



Planning for Organics: From Waste to Resource

AMERICAN PLANNING ASSOCIATION, HAWAI'I

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AGENDA

California Legislation

The Basics

Enforcement

Hawai'i Legislation Parallels

Implementation

Strategies

Challenges

Case Studies

Opportunities

- **[SB 1383](#)** (Lara, 2016) - *Short-lived climate pollutants: methane emissions: dairy and livestock: organic waste: landfills.*
- **Goal** "...to support the adoption of policies that improve organics recycling and innovative, cost effective, and environmentally beneficial uses of biomethane derived from solid waste facilities."
- **Strategy**...divert organics from landfills & redirect edible food



CA LEGISLATION



[Global Warming Solutions Act of 2006 \(AB 32\)](#)

- 40% below 1990 CO₂e levels by 2030 ([SB 32](#)); and
- 85% below 1990 levels and Carbon neutrality by 2045 ([AB 1279](#)).

[California Integrated Waste Management Act of 1989 \(IWMA\)](#) and [SB 2016](#) requiring 50% of landfill-bound, solid wastes to be diverted from '03-'06 baseline.

[California Air Resources Board \(ARB\)](#)

- By 1/1/18, approve/implement strategy for reducing SLCPs below 2013 levels (CH₄ (40%)*, HFCs (40%), ABC (50%)) by 2030.
- Coordination w/...
 - [California Dep't of Food and Agriculture](#) (CDFA) on CH₄ emissions from livestock and dairy operations; and
 - [California Public Utilities Commission](#) (CPUC) on infrastructure for sustainable production/use of renewable gas.

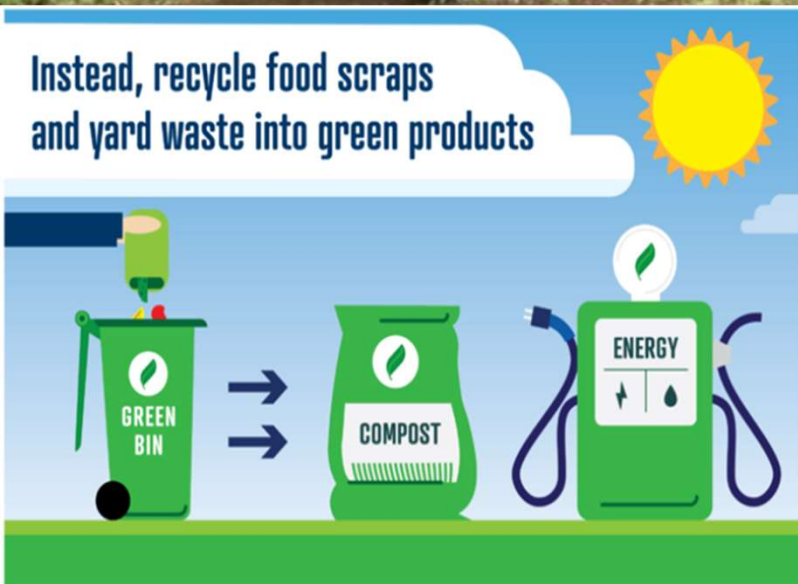
[State Energy Resources Conservation and Development Commission](#) (aka, the CEC)

- Coordination w/ ARB and CPUC to develop recommendations for use of renewable gas beginning w the 2017 [Integrated Energy Policy Report](#) (IEPR), interrelations w/ [Low Carbon Fuel Standard](#) (LCFS), [Renewable Portfolio Standard](#) (RPS), Integrated Waste Management Plans (IWMP), *etc.*

[CA Dept of Resources Recycling & Recovery](#) (CalRecycle)

- Reduce landfill organics disposal (50% by 2020; 75% by 2025)*





IWMA makes all California cities, counties, and approved regional solid waste management agencies responsible for waste diversion mandates.

- [SB 1383](#) provides specific mandates for organic waste diversion

Jurisdictions then regulate organic waste generators, haulers, and other entities subject to these statutes and regulations

- **Generators** - A person or entity that is responsible for the initial creation of organic waste ([14 CCR 18982\(48\)](#))
- **Hauler** – A person who collects material from a generator and delivers it to a reporting entity, end user, or a destination outside of the state ([14 CCR 18982\(31\)](#); [14 CCR 18815.2\(a\)\(32\)](#))
- **“Organic waste”** includes food, green material, landscape and pruning waste, organic textiles and carpets, lumber, wood, paper products, printing and writing paper, manure, biosolids, digestate, and sludges ([14 CCR 18982\(a\)\(46\)](#))

ENFORCEMENT



HOW ARE WE DOING?

- 2020 GHG reduction targets met 4 yrs ahead of schedule, *but* California is behind for the 2030 and 2045 milestones
- CalRecycle's [Analysis of the Progress Toward the SB 1383 Waste Reduction Goals \(DRRR-2020-1693\)](#) (08/2020)
 - Est need to divert 27 MT of organic material by 2025, including edible food and 18 MT to be processed (compost, AD, chip-and-grind, other).
 - Significant expansion of organics recycling and recovery infrastructure is needed - 2020 capacity projections put infrastructure as only capable of processing 55% (10 of the 18 MT) needed.
 - Regulatory mandates and procurement requirements help attract private investment and develop markets for compost and biomethane.
 - Infrastructure permitting and regulatory requirements remain necessary.
- Next organics landfill diversion milestone is 75% by 2025



ENFORCEMENT

- 2016-2022 – Implement SB 1383 and enact/adopt enforcement mechanisms
- 2022-2023 – Identify violators and provide education
 - [SB 619](#) (Laird, 2021) allowed submission of a *Notification of Intent to Comply* (NOIC) and *Corrective Action Plan* (CAP)
- 2024 - Begin enforcement; notifications and deadlines to comply
 - Min reqs for inspections & monitoring
 - Recordkeeping
- CalRecycle evaluates/enforces jurisdictional compliance
 - Discretion to focus on compliance assistance/CAP approach
 - IWMA’s “Good Faith Effort” is not exactly congruent w/ SB 1383’s “Substantial Effort”
 - Jurisdictions are 1st line of enforcement but CalRecycle may act directly
- Haulers, generators face fines, revocation of permits/licenses.
- Jurisdictions face fines up to \$10,000 per violation per day.

LEGISLATION PARALLELS





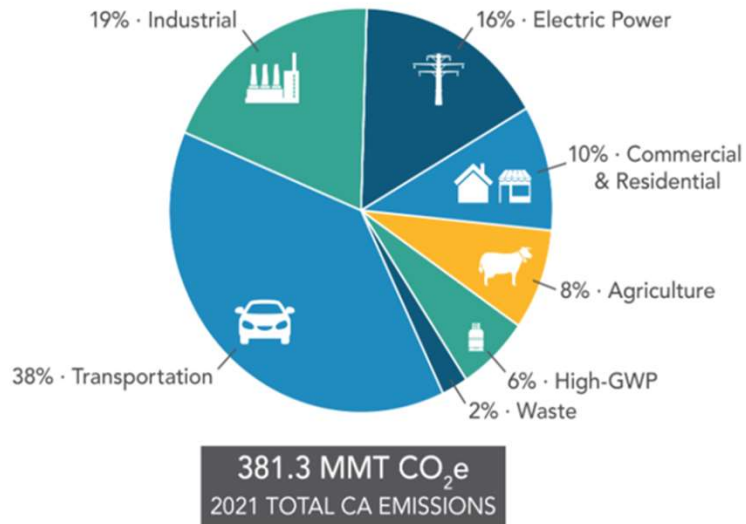
BASELINES - CALIFORNIA & HAWAI'I

	California	Hawai'i	%
Area (km2)	403,882	16,635	4%
Population (M)	39	1.4	4%
Pop/Sq Mi (Density)	254	227	~
GDP (\$B)	3,862.20	108	3%
Land in Farms (M Acres)	23.8	1.1	5%
Total GHG Emissions (MMT CO2e)	381.3	11.6	3%
% From Agriculture	8%	6%	~
Number of Landfills (Total/Operational)	409/179	15/8	~
Waste to Landfills/Year (MT)	40	0.2	1%

Sources: U.S. States Profiles & Energy Estimates (<https://www.eia.gov/state/compare/#?selected=US>); U.S. Census Bureau (<https://www.census.gov/quickfacts/fact/table/CA,HI,US/PST045223>); Hawai'i State Energy Office (<https://energy.hawaii.gov/what-we-do/clean-energy-vision/decarbonization-strategy/>); California Air Resources Board (<https://ww2.arb.ca.gov/ghg-inventory-graphs>); U.S. Environmental Protection Agency, Landfill Methane Outreach Program (<https://www.epa.gov/lmop/project-and-landfill-data-state>); CalRecycle (<https://calrecycle.ca.gov/wcs/dbstudy/#:-:text=California%20Threw%20About%2040%20Million,Disposal%20Facility%2DBased%20Waste%20Characterization>);

BASELINES CALIFORNIA & HAWAI'I

2021 GHG Emissions by Scoping Plan Category



GHG Emissions by Sector

Statewide GHG emissions by economic sector from Hawaii's 2019 GHG Inventory.

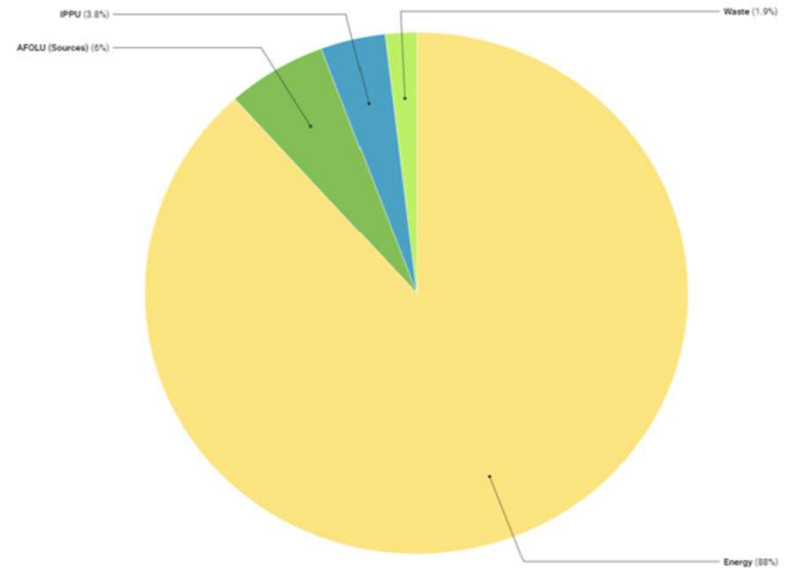
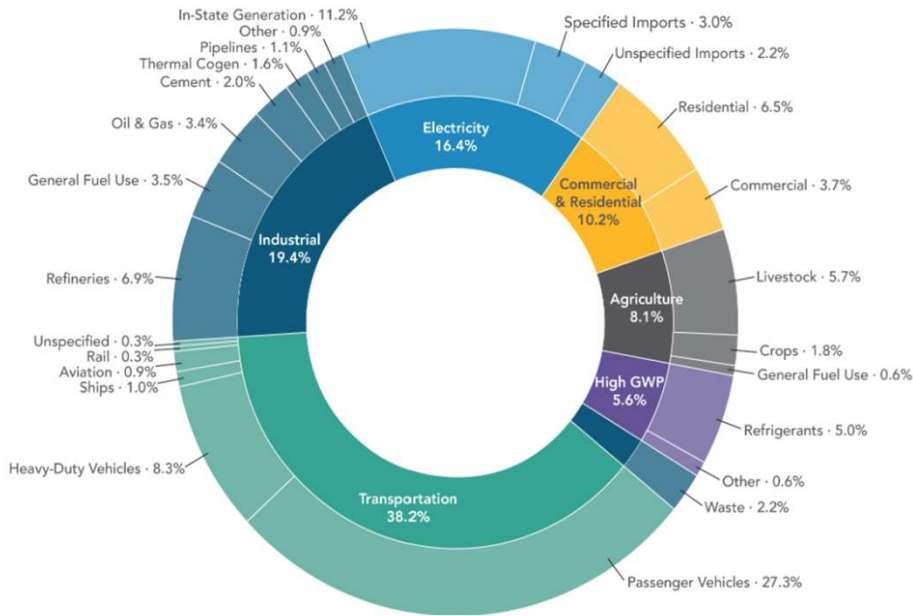


Chart: Hawaii State Energy Office • Source: State of Hawaii Department of Health, Clean Air Branch • Get the data • Created with Datawrapper

Baselines - California & Hawai'i

2021 GHG Emission by Scoping Plan Sub-Category



Greenhouse Gas Emissions by Sector and Category

Emissions expressed in million metric tons (MMT) CO2 equivalent

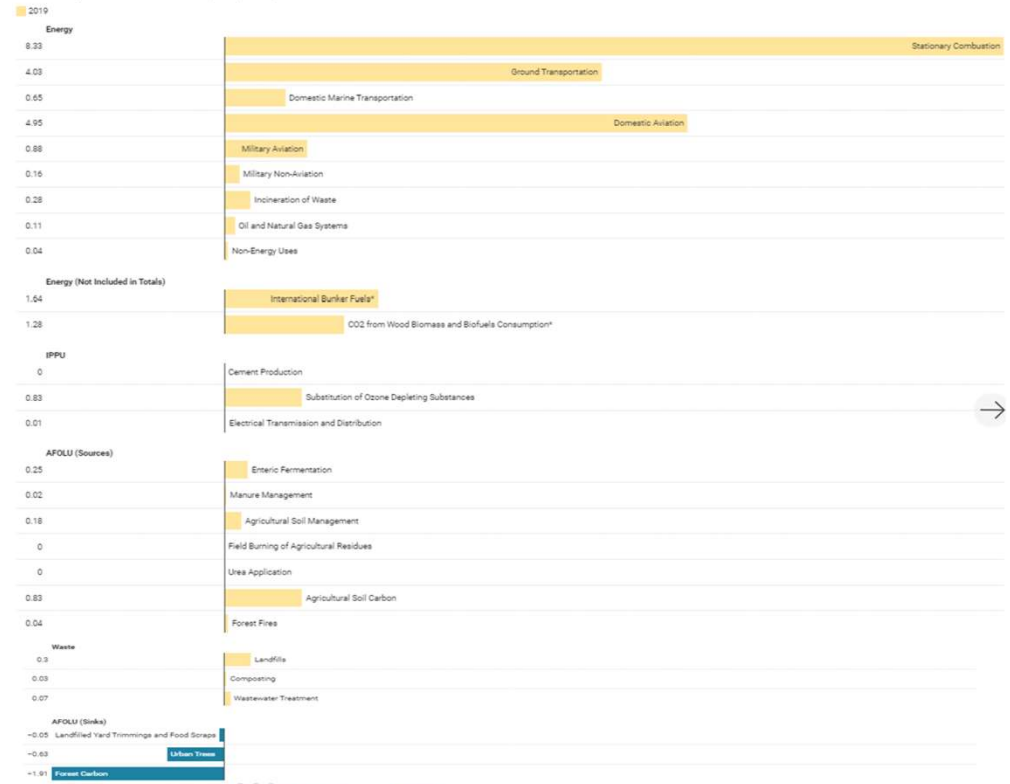


Chart: Hawaii's State Energy Office - Source: State of Hawaii Department of Health - Get the data - Created with Datawrapper

State of Hawai'i Decarbonization - Net Emissions Goal

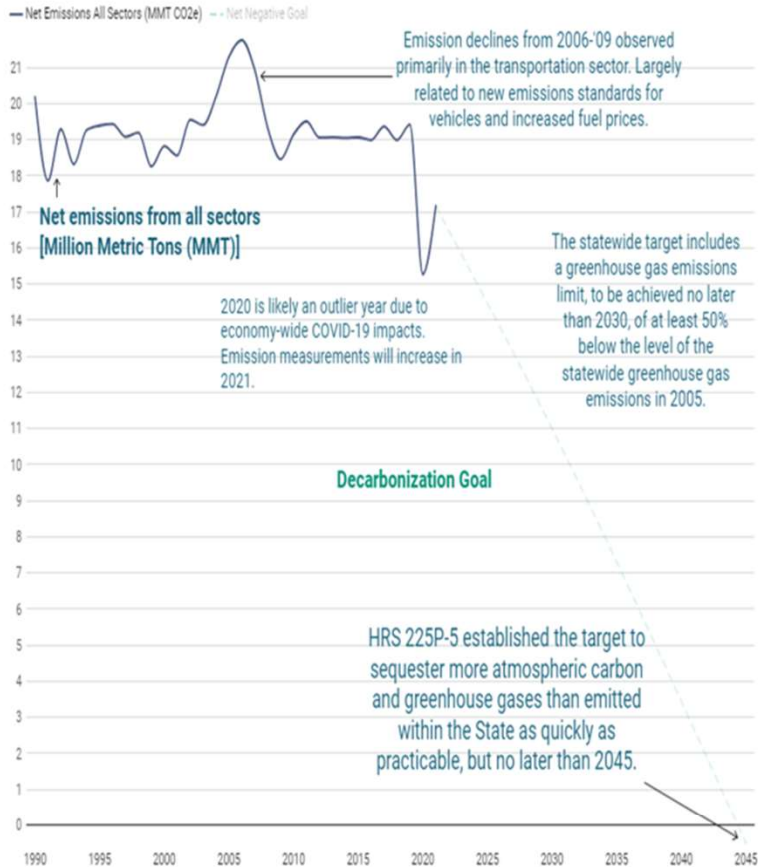


Chart: Hawai'i State Energy Office • Source: United States EPA Greenhouse Gas Inventory Data Explorer • Get the data • Download image • Created with Datawrapper

The data presented above are rounded to the nearest tenth and are for demonstration purposes. Data were obtained from the United States Environmental Protection Agency (EPA) Greenhouse Gas Inventory to show annual measurements since 1990. The State of Hawai'i Greenhouse Gas Inventory, published annually, will ultimately determine state emissions. Data published by the EPA closely coincide with the data in the state inventory published by the Department of Health. EPA data is used above to show emissions through time. State data should be used for sector-specific information - EPA data is appropriate to show trends through time.

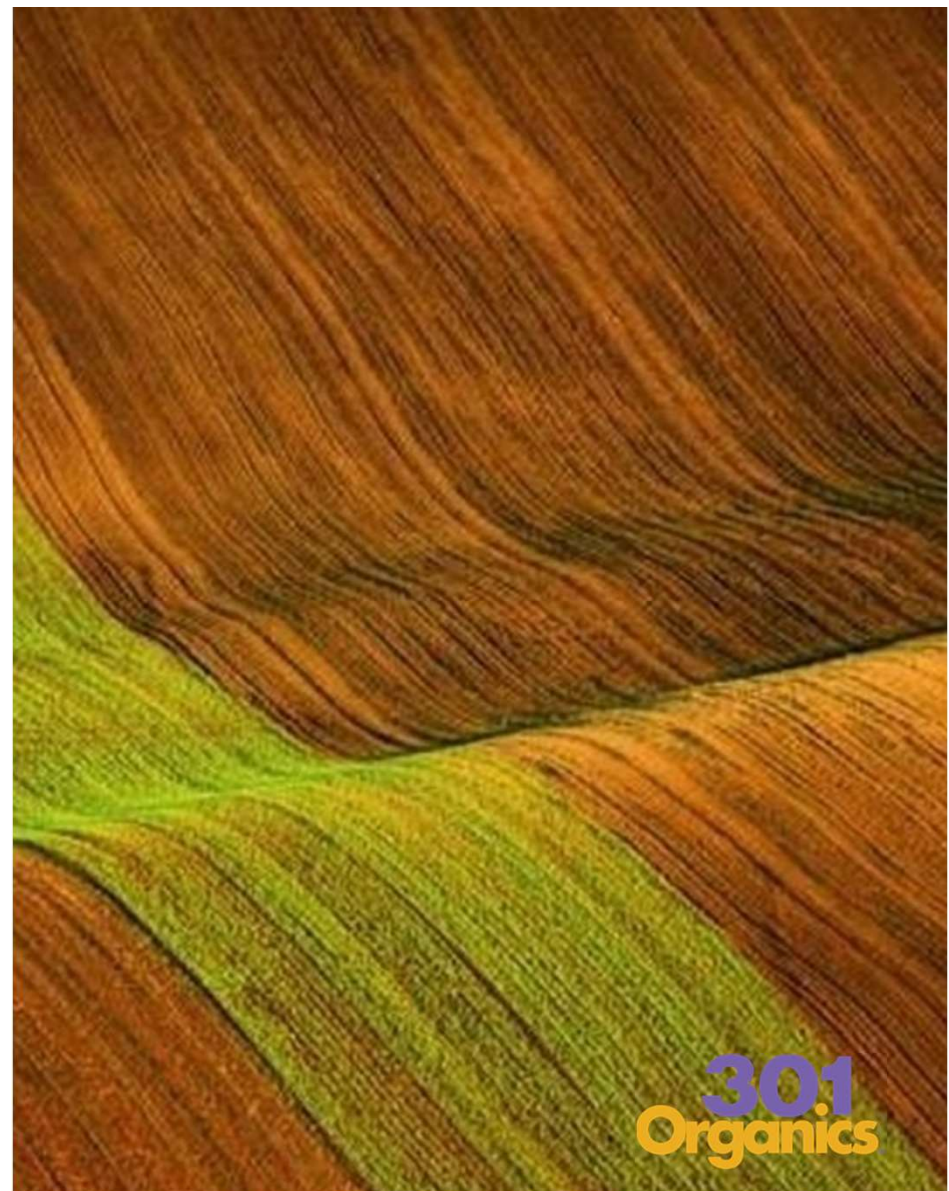
LEGISLATIVE PARALLELS IN HAWAI'I

- [Act 238](#) (2022) – HI State Energy Office decarbonization recommendations
- HRS Ch. [225P](#) – HI Climate Change Mitigation and Adaption Initiative, incl. [§225P-5](#), setting carbon neutrality by 2045 target
- HRS Ch. [342G](#) – Integrated Solid Waste Management and policies promoting local composting

Organic waste diversion bills presently pending...

- [HB 256](#) – Relating To Organic Waste (landfill diversion goals).
- [HB 895](#) – Relating to Organic Waste Diversion (landfill diversion goals).
- [HB 1326](#) – Relating to the Environment (HI Zero Waste Initiative).
- [HB 2740](#) - Relating to the Environment (HI Zero Waste Initiative, outlines detrimental environmental impacts of landfill and incineration methods currently in use).
- [SB 514](#) – Relating to Composting (promoting local composting).
- [SB 1262](#) – Relating to Organic Waste (landfill diversion goals).

IMPLEMENTATION
STRATEGIES



301
Organics



301
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STRATEGIES

KISS
-the-
GROUND
FOR REGENERATION

WORLD[®]
CENTRIC
FOR A BETTER WORLD



THE STORY OF
STUFF
PROJECT **Compostable**



RESOIL SACRAMENTO

food₂soil



Zero Foodprint



301
Organics™

STRATEGIES

TYPES OF COMPOSTING OPERATIONS



1 **BACKYARD**
composting by homeowners for themselves



2 **NEIGHBORHOOD**
multiple neighbors compost at one site by either the homeowner or private composting service provider

3 **COMMUNITY**
centrally located site sourcing organic materials from the area and dropped off by residents; non-profit operated



4 **COMMERCIAL**
local and privately operated sourcing organic materials from the area utilizing advanced composting, food waste processing technologies



6 **INDUSTRIAL/REGIONAL**
large scale operation processing in excess of 1 ton/day and upwards of 300 tons/day on large tracts of land zoned agricultural or industrial

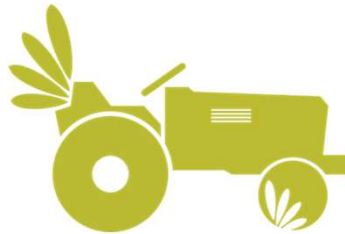


5 **INSTITUTIONAL**
small on-site operation managed by the institution themselves sourcing organic material from their own operations and using the finished compost on their own grounds





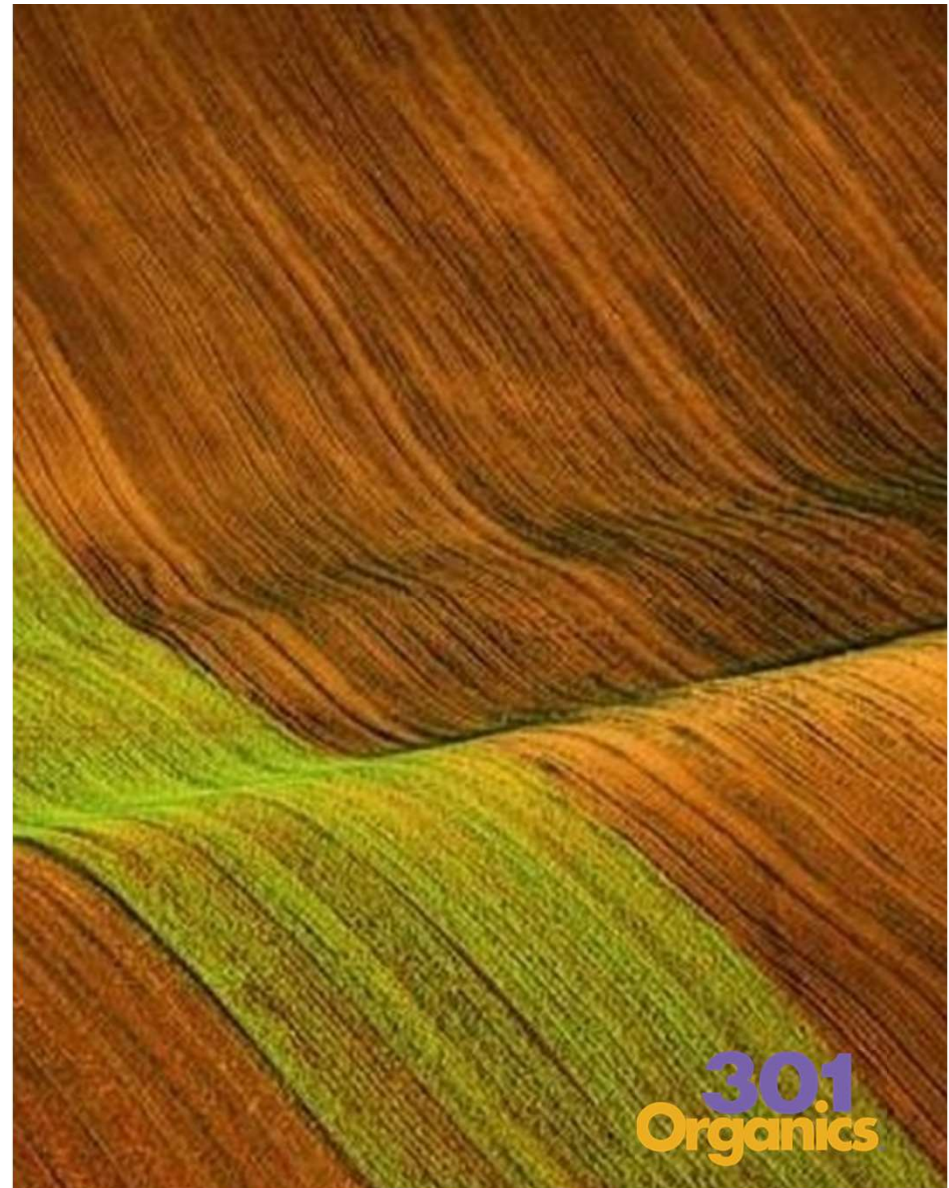
STRATEGIES



Zero Foodprint



IMPLEMENTATION
CHALLENGES



CA CHALLENGES

- Local jurisdictions autonomous
- Regional model/business as usual
- Hauler focused
- Unfamiliar/misunderstood industry
- Technology unknown
- Delayed local funding



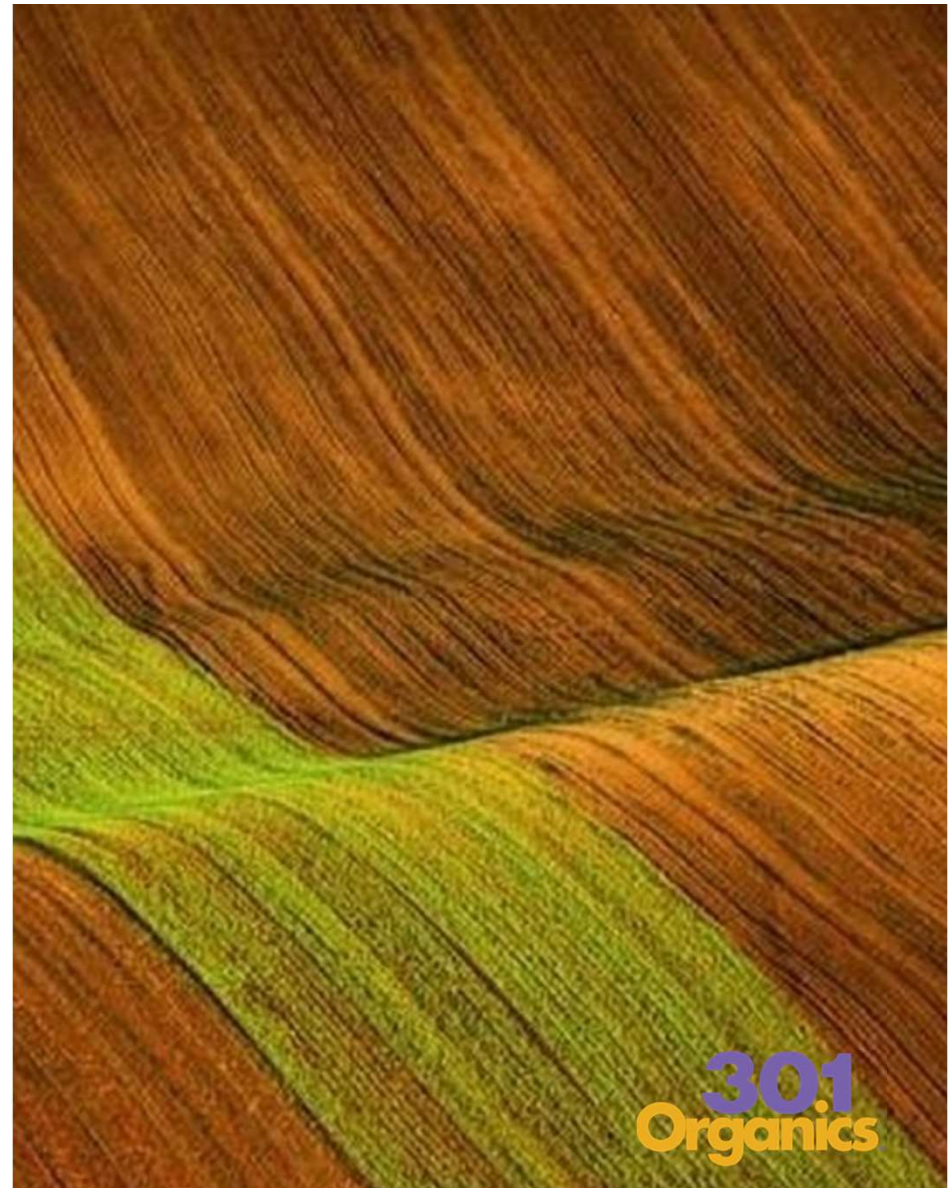


HAWAI'I CHALLENGES

- Limited landfill capacity
- Plastic pollution from waste generation
- Food insecurity
- 90% food imported
- Plastic packaging
- Degraded soils
- Minimal to zero food waste facilities
- Waste-to-Energy dependent
 - Bioconversion practice does not include composting of food waste; only greenwast

UNSUSTAINABLE WASTE MANAGEMENT

IMPLEMENTATION
CASE STUDIES





INSTITUTIONAL



Empowering communities by creating spaces for local compost access.

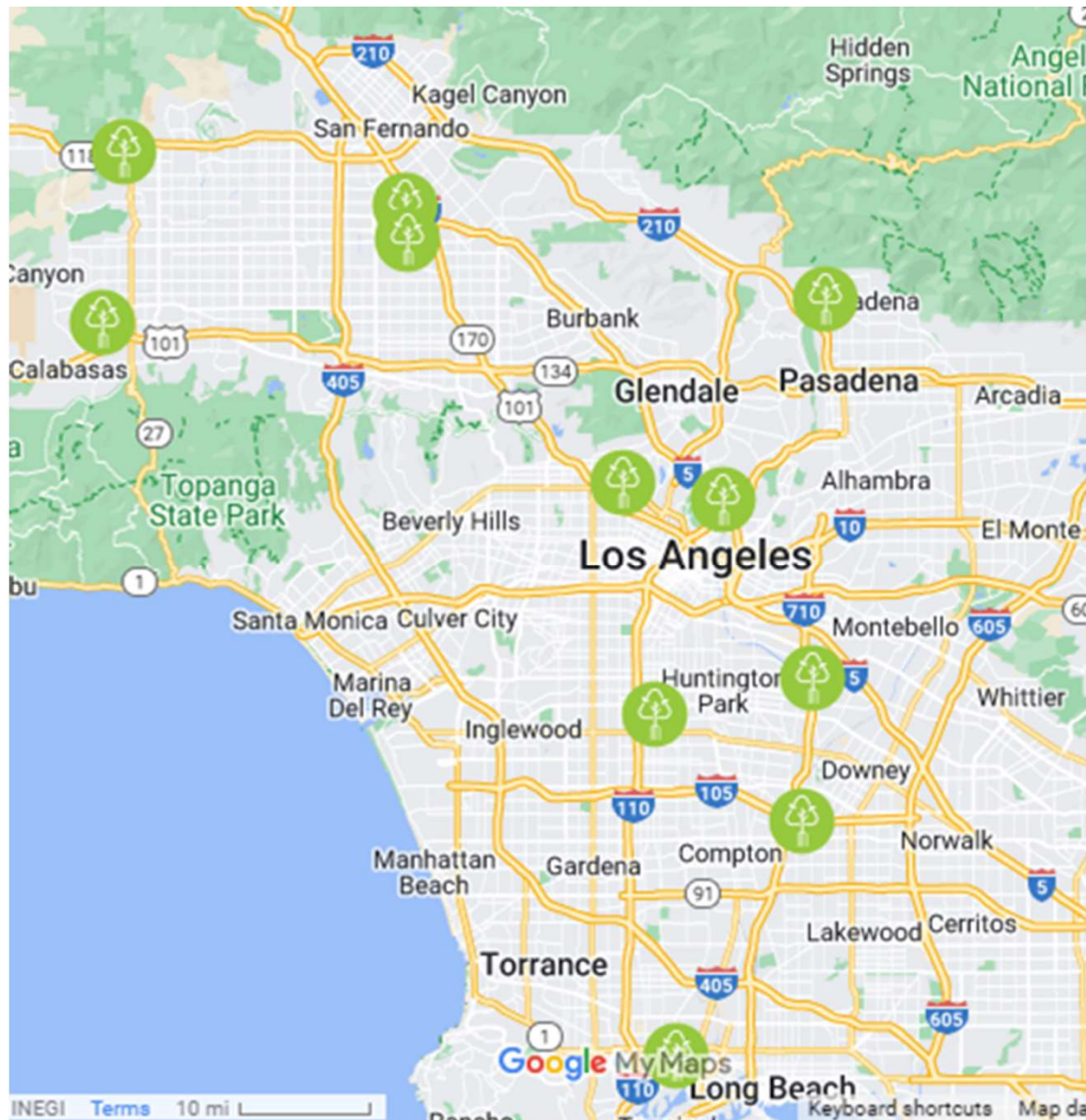
LA COMPOST
COMMUNITY COMPOSTING



ROSE BOWL STADIUM INSTITUTIONAL

- 301 Organics contracting consultant
- Protection of green assets
- Stakeholder assessment of priorities
- Feasibility study/Alternatives analysis
- Implementation/System trials
- Compost trials





- Social enterprise/Volunteer based
- Collection on bikes
- Local composting sites
- Non-Profit status 2013
- 10 years
- 38 hub locations
- Managing \$1.35 million in community composting grant



UNIVERSITY OF HAWAI'I INSTITUTIONAL

- Review of Anaerobic Digestion
- Stakeholder assessment of priorities
- Feasibility study/Alternative analysis
- Technology system review
 - Composters
 - Food waste processors
- Hybrid Solution

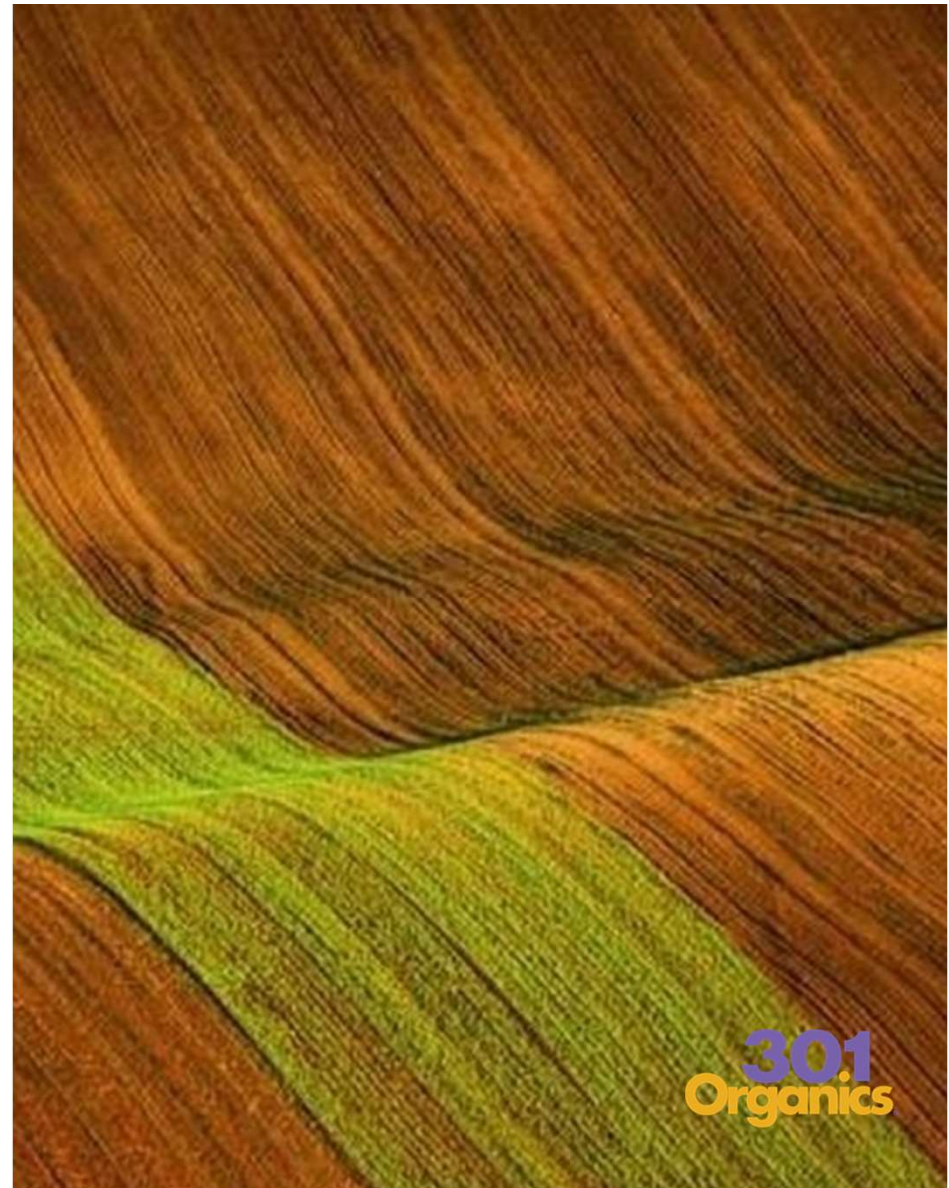


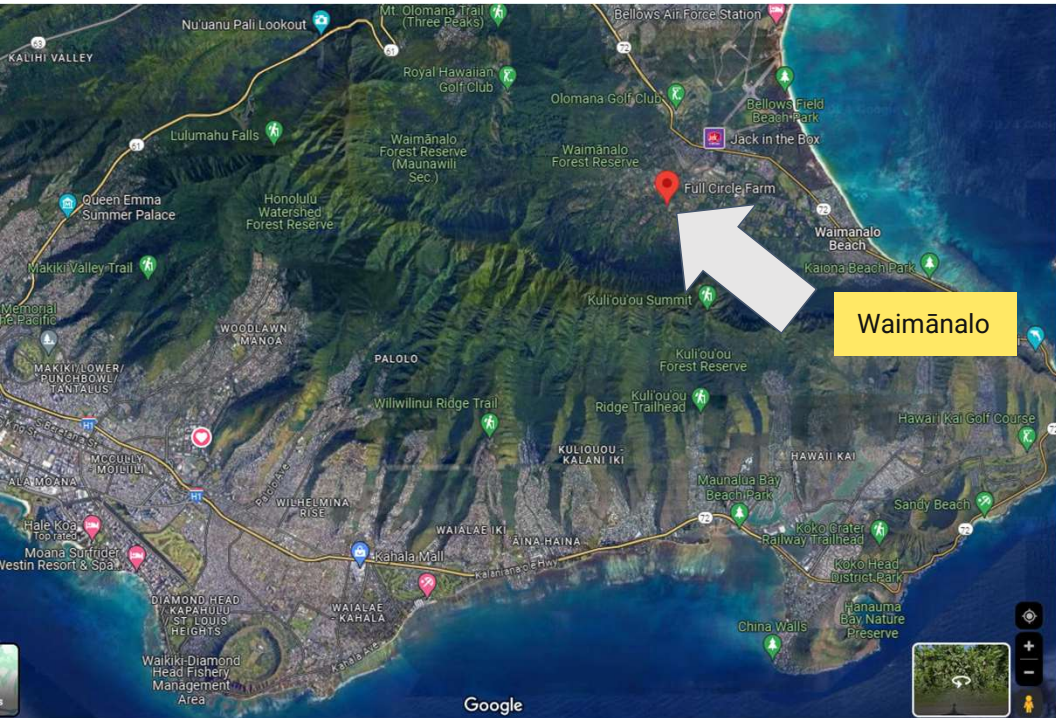
INSTITUTIONAL AND COMMUNITY COMPOSTING BENEFITS

- Reduced costs: irrigation, hauling, landscape inputs
- Reduced Greenhouse Gas emissions
- Reduced plastic pollution
- Reduced toxic exposure of sensitive land users
- Improved public relations/community engagement



OPPORTUNITIES





HAWAI'I IS ON TRACK

- Government assistance programs for farmers - 50% production goal
- **Senate Bill 3004** – compost procurement (effective 2050?)
- **Senate Bill 964** - exemptions for artisan composting sites; soil health (effective 2050?)
- **Aloha+ Challenge** - by 2030
- **Full Circle Solutions** – composting on-farm
- **Hawaiian Earth Recycling** on Oahu (140K tons/year)





OPPORTUNITIES

- Conduct a Statewide inventory of ALL organics generated (recipe analysis)
- Complete a Statewide inventory of available/usable space, including agricultural, industrial and at the institutional level (spatial analysis)
- Inventory and analyze potential sites for food production Statewide (use analysis)
- Co-locate composting operations with food production sites (agricultural and industrial zoned areas) with 50% goal in mind

THANK YOU!

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Ian Michael Forrest, Esq., is the Founder & Managing Partner of Forrest Environmental Law.

Ian leverages over 25 years of experience navigating diverse and unique regulatory challenges in support of a wide range of development projects and matters, including the development of real estate, renewable energy and infrastructure, regulatory compliance, as well as administrative and environmental litigation.



REFERENCES & ADDITIONAL MATERIALS

1. [SB 1383](#) (Lara, 2016) - Short-lived climate pollutants: methane emissions: dairy and livestock: organic waste: landfills.
2. CalRecycle, [SB 1383 Compliance Process](#) guidance document.
3. [AB 32](#) (Nunez, 2006) – Air Pollution: greenhouse gases: California Global Warming Solutions Act of 2006.
4. [SB 32](#) (Pavley, 2016) – California Global Warming Solutions Act of 2006: emissions limit.
5. [EO B-55-18](#) – CA Executive Order To Achieve Carbon Neutrality.
6. [AB 1279](#) (2022, Muratsuchi) - the California Climate Crisis Act.
7. [AB 939](#) (Sher, 1989) - California Integrated Waste Management Act.
8. [SB 2016](#) (Wiggins, 2008) - Diversion: compliance: per capita disposal rate.
9. [CA Dept of Resources Recycling & Recovery](#) (CalRecycle) – [SLCP Reduction Strategy webpage](#).
10. [California Air Resources Board](#) (ARB)
 - [Short-Lived Climate Pollutants webpage](#).
 - [Low Carbon Fuel Standard](#) (LCFS) webpage.
11. [California Dep't of Food and Agriculture](#) (CDFA)
 - [Food Recovery Resources webpage](#).
12. [California Public Utilities Commission](#) (CPUC)
 - [Renewable Gas webpage](#).
 - [CPUC Renewable Portfolio Standard](#) (RPS) webpage (private utilities, electric service providers and community choice aggregators)
13. [State Energy Resources Conservation and Development Commission](#) (CEC)
 - [Integrated Energy Policy Report](#) (IEPR)
 - [CEC Renewable Portfolio Standard](#) (RPS) webpage (certification of renewable energy resources and procurement enforcement of public utilities)
14. CalRecycle – [Short-Lived Climate Pollutants \(SLCP\): Organic Waste Reductions, Final Regulation Text](#) (Nov. 2020)
15. CalRecycle's [Analysis of the Progress Toward the SB 1383 Waste Reduction Goals \(DRRR-2020-1693\)](#) (08/2020)
16. [SB 619](#) (Laird, 2021) - Organic waste: reduction regulations: local jurisdiction compliance.
17. [Aloha+ Challenge](#) website
18. HI [Act 238](#) (2022) – Relating to Climate Mitigation.
19. HRS Ch. [225P](#) – HI Climate Change Mitigation and Adaption Initiative,
20. HRS Ch. [342G](#) – Integrated Solid Waste Management
21. Hawai'i State Energy Office, [Decarbonization website](#).
22. CA. Air Resources Board, [Current California GHG Emission Inventory Data](#).



[Christine Lenches-Hinkel](#), Founder and Principal Consultant of [301 Organics](#)

Christine has over 20 years of experience in CEQA/NEPA planning, organics recovery, program design, and composting. She has provided regulatory compliance support under AB 1826 and SB 1383 for institutions such as the renowned Rose Bowl Stadium, universities and schools. She has also provided sustainability planning support to the Pasadena Unified School District. Christine is considered a visionary and trailblazer in California with respect to promoting the development of local composting infrastructure and is credited with the implementation of the first institutional composting operation of its kind in Los Angeles County.



REFERENCES & ADDITIONAL MATERIALS

[Full Circle Solutions](#) composting video
[Aloha+ Challenge](#)
[UN Sustainable Development Goals](#)
[LA Compost](#)