KAUA‘I GHG ACTION PLANS WORKSHOP

September 14, 2023 | 5:00 – 7:00 pm HST

Voluntary Anonymous Poll

We use demographic information to ensure participation is representative.

WELCOME

Marie Williams

Manager, Long Range Planning

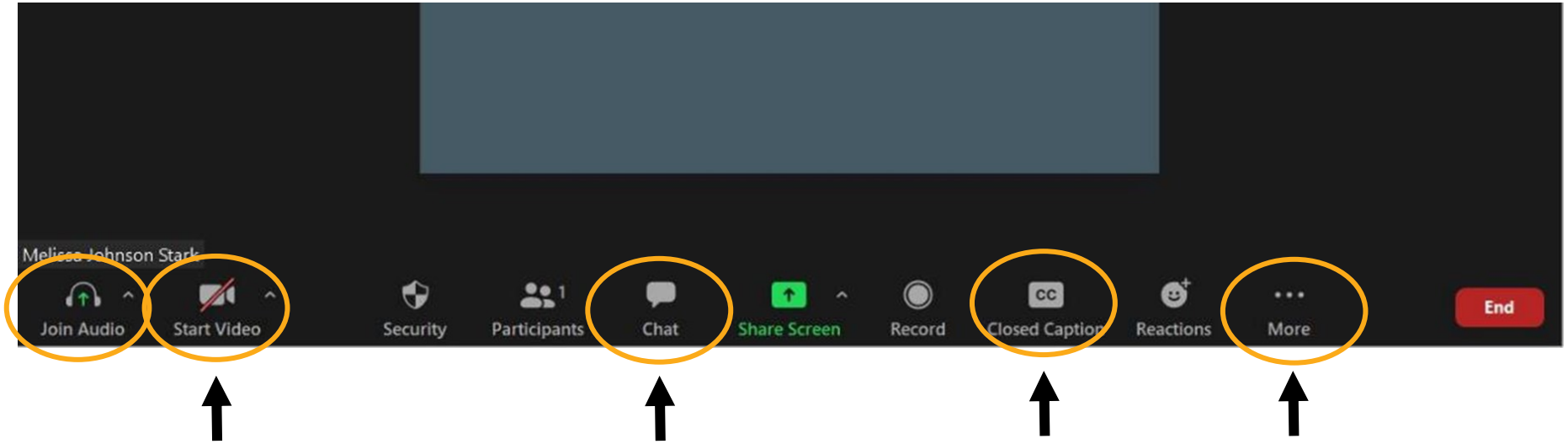
Workshop Overview

5:00-5:05pm: Welcome
5:05-5:30pm: Presentation
5:30-5:40pm: Questions
5:40-6:50pm: Mitigation Measures + Polls
6:50-7:00pm: Questions and Discussion

Zoom Basics

Two options to join audio:

1. Use your device's audio
2. Call in using a cell phone



Please **mute** your audio unless a facilitator invites you to unmute.

You can turn your video on if you are comfortable

Type in the chat if you have comments, questions, or need help

Closed Captioning is available

Raise Hand

If calling in: *6 to mute/unmute, *9 to raise/lower hand

Help email: plankauai@kauai.gov

Presentation Overview

- Project Overview
- What is Climate Change?
- What is Kauaʻi's Contribution to Climate Change?
- GHG Reduction Targets
- How will we get There?
- Questions – 10 minutes
- GHG Reduction Measures

For more information and to sign up for updates:

kauaiadaptation.com

PROJECT OVERVIEW

Why Focus on Mitigation?

POLICY #13: COMPLETE KAUA'I'S SHIFT TO CLEAN ENERGY

Mitigate climate change and reduce system-wide carbon emissions by at least 80 percent by 2050 through deep reductions in energy use and by transforming electricity, transportation, and infrastructure systems toward the use of clean energy.

POLICY #14: PREPARE FOR CLIMATE CHANGE

Prepare for impacts to the island economy, food systems, and infrastructure that will be caused by climate change.

MITIGATION

Actions that are taken to curb greenhouse gas emissions.

Low carbon transportation

Waste reduction & management

Renewable energy

ADAPTATION

Actions to reduce vulnerability to the effects of climate change

Prepare for sea level rise

Prepare for extreme heat

Emergency preparedness & response

RESILIENCE

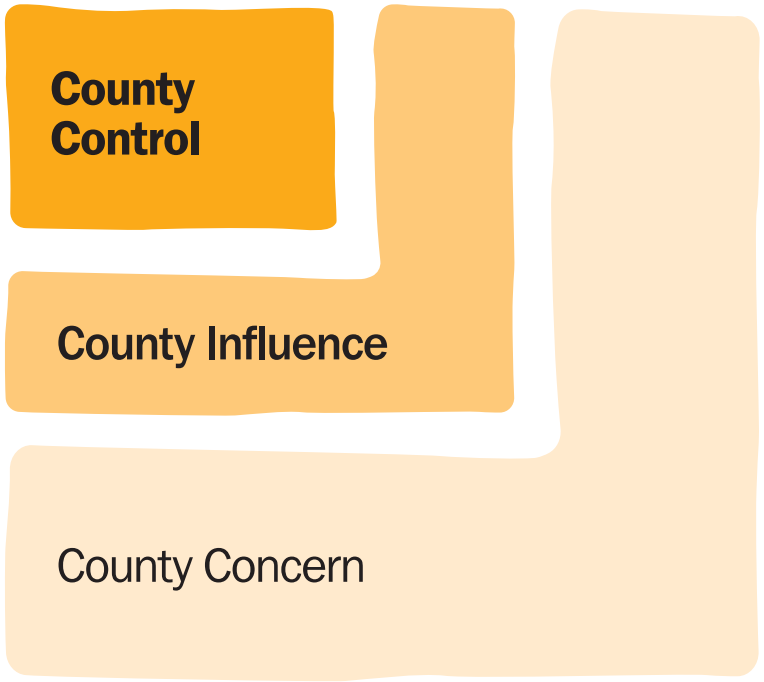
Actions that increase the community's capacity to prepare, recover from, and grow from shocks and stressors.

Food system

Affordable housing

Social cohesion

What Emissions can the County Address?



- **County control**: quantifiable or supportive measures
  - Clean energy, New and Existing buildings
  - Transportation + Land Use
  - Solid waste
  - Natural resource management
- **County influence**: supportive measures not quantified
- **County concern**: not included, such as aviation fuel

GHG Mitigation Planning Process

We are here -- your input needed!

Input from Spring 2022 Open Houses → Review 2017 inventory, prepare forecast → Identify measures to reach 2045 GHG reduction targets → Develop prioritized list of GHG reduction measures → GHG Reduction Action Plans

Other Opportunities to Provide Feedback

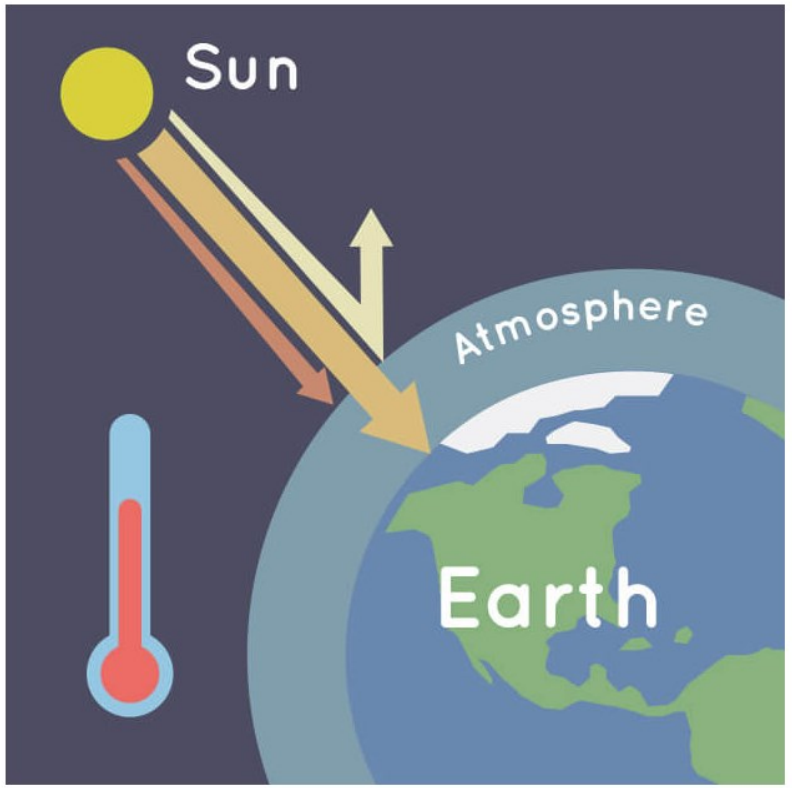
- Rate and comment on a possible GHG reduction strategies at: https://kauaiclimateaction.consider.it/
  - Open from September 6- October 15
- In-person workshops
  - Tuesday, 9/19, 5:00pm - 7:00pm, Kalaheo Neighborhood Center
  - Wednesday, 9/20, 5:00pm – 7:00pm, Saint Catherine's School

WHAT IS CLIMATE CHANGE?

What is Climate and the Greenhouse Effect?

Climate is the long-term behavior of the atmosphere – typically represented as averages

- Includes average annual temperature, snowpack, and rainfall
- Greenhouse gases trap heat in the atmosphere, resulting in warming over time
- Most common greenhouse gases, include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons (CFCs), hydrochlorofluorocarbons and Hydrofluorocarbons (HCFCs and HFCs)
- Normalize different GWPs to MTCO2e

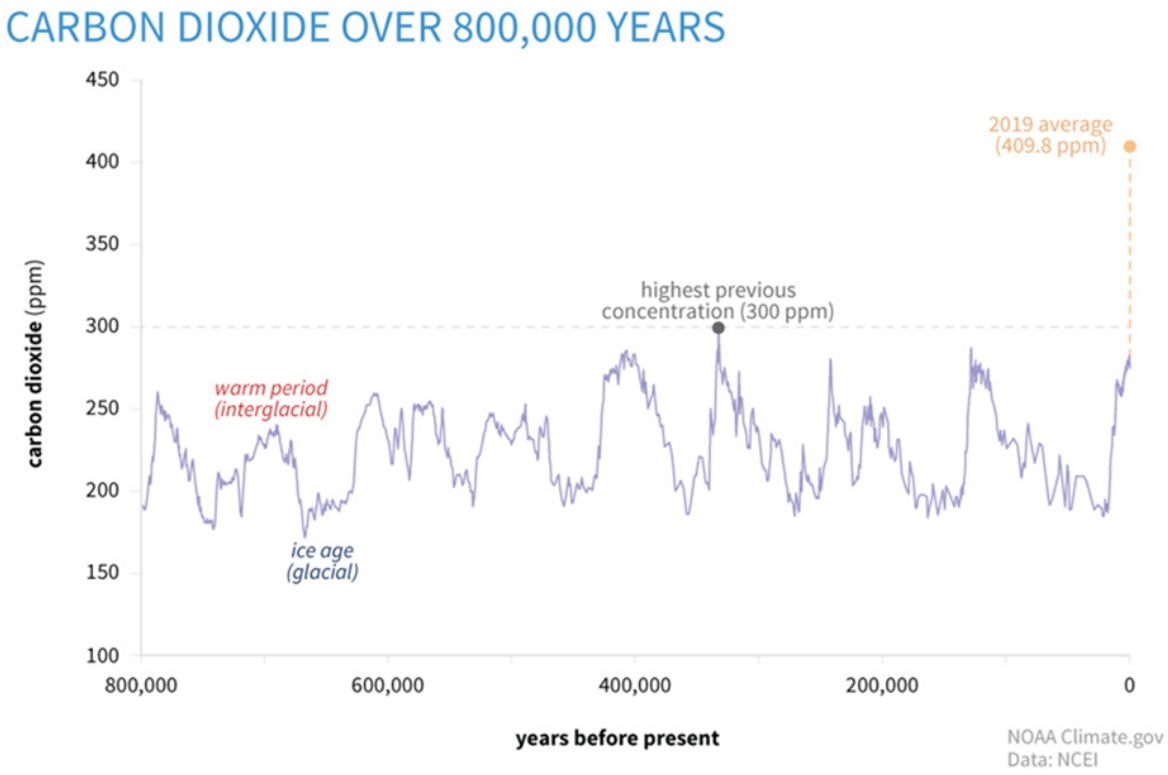


Earth's atmosphere traps some of the Sun's heat, preventing it from escaping back into space at night. Credit: NASA/JPL-Caltech

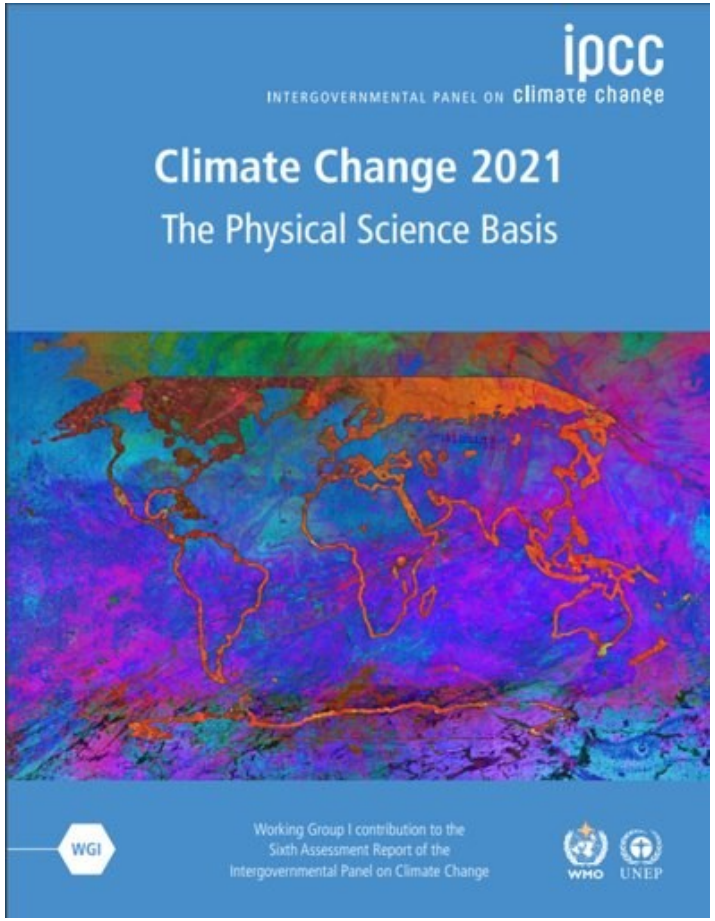
Change in Greenhouse Gases

GHGs have been relatively constant throughout history but have increased sharply

- Since the industrial revolution, human-caused GHG emissions have sharply increased driven by:
  - Fossil fuel combustion
  - Deforestation other land use changes
  - Agricultural practices



Current State of the Climate



It is "unequivocal" that human emissions of carbon dioxide and other greenhouse gas emissions have warmed the atmosphere, ocean, and land

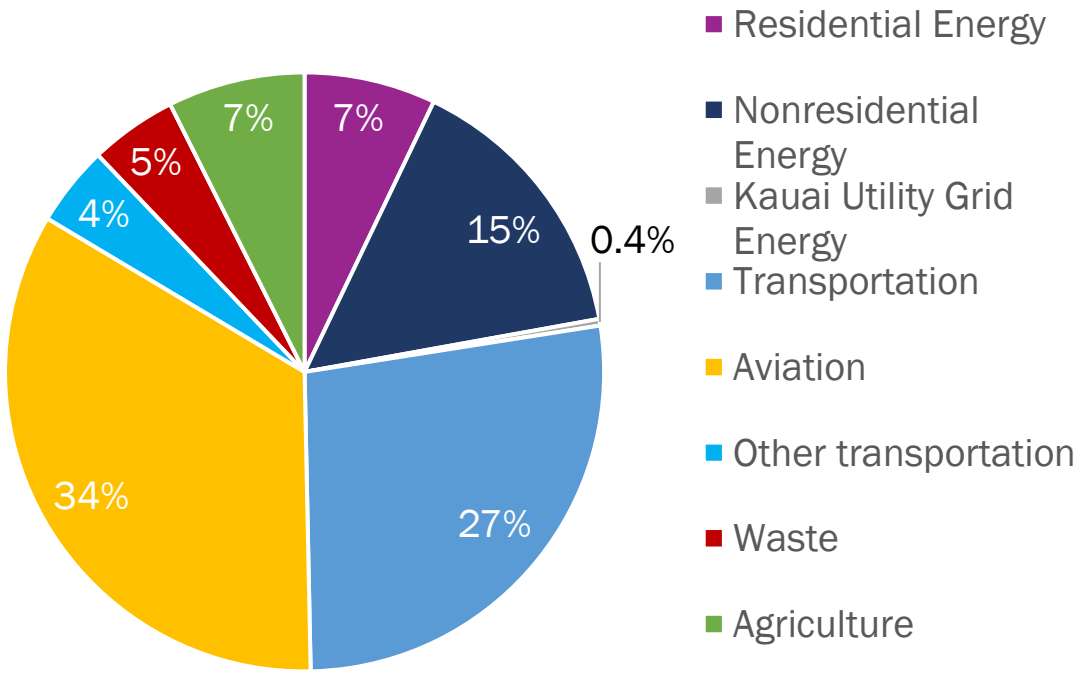
- Human-induced climate change is already affecting many weather and climate extremes in every region across the globe.
- Observed changes include
  - Heatwaves/extreme heat
  - Heavy precipitation
  - Droughts
  - More frequent and intense hurricanes

WHAT IS KAUAʻI'S CONTRIBUTION TO CLIMATE CHANGE?

2017 Emissions Profiles

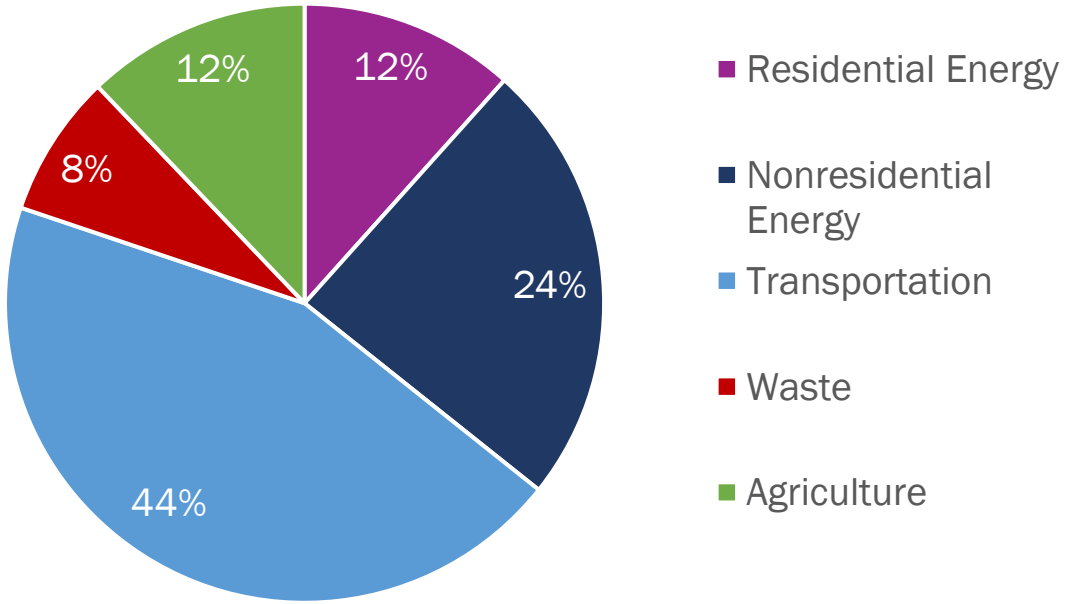
$MTCO_2e$ = Metric Tons of Carbon Dioxide Equivalent

ALL SECTORS



Total Emissions = 1,011,471 MTCO2e

ADJUSTED SECTORS



Total Emissions = 619,958 MTCO2e

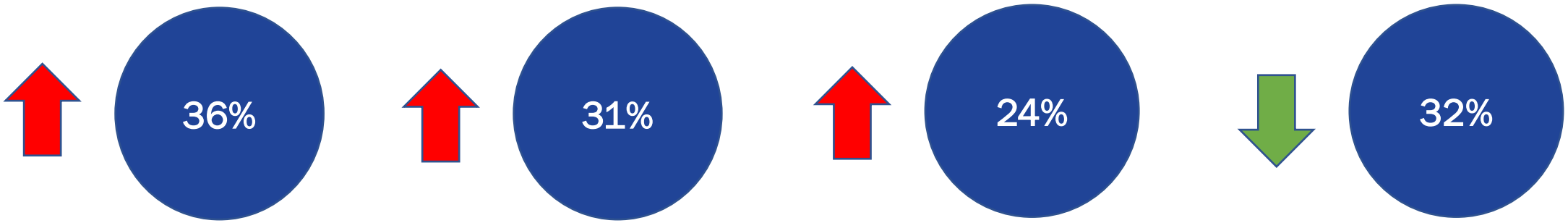
Projected Trends 2017-2045

The Adjusted Business-as-Usual (ABAU) forecast accounts for emissions reductions from federal fuel standards and the KIUC Renewable Portfolio Standard.

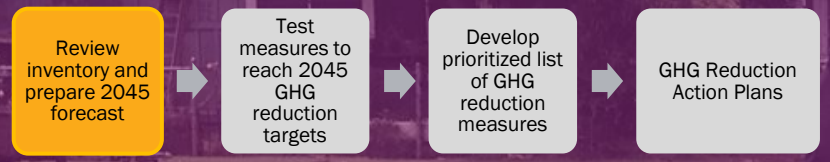
Emissions are projected **to decrease 32%** by 2045, despite housing, jobs, and population growth.

Total ABAU scenario 2045 emissions =

420,067 MTCO2e

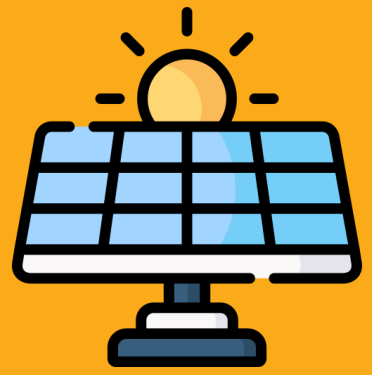


Housing Units | Jobs | Population | GHG Emissions



Projected Trends 2017-2045

Fewer Energy Emissions



Why?

More electricity from KIUC made from clean sources (solar, hydroelectric)

- 53% Residential GHGs

- 66% Nonresidential GHGs

Fewer Transportation Emissions

Why?

Cleaner fuel requirements from the Federal government

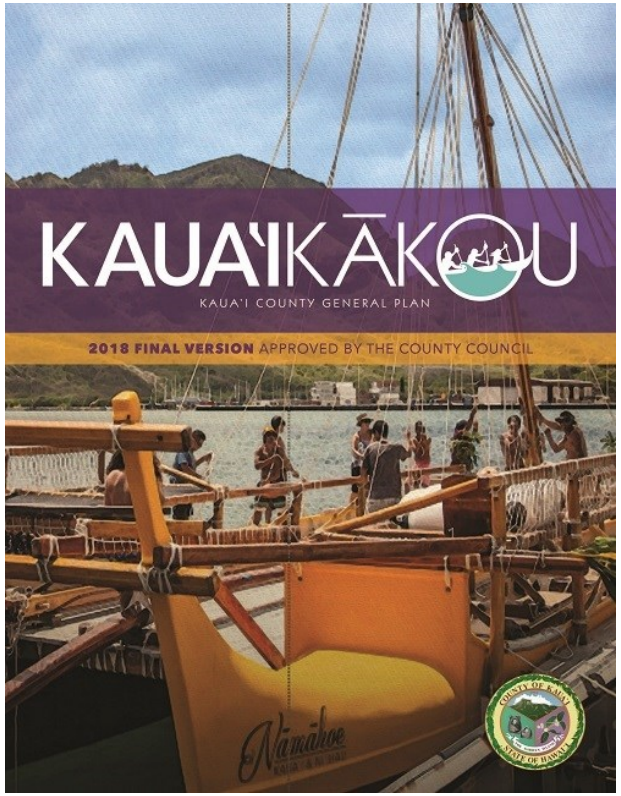
- 24% Transportation GHGs

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → Develop prioritized list of GHG reduction measures → Create implementation pathways

GHG REDUCTION TARGETS

The County's GHG Reduction Target

Reduce GHG emissions by at least 80% by 2050



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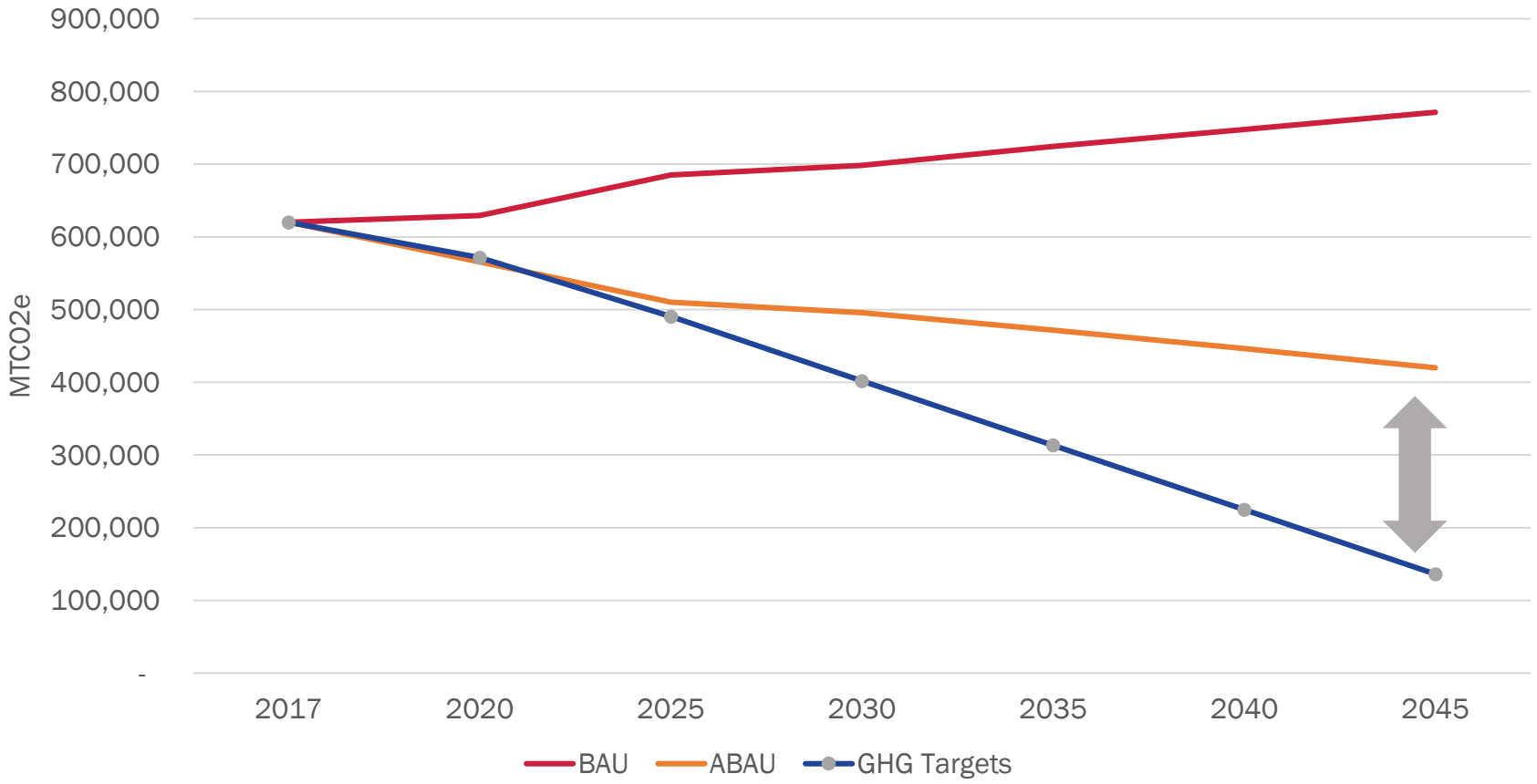
2045 Projected Emissions



Business-as-Usual (BAU)
- 771,382 MTCO2e
- Continues trend from 2017 inventory

Adjusted Business-as-Usual (ABAU)
- 420,067 MTCO2e
- 38% reduction from the 2005 baseline year emissions

Emissions Gap: Local measures need to reduce 283,846 MTCO2e to reach target

Reduction Target
- 136,221 MTCO2e
- 80% reduction by 2050 as compared to 2005 baseline

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → Develop prioritized list of GHG reduction measures → GHG Reduction Action Plans

HOW WILL WE GET THERE?

Mitigation Sectors

- Clean Energy, New + Existing Buildings
- Transportation + Land Use
- Waste Reduction
- Natural Resources Management

Sector Specific Targets

Clean Energy:

- 70% Clean Energy (40% renewable and 30% from efficiency) by 2030 *(Hawaii Clean Energy Initiative (HCEI) HRS section 196-10.5)*
- 100% renewable energy by 2045 *(Renewed HCEI HRS Section 269-92)*

Transportation + Land Use:

- Reduce ground transportation emissions by 100% by 2045 *(Statewide Mayoral Commitment)*
- Reduce ground transportation emissions from County vehicles to 100% by 2035 (Kauai General Plan)
- Transition County's bus fleet to 100% electric by 2035 (Kaua'i General Plan)

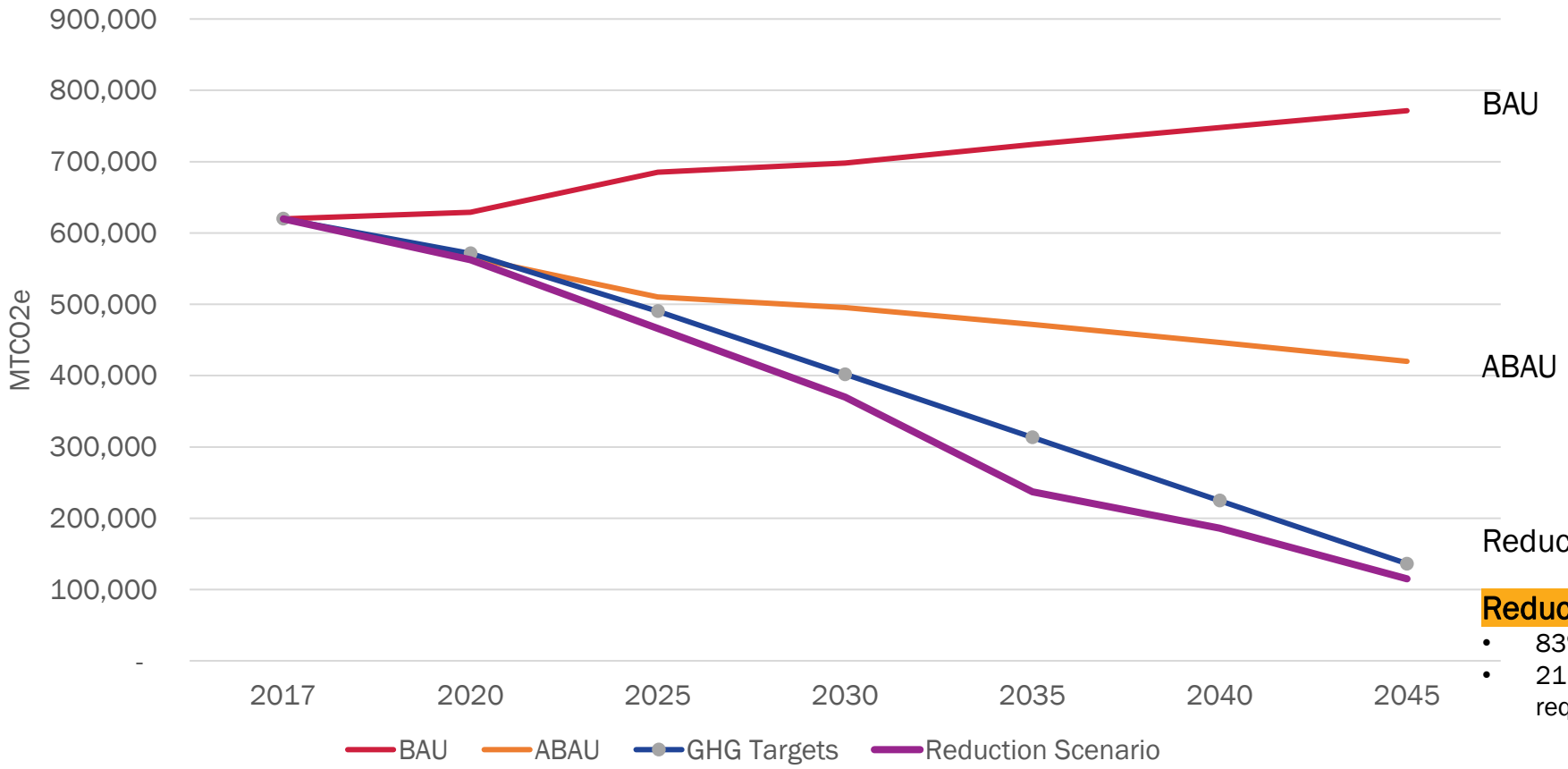
Waste Reduction:

- Divert at least 70% of solid waste (Kaua'i General Plan)

Natural Resource Management:

- Not yet quantified

GHG Reduction Analysis Results



BAU

ABAU

Reduction Target

Reduction Scenario

- 83% reduction as compared to 2005 baseline
- 21,000 MTCO2e more GHGs reduced than required to meet reduction target

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GHG Reduction Analysis Results

Assumptions	2045 GHG Reduction	2045 GHG Gap ($MTCO_2e$)
Phased-in approach • **25-38%** buildings participate in energy and/or decarbonization upgrades • **14%** EV (of total vehicles) • **13%** additional mode shift (27.5% non-SOV)	**-83%**	Excess reductions of 21,000

EV = electric vehicle

SOV = single occupancy vehicle

Questions?

GHG REDUCTION MEASURES

2022 Community Input

- Address transportation emissions through active transportation and more EVs and EV chargers
- Continue shift to renewable energy
- Reduce waste going to landfill with curbside recycling, green waste, and/or food waste collection
- Reduce air travel emissions

Measures by Sector

Sectors	No. Of Actions	2045 GHG Reduction Potential (MTCO2e)
Clean Energy + Buildings	11	30,140
Transportation + Land Use	17	232,160
Waste Reduction	7	42,400
Natural Resource Management	7	<100
Total	**42**	**304,760**

All GHG Mitigation Measures

Clean Energy + Buildings

- County renewable energy projects
- Solar, battery, and EV charging permitting
- Explore methane capture and reuse
- Develop green building guide
- New construction reach code requiring carbon free energy sources
- New Construction requirements for low embodied carbon materials
- Existing building energy and water benchmarking
- Energy Savings Performance Contract for County facilities
- Promote and implement efficiency incentives
- Phased-in decarbonization plan for existing buildings
- Decarbonization plan for County facilities

Transportation + Land Use

- Encourage EVSE for commercial and MUDs
- Lobby the state to support ZEV policies
- Partner with KIUC to support ZEV adoption
- Clean transportation options for visitors
- Support the adoption of e-mobility options
- Pilot ZEV carshare program
- ZEV-specific training programs and pathways
- ZEV public education campaign
- Decarbonize County maintenance equipment
- Smart Growth Development
- Community TDM program
- County TDM program
- Reform parking standards
- Multimodal transportation networks
- Complete Street improvements
- Support 2018 Kaua'i Short-Range Transit Plan

Waste Reduction

- Curbside recycling and organics collection
- Divert food waste from landfill
- Expand Disposal Bans to include C&D materials
- Solid waste public engagement program
- Support source reduction Statewide
- Policies for plastic and polystyrene reduction
- County Recycled Product Purchasing Policy

Natural Resource Management

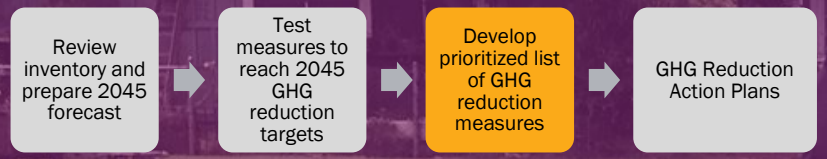
- Promote State water efficiency incentives and programs
- UPC green plumbing code for new construction and alternations
- Model Water Efficient Landscape Ordinance (MWELO)
- Encourage water neutral new development
- Promote greywater systems
- Urban Forest Management Plan
- Develop a Local Agricultural/Working Lands strategy

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → **Develop prioritized list of GHG reduction measures** → GHG Reduction Action Plans

GHG Reduction Potential

Category	Icon	Description
Low		Less than 10,000 $MTCO_2e$
Medium		10,000-20,000 $MTCO_2e$
High		More than 20,000 $MTCO_2e$
Supportive		No direct GHG reduction

$MTCO_2e$ = Metric Tons of Carbon Dioxide Equivalent



Polling Exercise -- Mentimeter

Go to

www.menti.com

Enter the code

2577 2888

Or use QR code

Clean Energy

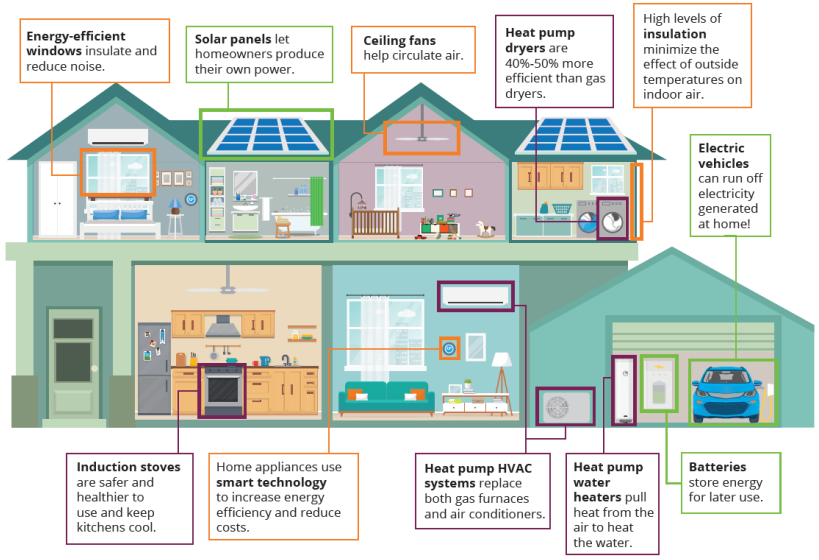
Expand County renewable energy projects

Streamline solar, battery, and EV charging permitting

Explore methane capture and reuse at County facilities

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → **Develop prioritized list of GHG reduction measures** → GHG Reduction Action Plans

New Buildings – Carbon Free Construction

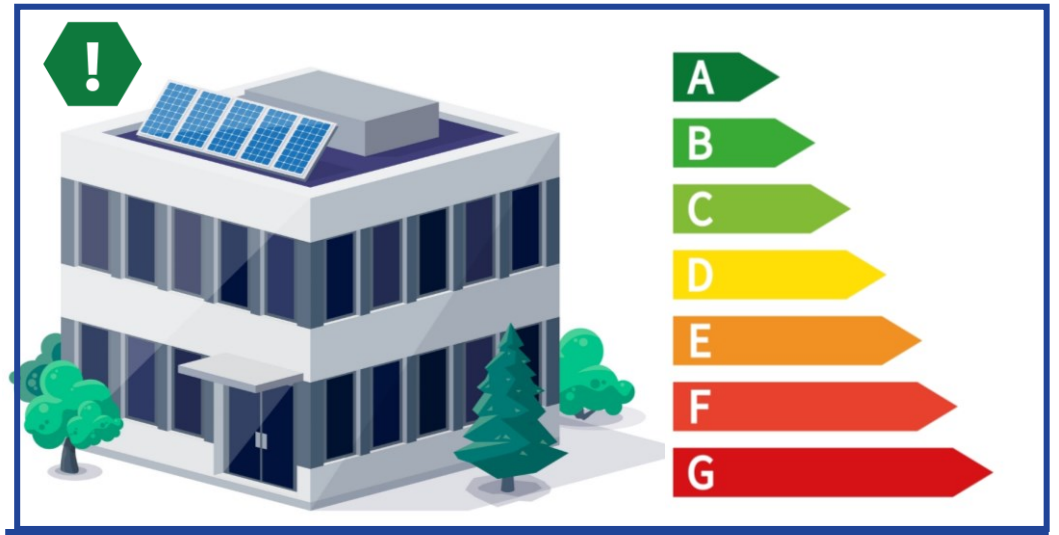


Adopt a phased-in reach code requiring new construction and alterations or additions at least 50% the size of the original building be designed to be 50% powered using carbon-free energy, with increasing percentage by an agreed upon increment and timeline

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → **Develop prioritized list of GHG reduction measures** → GHG Reduction Action Plans

Existing Buildings – Energy Efficiency

Work with KIUC to promote and implement efficiency incentives and programs.



Adopt energy and water benchmarking ordinance for commercial buildings over a specified square footage.

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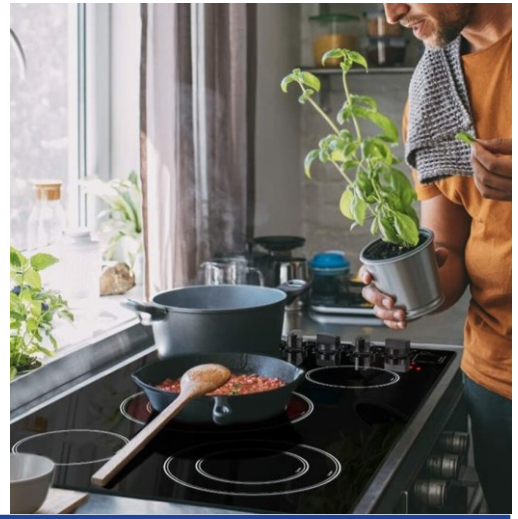
Existing Buildings – Decarbonization

POLL



Adopt a phased in decarbonization plan for existing buildings that promotes, and as-needed, requires the retrofit of existing buildings to be powered using carbon-free energy.

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Transportation + Land Use - Electrification

Clean Fuel Transportation Plan

Encourage and fund EV ready/EVSE-Installed for commercial and multi-family dwellings

Support the adoption of e-mobility options by residents, businesses, and visitors

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Transportation + Land Use – VMT Reduction

POLL

Explore adopting a mandatory Transportation Demand Management (TDM) program

Plan and build seamless multimodal transportation networks in Kaua‘i’s jobs/housing centers

Partner with Kaua‘i Bus to support and implement the 2018 Kaua‘i Short-Range Transit Plan

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → Develop prioritized list of GHG reduction measures → Create implementation pathways

Waste Reduction – Recycling & Greenwaste

Evaluate Implementation of a New Curbside Collection for Recycling with a Potential Future Addition of Green Waste and Food Waste or Enhance Drop-off Recycling

Implement a tiered approach to ban food waste from landfill

Expand Disposal Bans to include Select C&D Materials

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → Develop prioritized list of GHG reduction measures → GHG Reduction Action Plans

Waste Reduction – Source Reduction

POLL

Advocate for source reduction laws at the State level

Build off and expand policies for plastic and polystyrene reduction and compostable use to include single use plastic packaging materials and foodware.

Review inventory and prepare 2045 forecast → Test measures to reach 2045 GHG reduction targets → Develop prioritized list of GHG reduction measures → GHG Reduction Action Plans

POLL

Natural Resource Management

Update the building code with higher water efficiency requirements for new construction and alterations

Promote dual plumbing and laundry-to-landscape in residential buildings to increase the use of greywater

Adopt and implement an Urban Forest Management Plan

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Questions and Discussion

Mahalo!