

# 100% Renewable Energy in Hawaii: It's No Longer A Matter of When

March 16 - 18, 2016 | Maui Arts & Cultural Center

*Presented By:*



# MAUI: A CASE STUDY

## IS THIS WHERE WE'RE ALL HEADED?

**Frank De Rego Jr. – Moderator**

Director of Business Development Projects, Maui Economic Development Board

### MAKING THE CASE:

**Jamie Cook**, Renewable Energy Projects Director, Maui Electric

**Jonathan Koehn**, Regional Sustainability Coordinator, City of Boulder

**Marco Mangelsdorf**, Co-founder, Hawaii Island Energy Cooperative

### MAUI PANEL RESPONDS:

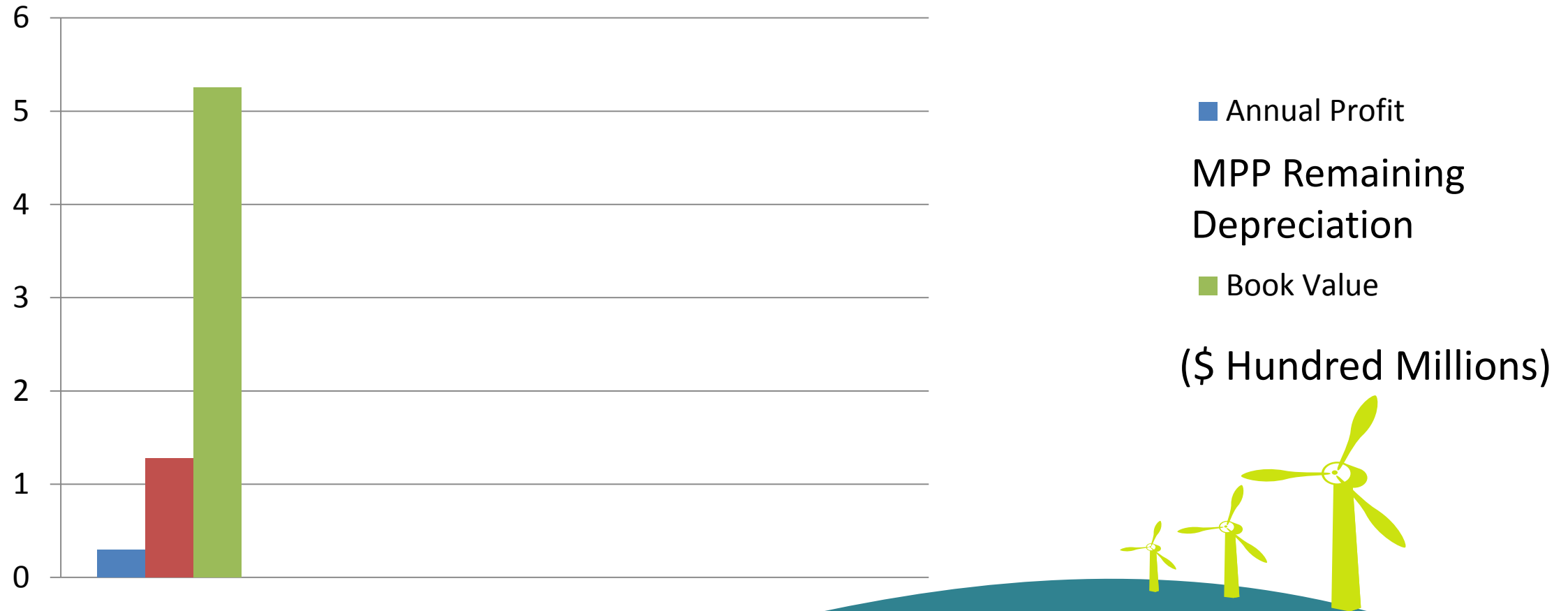
**Jennifer Chirico**, Partner/President, Susty Pacific

**Kelly King**, Vice President, Pacific Biodiesel Technologies, LLC

**Doug McLeod**, DKK Energy Services, LLC



# Maalaea Stranded Cost Issue



# Benefits for the Community

## Cleaner Environment

75% CO2 reduction as compared with fossil fuel  
15,000 tons / 3.8 million gpy of FOG diverted from landfills



## Better Local Economy

More quality jobs  
Stable fuel prices  
\$\$\$ stay in community



## Energy security

## Diversified Agriculture

Farmers and infrastructure for Food *and* Fuel  
Green fields vs. condos









## Utility Renewable Energy Integration

**Jamie Cook, Director Renewable Energy Projects, Maui Electric**

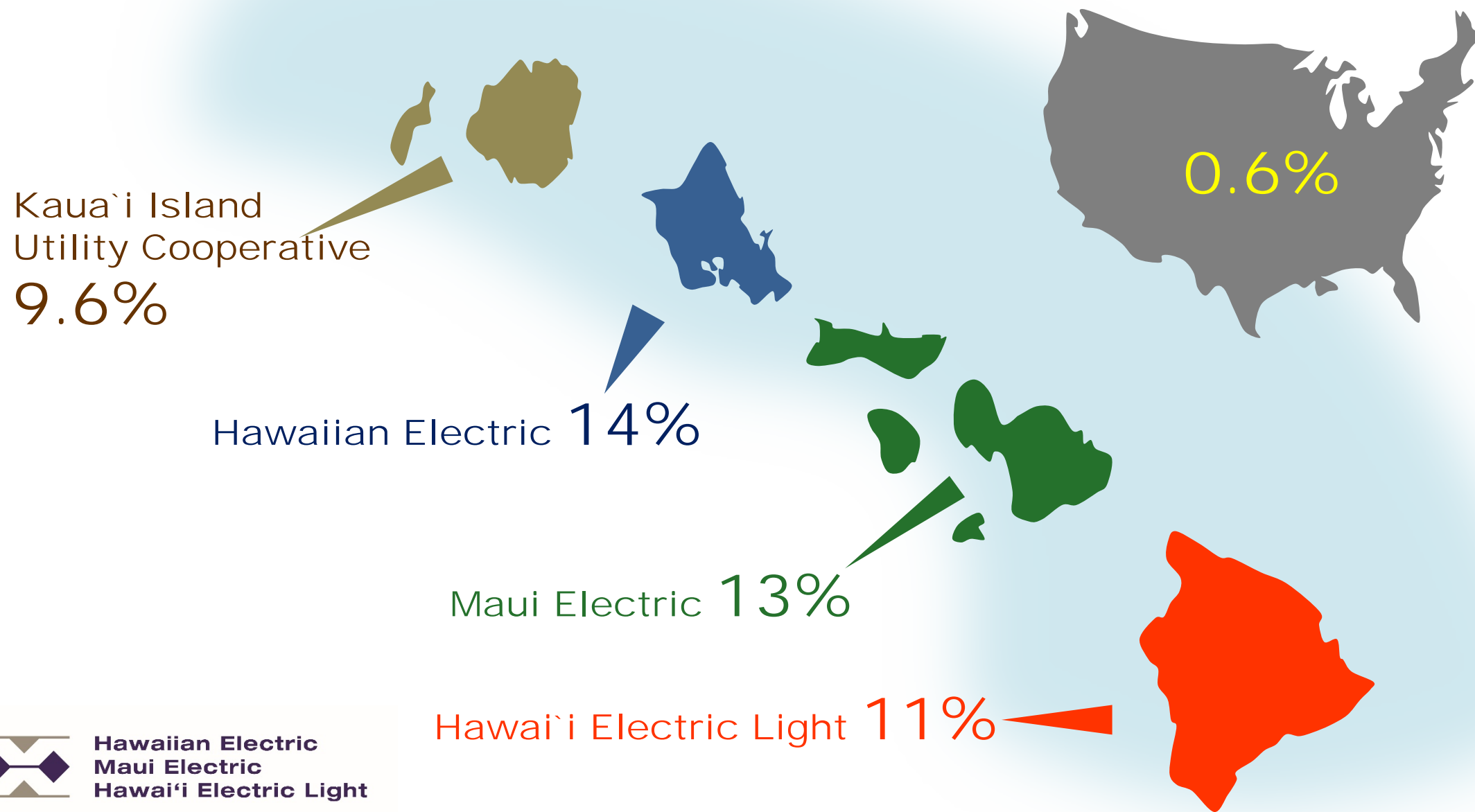
Hawaiian Electric

Maui Electric

Hawai'i Electric Light



# Hawai`i Leads the Nation In Solar







## IS SOLAR RIGHT FOR ME?

Take the first step towards understanding your solar savings. This tool was designed to help you estimate your solar savings potential with a residential rooftop photovoltaic (PV) system.

By using this tool, you are agreeing to our [Terms of Use](#).

START MY ESTIMATE

## HOW IT WORKS

### REVIEW PERSONAL ESTIMATE

Find out your estimated solar savings based on your electricity use, current electricity rates and available tax credits and rebates using default rooftop characteristics.

### COMPARE OPTIONS

View options side-by-side to understand how different scenarios may impact your wallet in the near-term and long-term.

### MAKE AN INFORMED DECISION

If solar seems like a good investment for you, please be sure to review existing programs available and consult with a solar contractor.

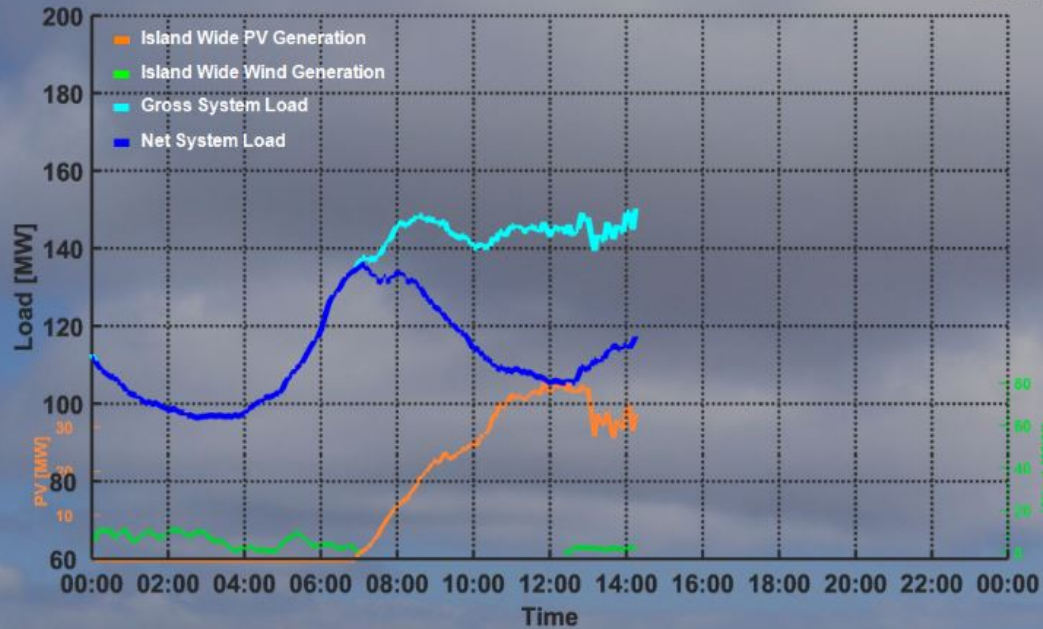




## Renewable Watch - Maui

Mar 15, 2016

2:54 PM



### Current Renewable Power Production

Island Wide PV [MW]

32.9

Island Wide Wind [MW]

2.5

## Information

Renewable Watch shows at a glance the levels of solar and wind power generated on Maui and how that energy varies throughout the day.

Below Are Descriptions of What is Currently Displayed:

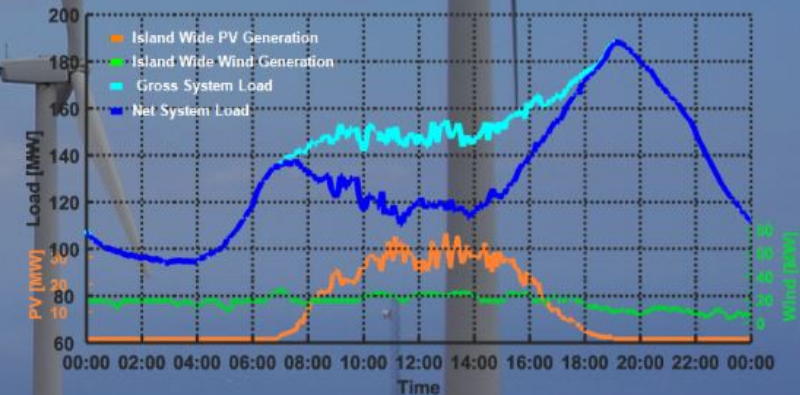
Net System Load : System Load Served By Maui Electric Company.

Gross System Load : Net System Load + Load Served By Behind the Meter PV.

Island Wide PV Generation: PV Power Generation throughout Maui

Island Wind Generation: Wind Power Generation on Maui

## Renewable Watch - Previous Day



Today



76/68 °F  
Mostly sunny.

Tomorrow



78/60 °F  
Partly cloudy with  
scattered rain showers.

Friday

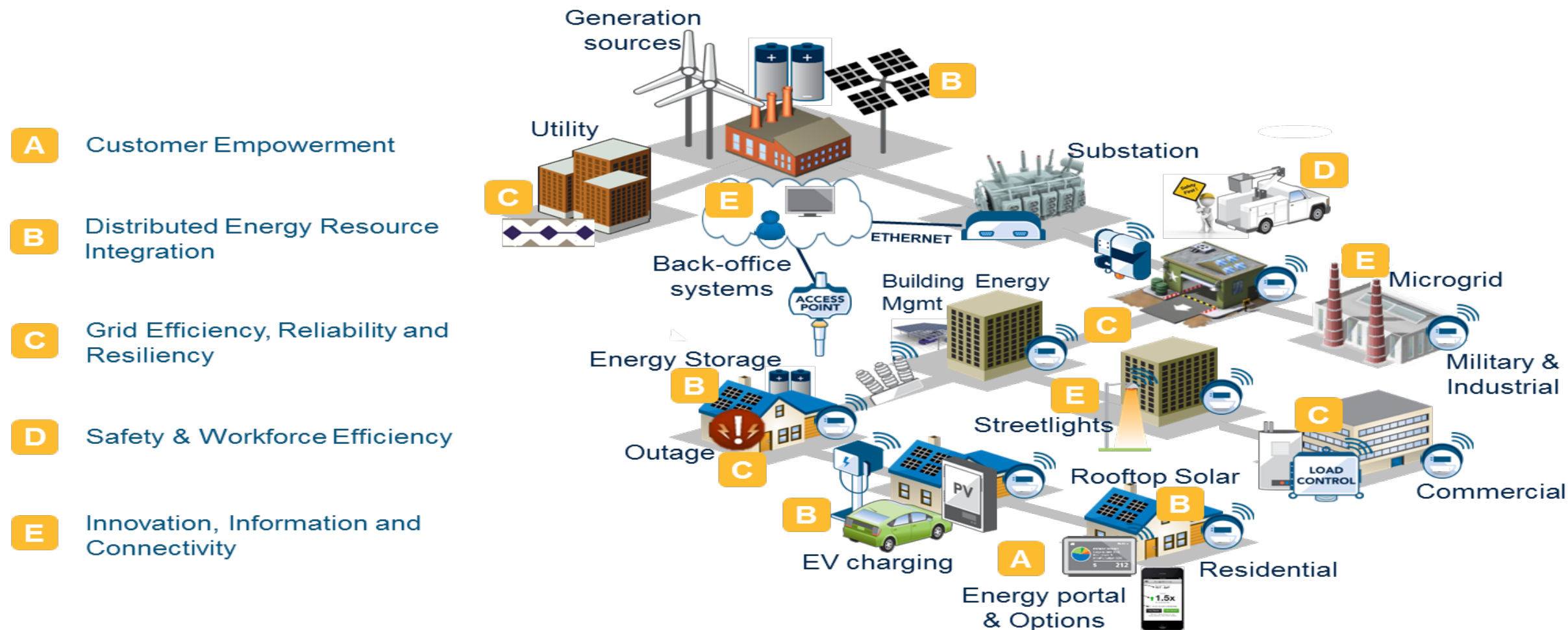


80/63 °F  
Mostly sunny.



Maui  
Electric

# Our Smart Grid for Hawaii's Energy Future

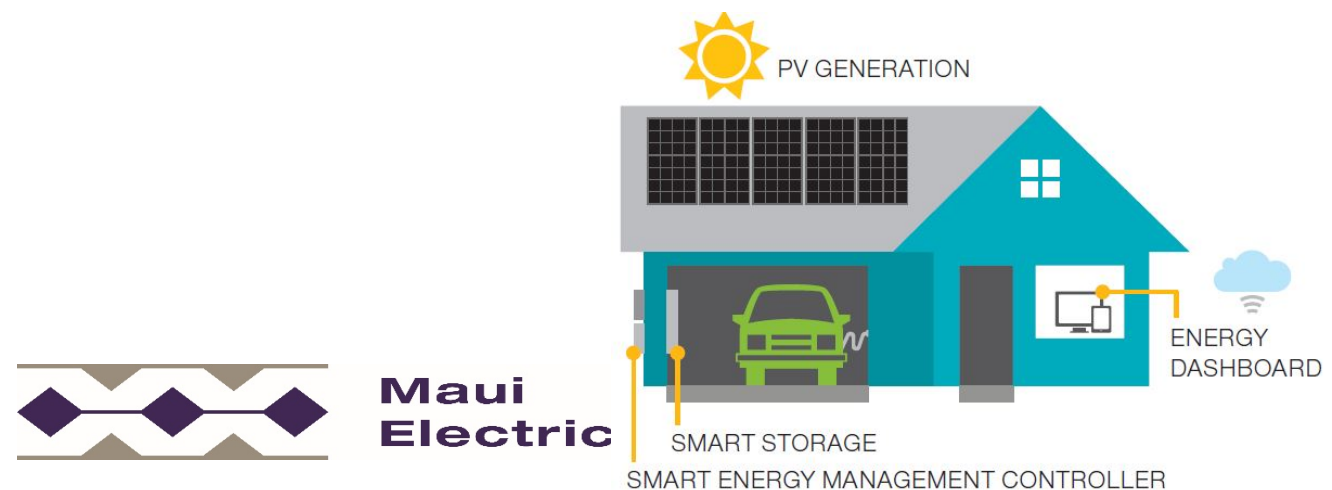
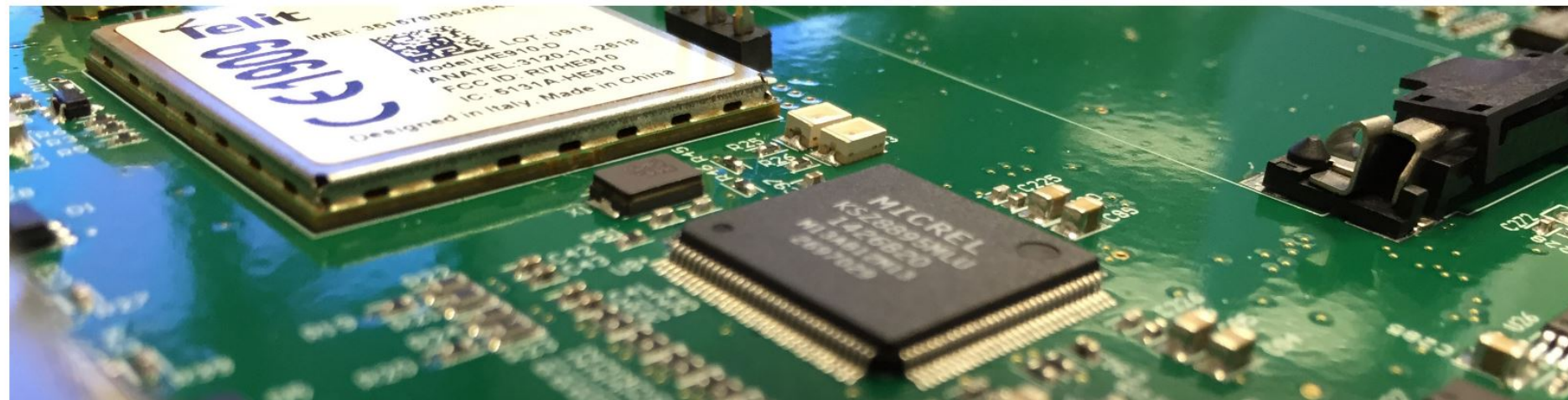


**Maui  
Electric**

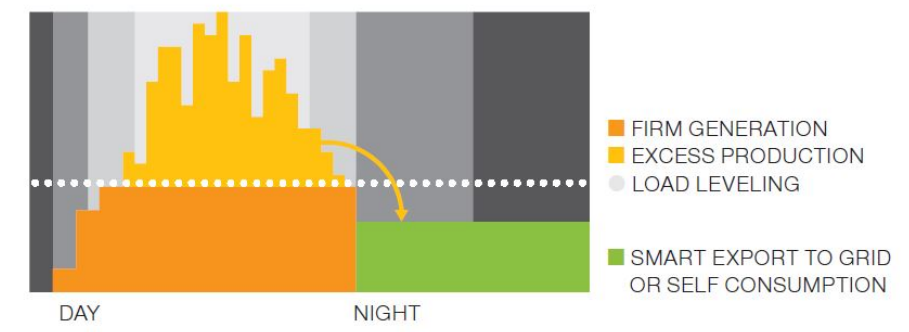




# Energy Management Controller



SMOOTHING PV ENERGY





# Going Local: How Municipalization emPOWERs Communities

Jonathan Koehn  
Regional Sustainability Director  
City of Boulder

March 17, 2016

# A birch rod?

## ***Franklin D. Roosevelt in a 1932 speech***

“I might call the right of the people to own and operate their own utility a birch rod in the cupboard, to be taken out and used only when the child gets beyond the point where mere scolding does any good.”



Or a land war in Asia?





# What is municipalization?

## The Basics

- Moving away from a for-profit, investor-owned utility
- Through sale or condemnation, acquiring assets necessary to a locally owned and operated utility

## In Boulder

- We have the legal right
- Taking ownership of poles and wires, not generation facilities
- Initially purchase power from PSCo or wholesale energy market
- Investing, over the long-term, in lower-carbon energy mix
- Creating a utility that supports innovation and economic vitality





# Why Municipalize?

**Lower rates:** A municipal utility's first and only purpose is to provide efficient, reliable service at competitive rates.

**Local Control:** Shareholders versus stakeholders; decisions aligned with community values

**More renewables:** Public utilities can respond to consumer demand and provide more energy from renewable sources. Focus on local generation.

**Improved Reliability & Resilience:** With greater control over their city's utility system, public utilities are typically more reliable and effective than IOUs.

**Local Economic Vitality:** Retain energy dollars locally

**Stranded Assets:** Who should bear the burden of the investment?

**Maximize leverage:** More than a buyer-seller relationship



# So what are the challenges?

- Significant investment
- Legal right
- Opponents certainly have more resources
- Time and fatigue
- Cost to stand up new utility
- Potential loss of franchise fee
- “social engineering”
- Change = risk
- “Can we” versus “should we”



# Boulder's legacy

**Pioneer:** first local carbon tax, only major municipi

**If successful:** Green leader: local, low carbon, affordable, reliable energy

**If not:** Cautionary tale...need a more conducive state system for increasing customer and community choice

