

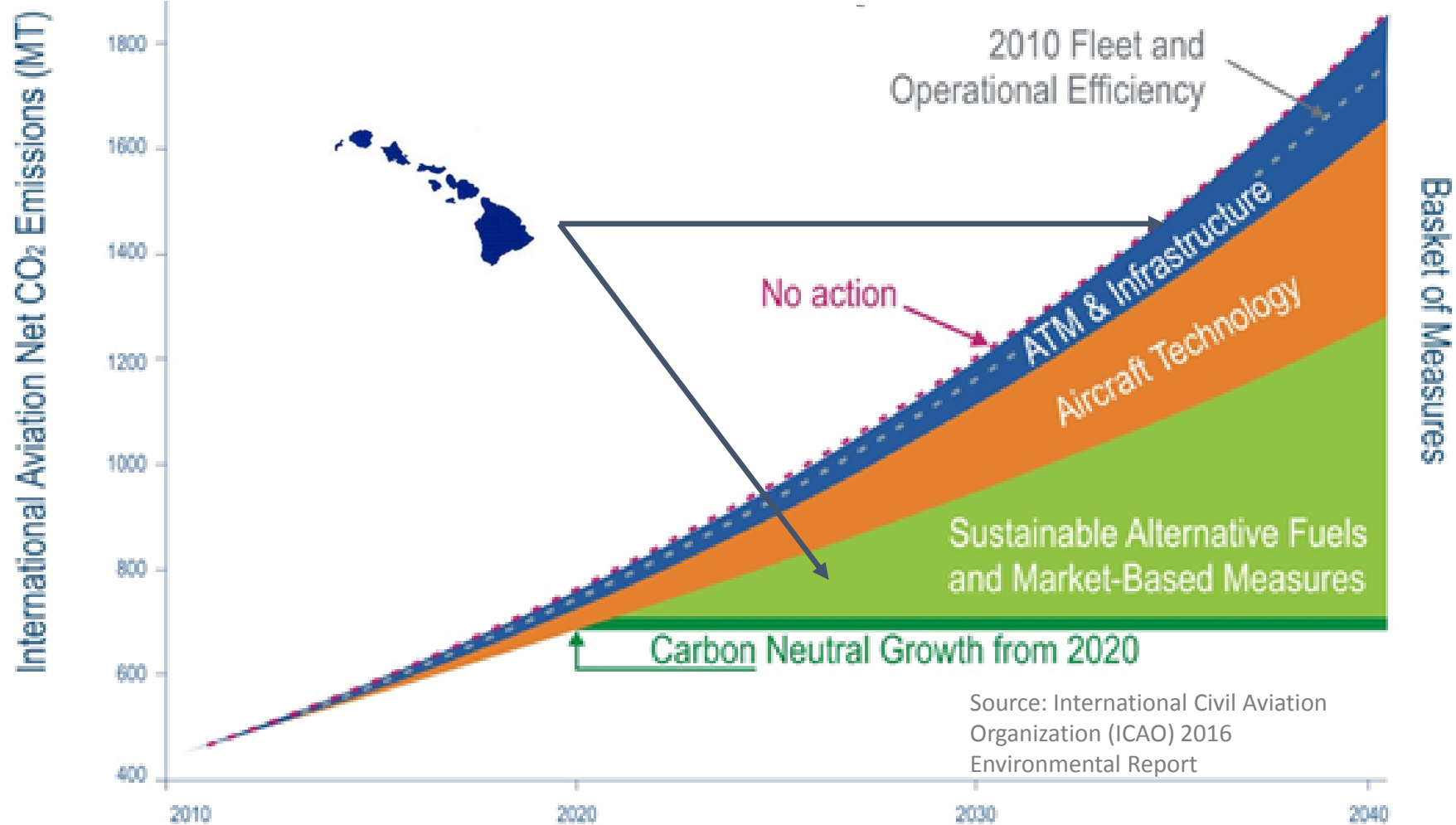
# Hawaii and Climate Change: Action Items for the Aviation sector



**Joelle Simonpietri**  
**Simonpietri Enterprises LLC**  
**Joelle@simonpietri.com**  
**27 Nov, 2018**



# ICAO Contribution of Measures for Reducing International Aviation Net CO<sub>2</sub> Emissions



## U.S. Implementation of ICAO/CORSIA: FAA's ASCENT

A U.S. Federal Aviation Administration Center of Excellence focused on:

- Emissions reduction
- Noise reduction
- Renewable fuels

Through these lines of effort:

- Air Traffic Control & Airport Operational Improvement
- Aircraft Design and Fuel Efficiency
- Sustainable Alternative Jet Fuels



FAA CENTER OF EXCELLENCE FOR ALTERNATIVE JET FUELS & ENVIRONMENT



# ASCENT Industry Advisory Committee



FAA CENTER OF EXCELLENCE FOR ALTERNATIVE JET FUELS & ENVIRONMENT



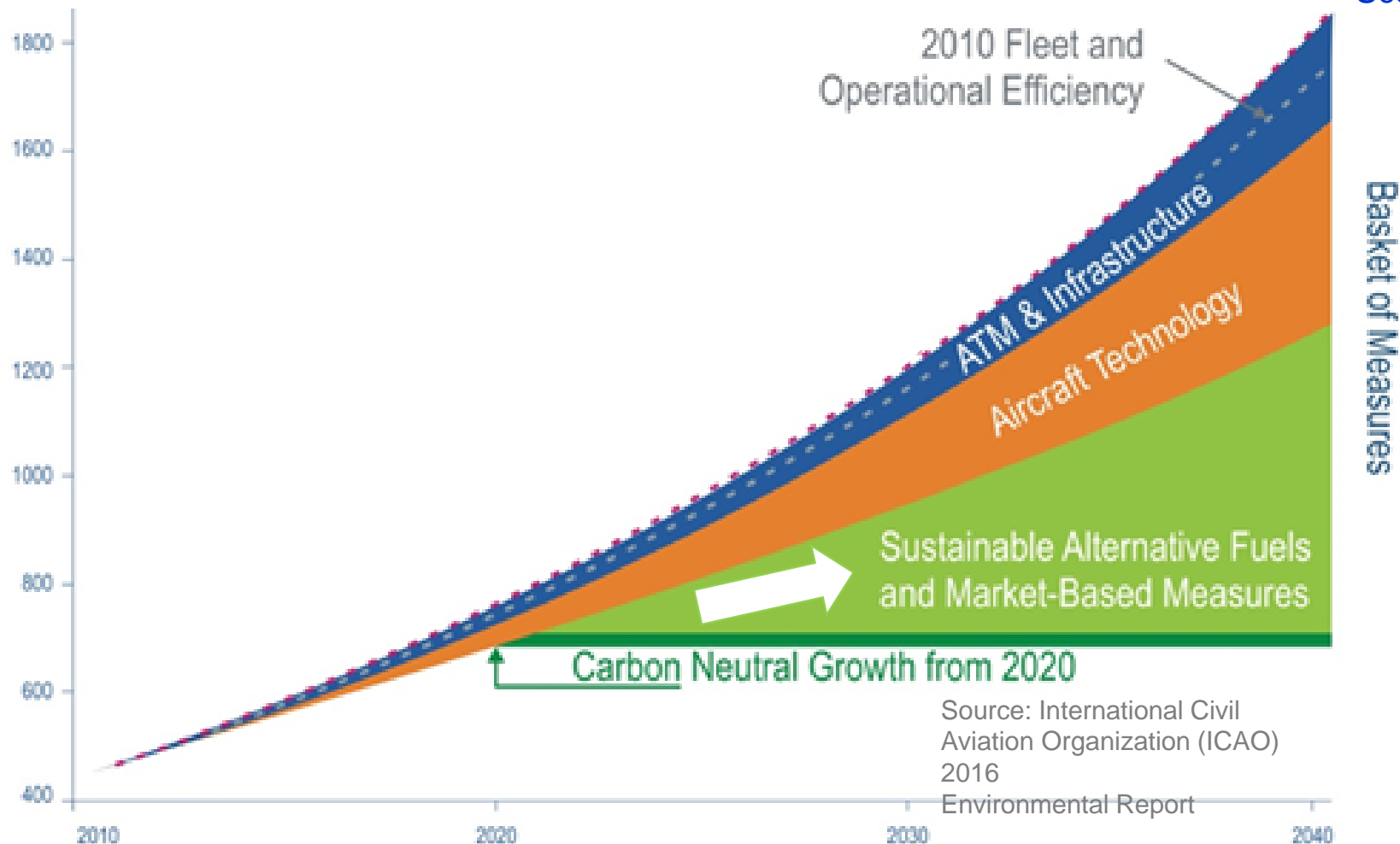


# ICAO

## Contribution of Measures for Reducing International Aviation Net CO<sub>2</sub> Emissions

No Action Scenario

International Aviation Net CO<sub>2</sub> Emissions (MT)



# U.S. Sustainable Alternative Jet Fuel Commercial Purchase Agreements

	+	    	= 5 M gpy from 2016 = 3 yr agreement 30/70 blend = 3 yr agreement enabling LAX flts
	+	 	= 375M usg = 90-180 M gpy over 10 yrs
	+	 	= 3 M gpy = 3 M gpy
 	+		= 48 A350 deliveries 10% blend
	+		= 10M gpy, 10 yrs
	+		= Up to 40M gal over 5 yrs (MOU)
	+	    	= (Bioport on demand)

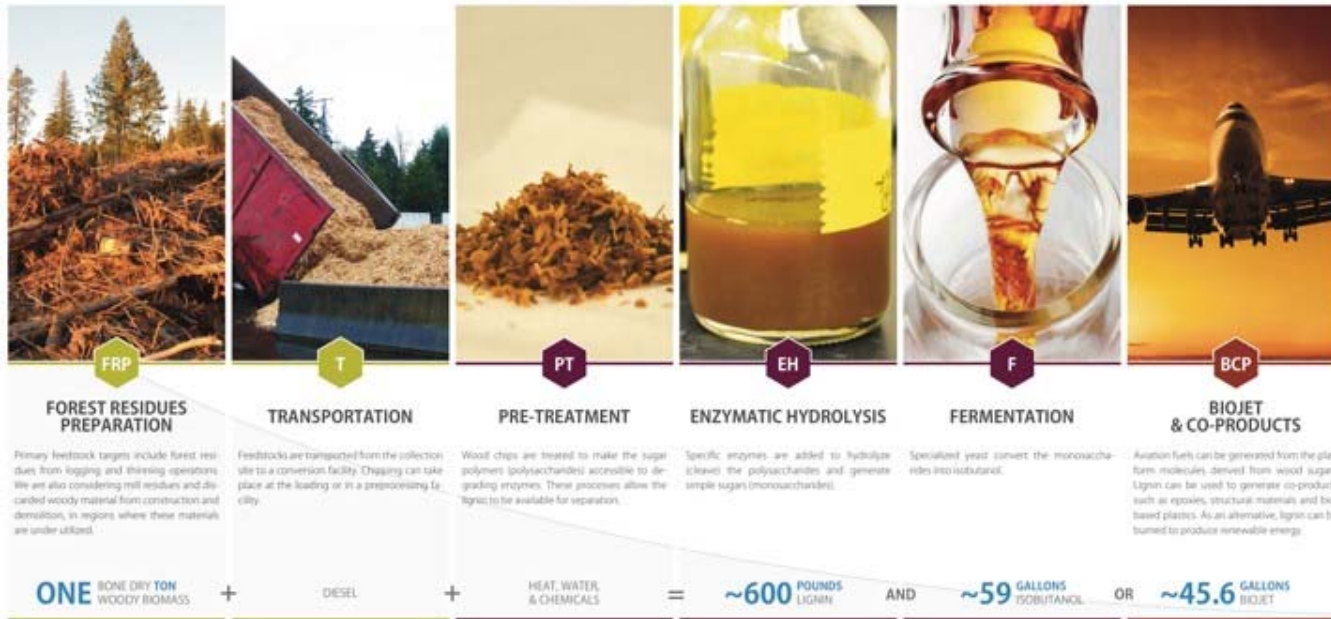
Legend: gpy = Gallons Per Year

usg = U.S. Gallons LAX = Los Angeles International Airport



# NARA: Feedstock to Fuels

USDA NIFA  
April 20, 2017 in Washington, DC



Nov 4, 2016 Seattle to Washington DC  
World's First Cellulosic biofuel Flight

Live Feed on ICAO: Over 100,000 biojet Flights in 2017



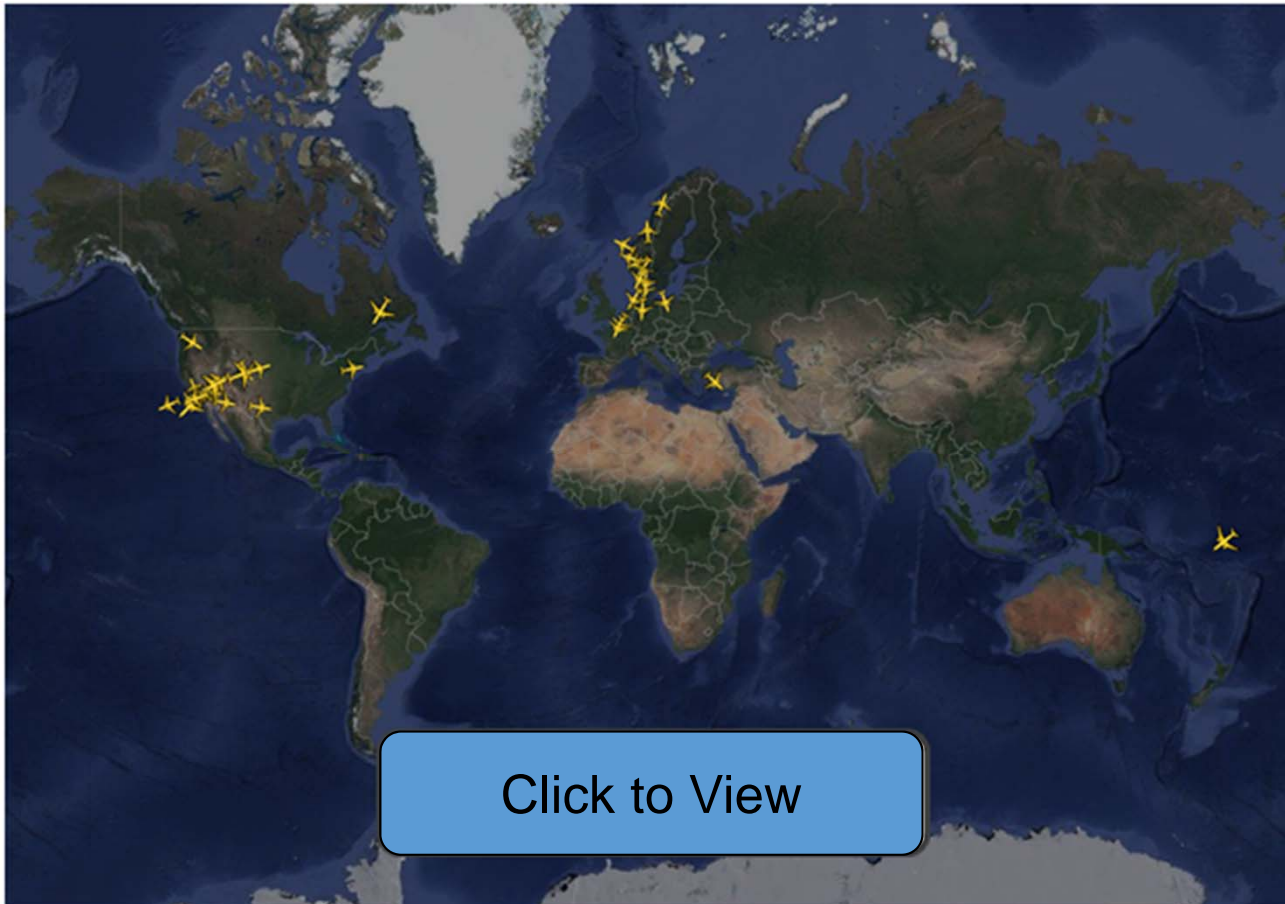
Completed Year 5 of 5



FAA CENTER OF EXCELLENCE FOR ALTERNATIVE JET FUELS & ENVIRONMENT



# ICAO Live Feed: Global Biojet Flight Tracker

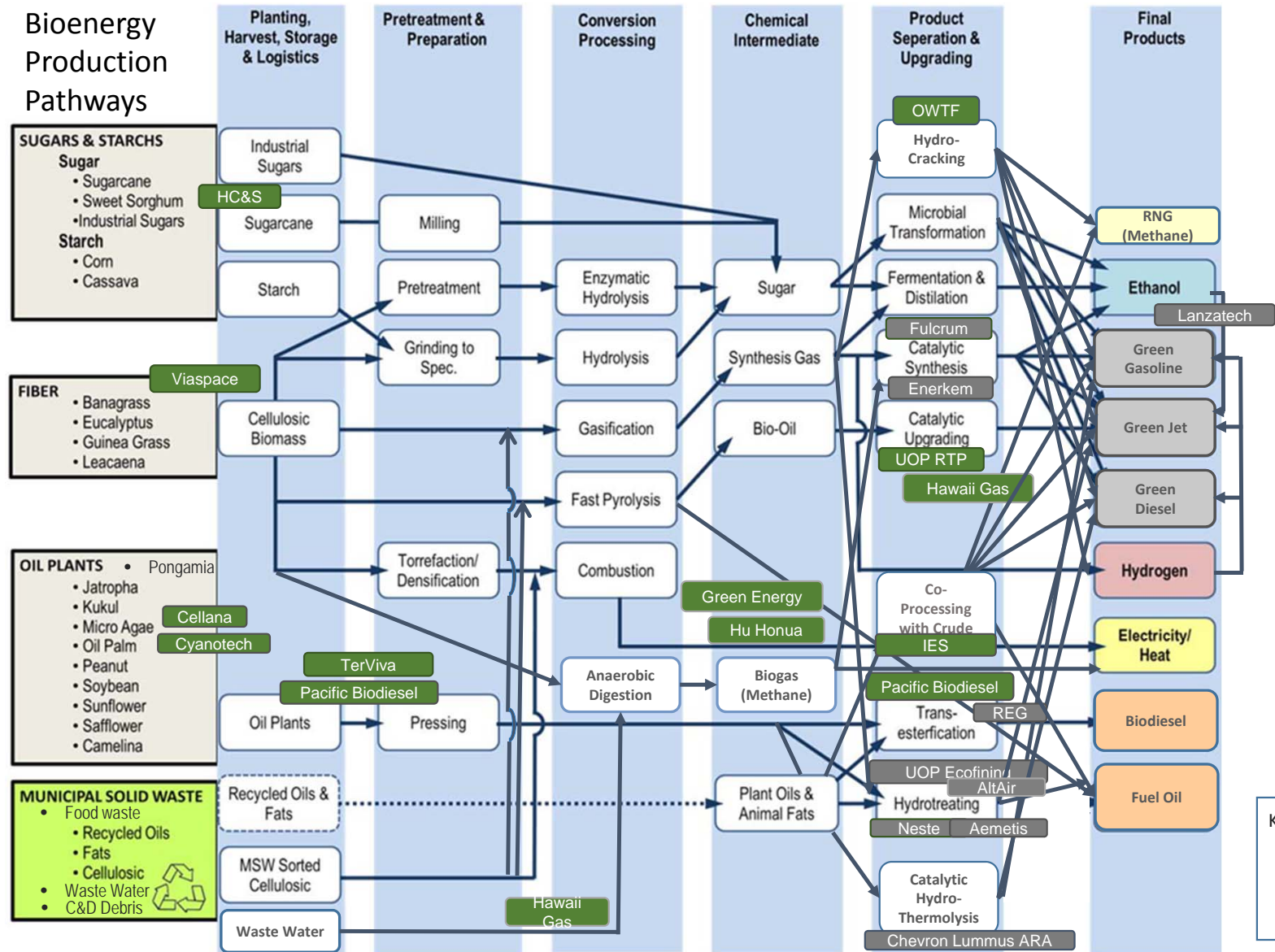




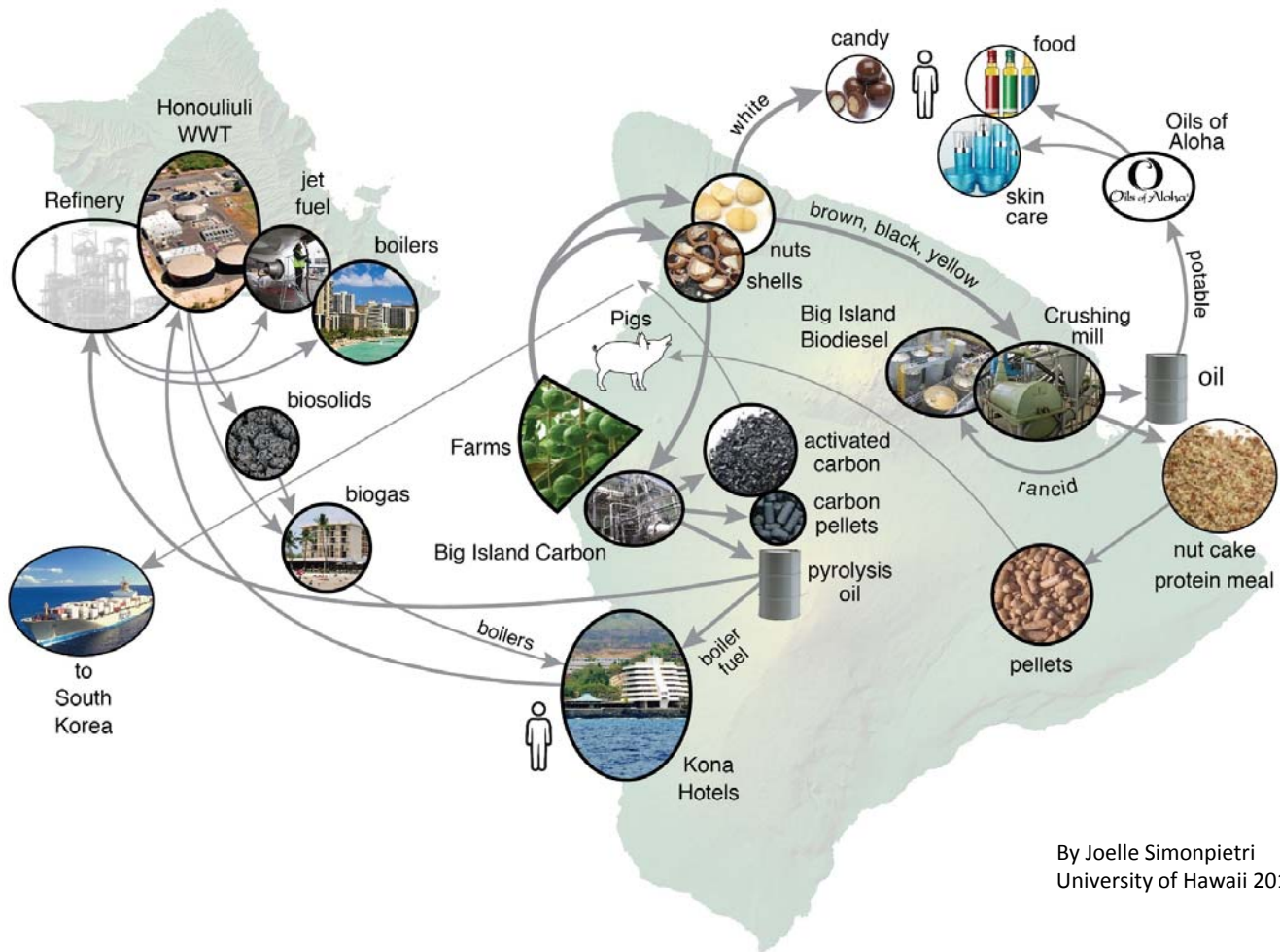


In Hawai'i:

## Bioenergy Production Pathways



# Big Picture: Integrated Food and Energy System



By Joelle Simonpietri  
University of Hawaii 2017

# BioEconomy Hawai'i 2018



**HAWAII ENERGY  
POLICY FORUM**  
University of Hawai'i at Mānoa  
College of Social Sciences



**Par Hawaii**





# Oahu Island Examples





# Hawai'i Island Examples







# The U.S. Federal Renewable Fuel Standard

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Enterprises

Renewable Fuel Standard Program

Need help with this website?

- Learn What Information You'll Find in this Website and Who To Contact

CONTACT US SHARE

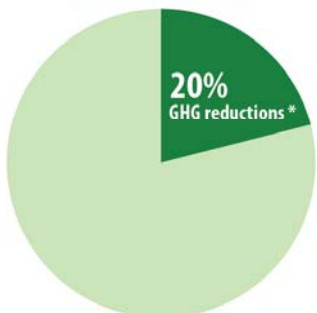
EnviroFlash  
Your Environmental News Push

A messaging system for updates and changes.

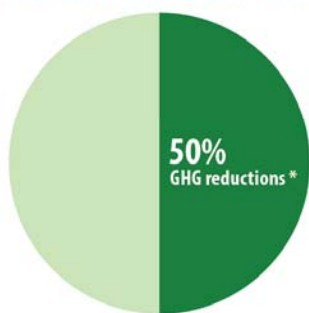
## Lifecycle Greenhouse Gas (GHG) Emissions

GHG emissions must take into account direct and significant indirect emissions, including land use change.

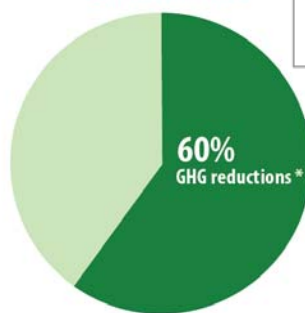
### Renewable Fuels



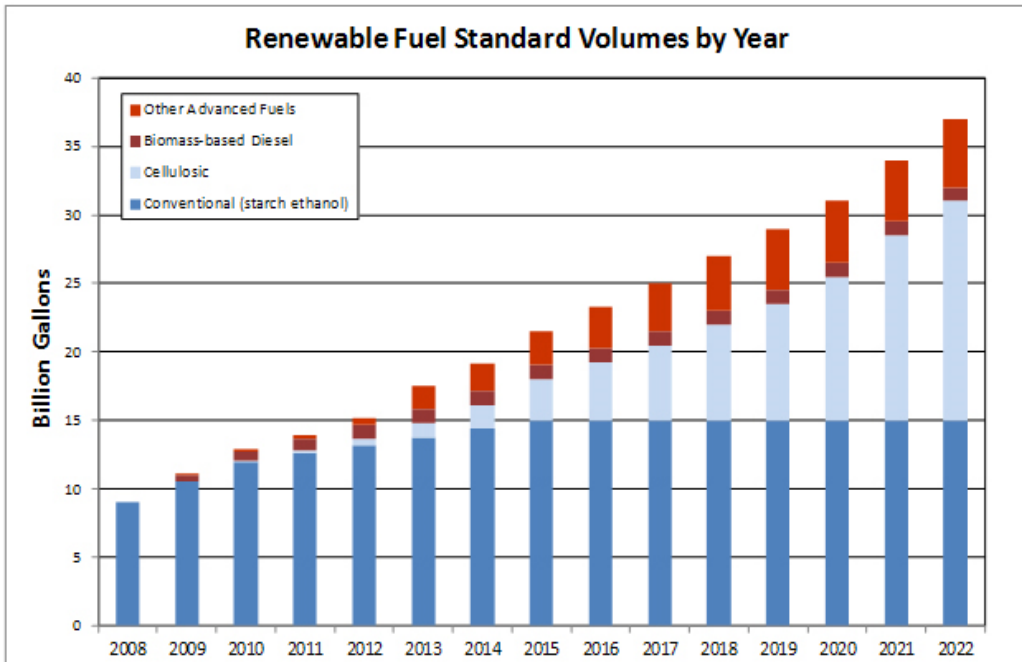
### Advanced & Biodiesel Fuels



### Cellulosic Fuels



\* compared to a 2005 petroleum baseline



<https://www.epa.gov/renewable-fuel-standard-program>



# 2017 Session: Resolution Urging Hawaii Green Fuels Initiative to Coincide With Local Food Production

THE SENATE  
TWENTY-NINTH LEGISLATURE, 2017  
STATE OF HAWAII

S.C.R. NO. 121

MAR 10 2017

## SENATE CONCURRENT RESOLUTION

URGING THE DEVELOPMENT OF A HAWAII GREEN FUELS INITIATIVE TO  
COINCIDE WITH INCREASED LOCAL FOOD PRODUCTION.

1 WHEREAS, in 2015 Hawaii spent \$5,700,000,000 on imported  
2 oil, the equivalent of seven percent of the gross state product,  
3 with up to seventy percent of each barrel going toward  
4 transportation fuels, jet fuel being the greatest share and  
5 growing; and  
6  
7 WHEREAS, displacing as little as five percent of imported  
8 oil with a proven renewable source of fuel could significantly  
9 improve Hawaii's energy security, sustainability, and economy by  
10 addressing fuel price volatility; and  
11  
12 WHEREAS, the Hawaii Clean Energy Initiative was focused on  
13 achieving the goal of forty percent clean energy by 2030, and  
14 the State has since increased this renewable energy mandate to  
15 one hundred percent by 2045, including clean transportation  
16 energy; and  
17  
18 WHEREAS, Act 202, Regular Session of 2016, created tax  
19 incentives to support the end goal of energy security and  
20 sustainability by providing a renewable fuels production income  
21 tax credit for fuels including methanol, ethanol, or other  
22 alcohols, hydrogen, biodiesel or renewable diesel, other  
23 biofuels, renewable jet fuel, or renewable gasoline; and  
24  
25 WHEREAS, the Governor has a stated goal of doubling local  
26 food production, and increased food production integrated with  
27 renewable fuel production would enhance Hawaii's manufacturing  
28 sector, which is currently comprised of petroleum and gas  
29 refining and represents three percent of the gross state  
30 product, by creating food storage, hub/depositing centers, and  
31 processing plants; and  
32

HOUSE OF REPRESENTATIVES  
TWENTY-NINTH LEGISLATURE, 2017  
STATE OF HAWAII

H.C.R. NO. 118

## HOUSE CONCURRENT RESOLUTION

URGING THE DEVELOPMENT OF A HAWAII GREEN FUELS INITIATIVE TO  
COINCIDE WITH INCREASED LOCAL FOOD PRODUCTION.

1 WHEREAS, in 2015 Hawaii spent \$5,700,000,000 on imported  
2 oil, the equivalent of seven percent of the gross state product,  
3 with up to seventy percent of each barrel going toward  
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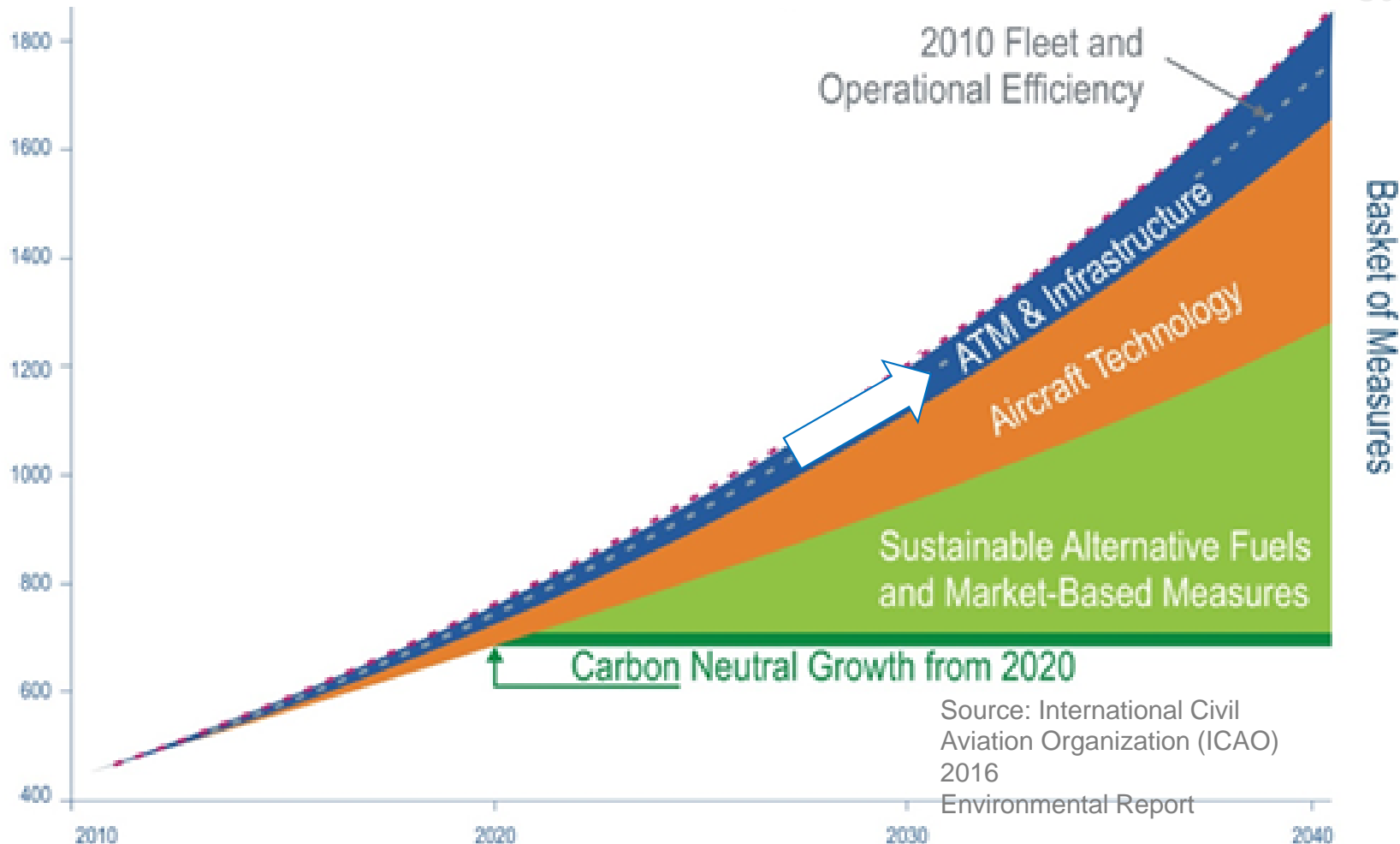


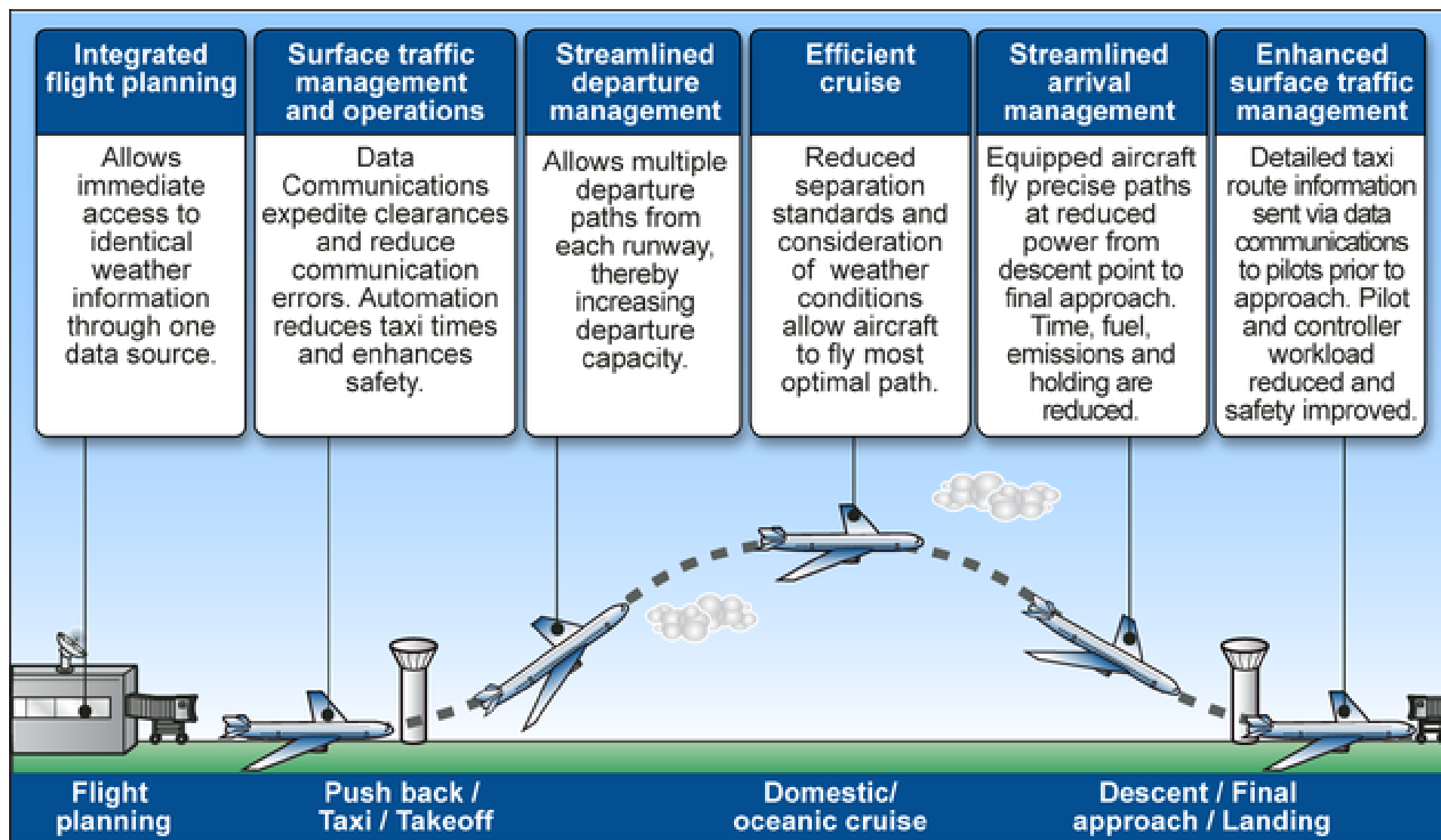
# ICAO

## Contribution of Measures for Reducing International Aviation Net CO<sub>2</sub> Emissions

No Action Scenario

International Aviation Net CO<sub>2</sub> Emissions (MT)





Source: GAO analysis of FAA information. | GAO-17-450



# Airport Infrastructure and Opportunities

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Chicago O'Hare  
Zero Emission Investment  
Ground Support Equipment

PACIFIC  
BUSINESS NEWS

## Report: United Airlines to invest \$200M in Hawaii's airports

Sep 4, 2018, 6:02am HST

United Airlines is planning to invest \$200 million to upgrade Hawaii's airports over the next nine years.

The *Honolulu-Star Advertiser* reported on Tuesday that United will use the money to modernize tools and resources used by company employees at the state's airports, as well as enhancing its customer experience.

United CEO Oscar Munoz met with Gov. David Ige, tourism officials and some of the airline's 1,400 local airline employees during his trip to Hawaii last month, the newspaper added.

Munoz said that he supports the creation of an independent airport authority in Hawaii. The state's airports are currently run and operated by the Hawaii Department of Transportation Airports Division.

Legislative measures to create such an authority stalled for the past two years in the state Legislature.

According to PBN research, the Chicago-based carrier was the second busiest airline serving the Islands in 2017. United transported more than 1.7 million passengers to Hawaii last year.

United Airlines is a unit of United Continental Holdings (NYSE: UAL).

HJ Mai  
Web Editor/Energy Reporter  
*Pacific Business News*



COURTESY UNITED AIRLINES  
United Airlines is planning to invest \$200 million to upgrade Hawaii's airports over the next nine years.

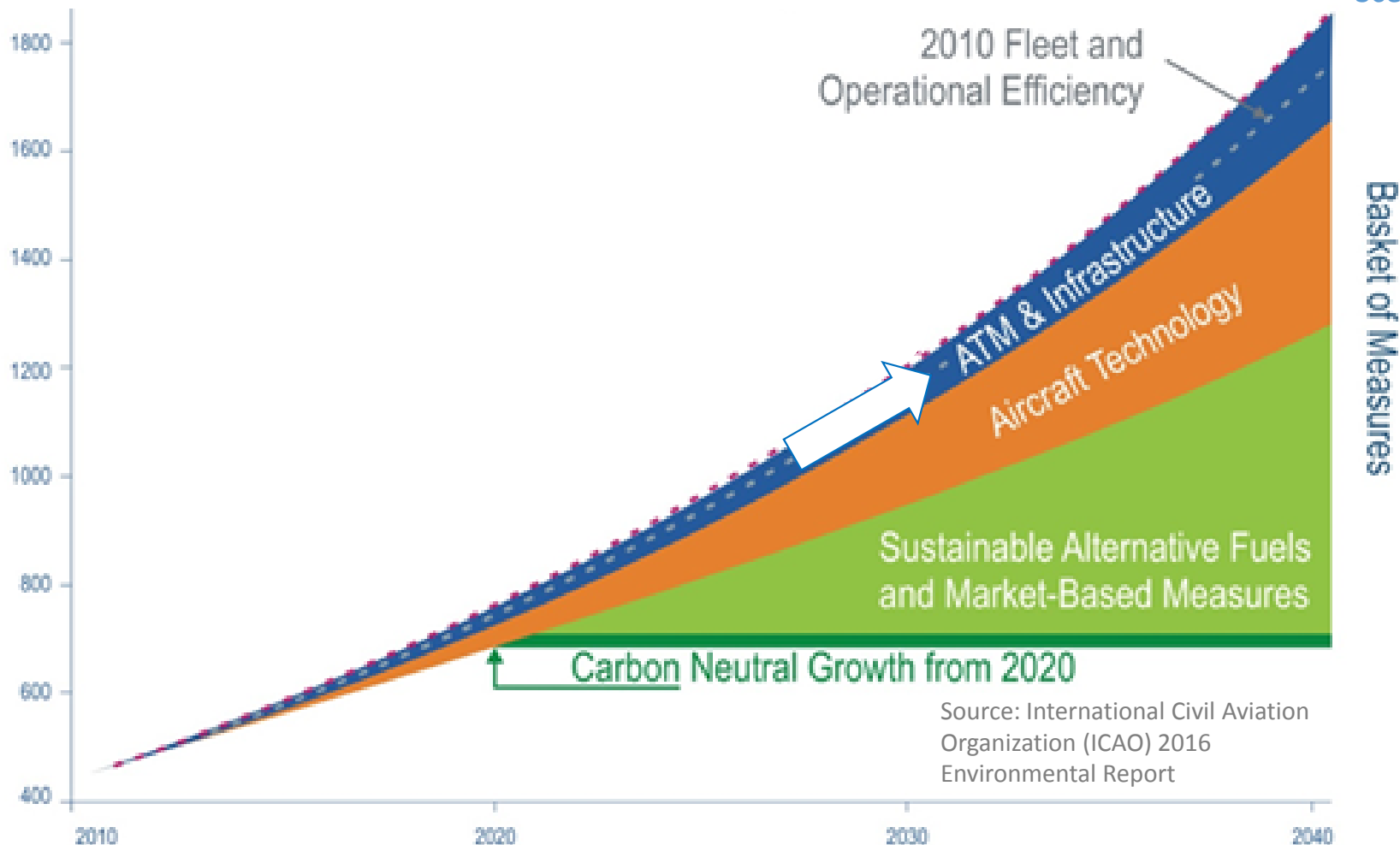


# ICAO

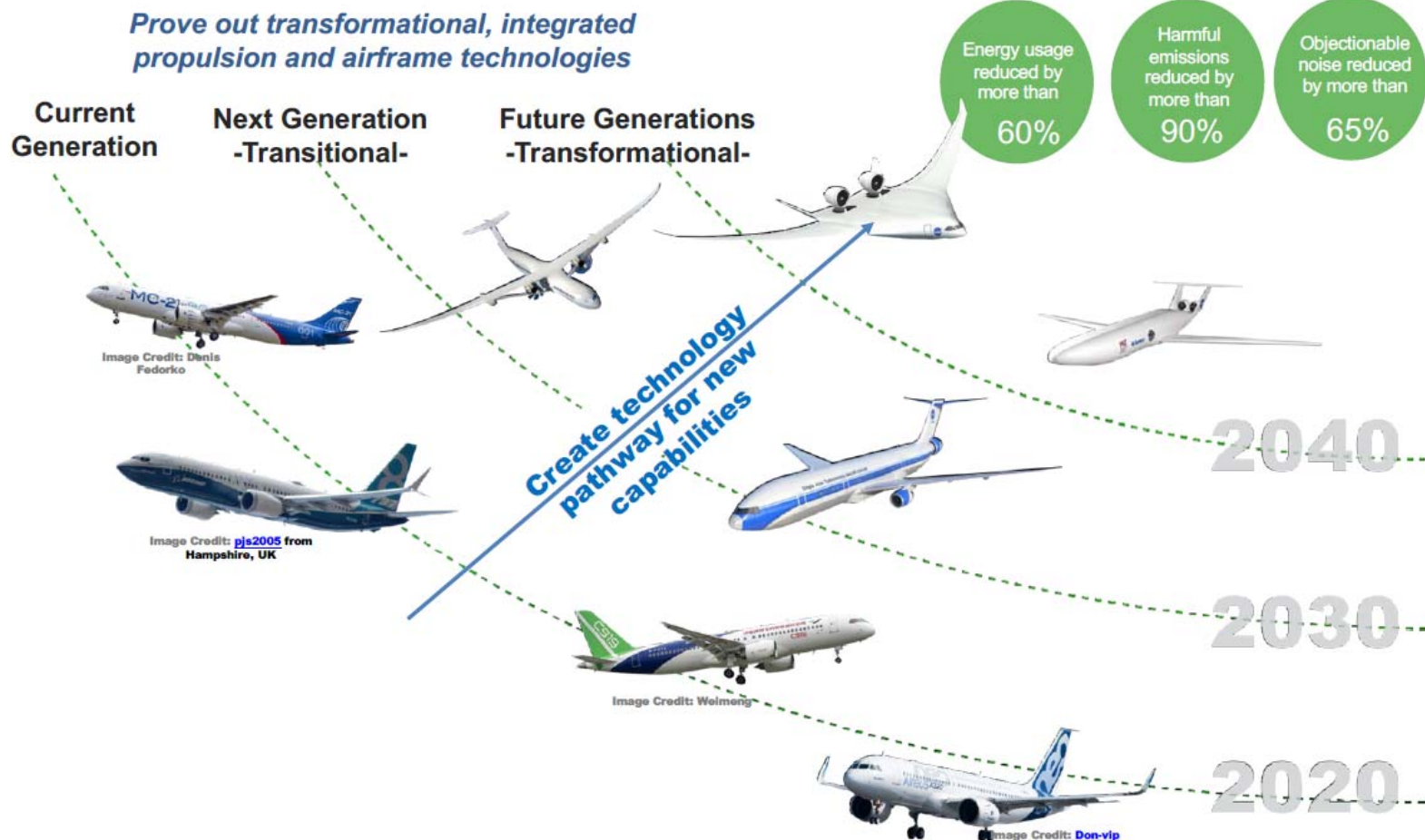
## Contribution of Measures for Reducing International Aviation Net CO<sub>2</sub> Emissions

No Action Scenario

International Aviation Net CO<sub>2</sub> Emissions (MT)



# Subsonic Transport Technology Strategy



# Policy Initiatives: Cost Reduction and Coordination

Simonpietri  
Enterprises

2019

2020

2025

## Near Term:

- Biodiesel blending \$ for airport ground support equipment
- HTDC matching \$ for federal grants and contracts
- Permitting timeline certainty for GHG reduction/sustainable aviation projects

## Medium Term:

- Permitting facilitation for renewable transportation fuel projects
- ASCENT airport taxi/approach/takeoff paths optimization
- Hawai'i-public-private partnership for Sustainable Aviation Tourism system

## Long Term:

- Facilitate petroleum refinery upgrade to make biojet and renewable fuels
- Bioeconomy industry advisory board/ state coordinator across Ag, energy, transport, tourism, environment..



An aerial photograph of a coastal city, likely Honolulu, Hawaii. The city is nestled at the base of a range of dark, forested mountains. The ocean is a deep blue, and a small white ship is visible on the water in the lower right. The sky is filled with large, white, fluffy clouds.

Questions?

Joelle Simonpietri

[Joelle@simonpietri.com](mailto:Joelle@simonpietri.com)

808-341-7984

Photograph by David A. Simonpietri III  
From cockpit of Delta flight 837, Dec 2017