy efficiency and continue to support energy efficiency programs, policies, and incentives.

STRATEGY 4

Proactively adopt and enforce the latest International Energy Conservation Code (IECC) to the highest national and state standards.

STRATEGY 6

Encourage, support, and incentivize beyond code green building projects.

Transportation



Transportation

STRATEGY 1

Increase EVs and adoption of other clean fuel vehicles by creating additional incentives with prioritization for LMI households.

STRATEGY 2

Expand EV charging and clean fuel refueling infrastructure in public, residential, multifamily, municipal, and commercial areas.

STRATEGY 3

Enable and provide multiple modes of green transportation prioritizing access in underserved communities.

STRATEGY 4

Increase connectivity through infrastructure improvements, multimodal transit design integration in new developments, and mixed-use zoning.

STRATEGY 5

Mitigate emissions from internal combustion engine (ICE) vehicles through emissions standards and disincentivizing ICE vehicle use.

Secure Our Infrastructure



www.resilientmauinui.org

Secure Our Infrastructure

>> STRATEGY 1

Strengthen and restore aging infrastructure across Maui County.

>> STRATEGY 2

Ensure adequate supply of fresh water, proper management of stormwater and wastewater, and irrigation management.

>> STRATEGY 3

Improve the ability of infrastructure and the built environment to withstand climate change shocks and stressors while maintaining provision of essential services.

>> STRATEGY 4

Plan for managed retreat and infrastructure relocation.

>> STRATEGY 5

Support resilient housing initiatives and reduce additional cost burdens.

>> STRATEGY 6

Plan for climate-ready transportation network and grid services.

Agriculture, Land Use, and Natural Resources



Agriculture, Land Use, and Natural Resources

STRATEGY 1

Bolster local and community-based efforts to advance nature-based solutions.

STRATEGY 2

Actively support regenerative agriculture and sustainable land reclamation.

STRATEGY 3

Implement innovative and best practices for natural resource management in the built environment.

ACTION 2 HIGH PRIORITY

Enact policies and secure funding for programs that encourage the reforestation of undeveloped or vacant deforested (fallow) lands. Prioritize xeriscaping and drought tolerant native plant species.

Aloha+ Challenge



UN SDGs



LOW

Equity Impacts

LOW

GHG Reduction Potential

MEDIUM

Level of Difficulty

ACTION 2 HIGH PRIORITY

Foster collaboration and alignment of conservation efforts between local organizations and the County of Maui. This connectivity could be led by the County of Maui with the goal of unifying efforts and sharing information with local conservation organizations.

Aloha+ Challenge



UN SDGs



LOW

Equity Impacts

LOW

GHG Reduction Potential

LOW

Level of Difficulty

Timeframe: Short-term, Ongoing

Secure Our Natural Systems



Natural Systems

>> STRATEGY 1

Improve invasive species management to increase biodiversity and protect the natural environment.

>> STRATEGY 2

Protect and improve the integrity of open space, parks, and green spaces.

>> STRATEGY 3

Promote sustainable water supply and use.

>> STRATEGY 4

Protect native ecosystems and improve environmental quality.

>> STRATEGY 5

Increase resiliency of shoreline areas through active coastal management.