

# Rate Design: Pricing in Consideration of State Energy Policy

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# Considerations for Rate Design in Hawaii

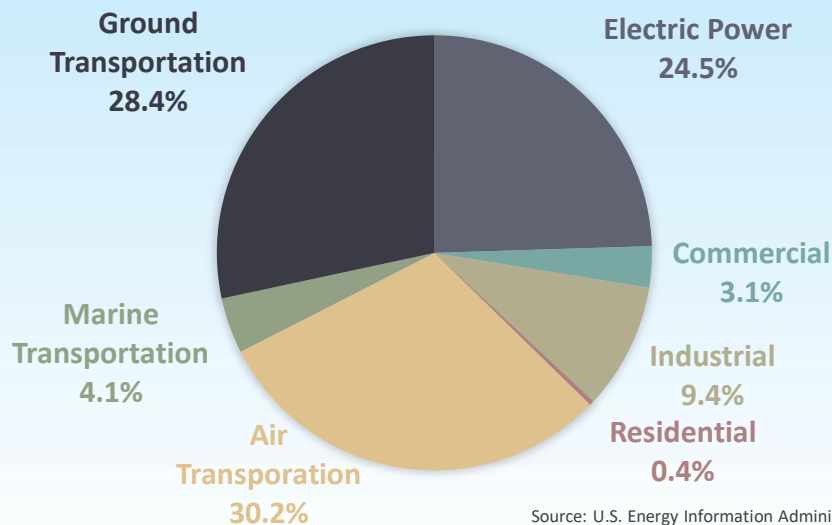
- What are Hawaii's energy policy goals?
- What does Hawaii look like if successful in achieving those goals?
- How can rate design support that vision of Hawaii?
- What, if any, implications are there for rate design principals and will any need to be adjusted to develop rates that support Hawaii's vision?



# State Energy Policies

- In 2015 the Hawaii State Legislature set a statutory provision for a 100 percent Renewable Portfolio Standard (RPS) by 2045
- Hawaii also has a Statewide Energy Efficiency Portfolio Standard (EEPS) goal of 4,300 gigawatt-hours of electricity savings by 2030
- In 2018 Governor Ige signed into law a goal for statewide carbon neutrality by 2045
- The mayors of Hawaii's four main counties have also jointly pledged to eliminate fossil fuel use from ground transportation by 2045

## HAWAII'S PETROLEUM USE BY SECTOR 2017







Energy Independence means breaking our addiction on imported fossil fuels

Source: U.S. Energy Information Administration, State Energy

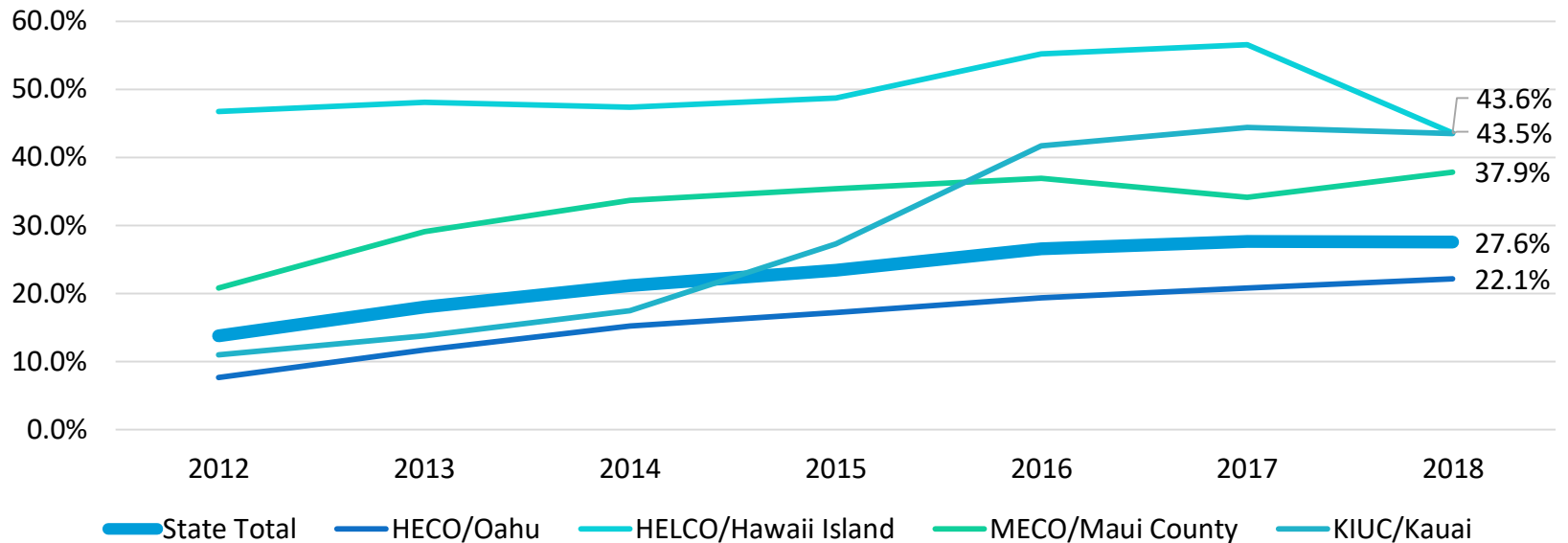


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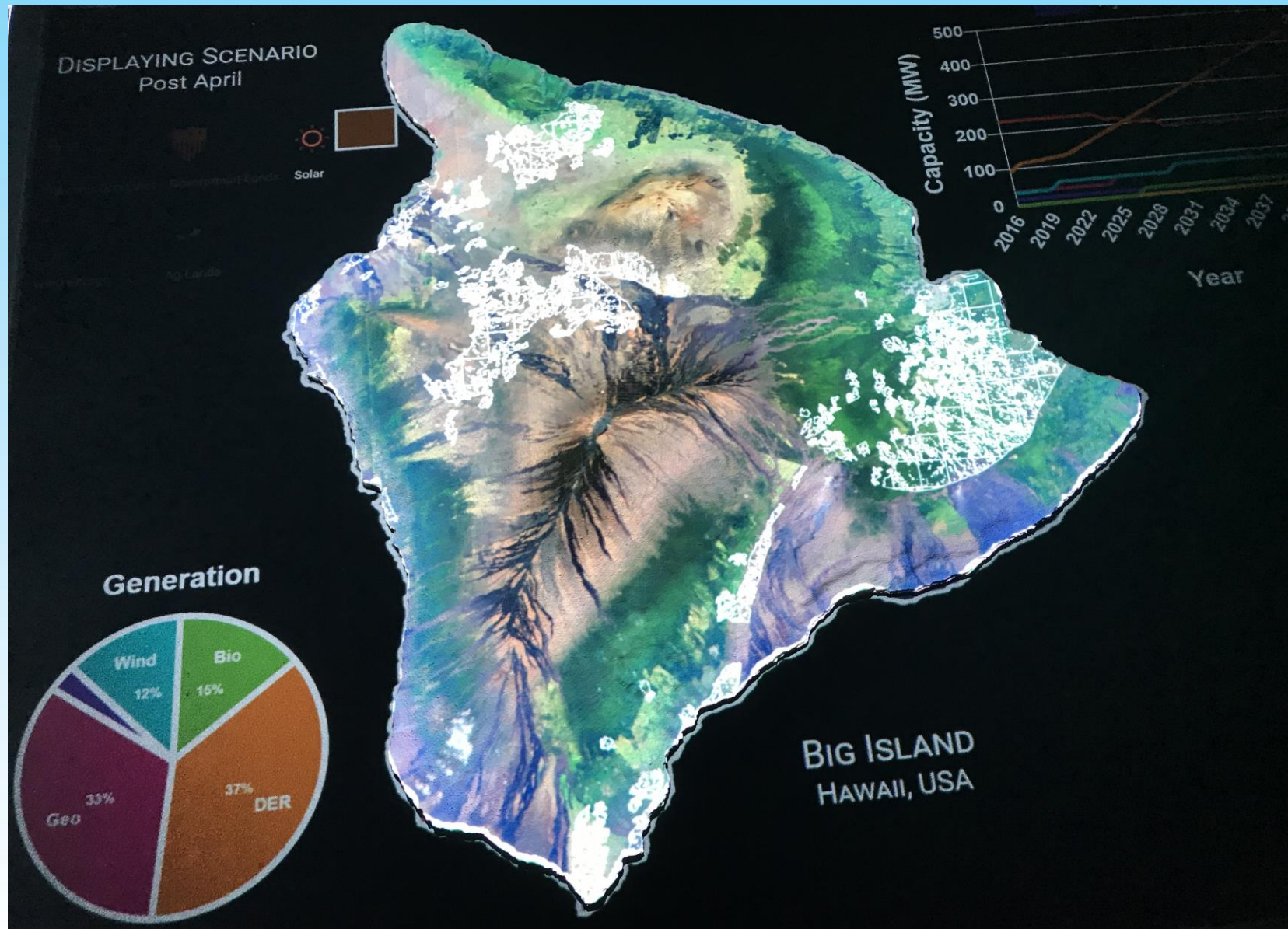
# Hawaii Renewable Portfolio Standards (RPS)

RPS	2020	2030	2040	2045
	30% 	40% 	70% 	100% 

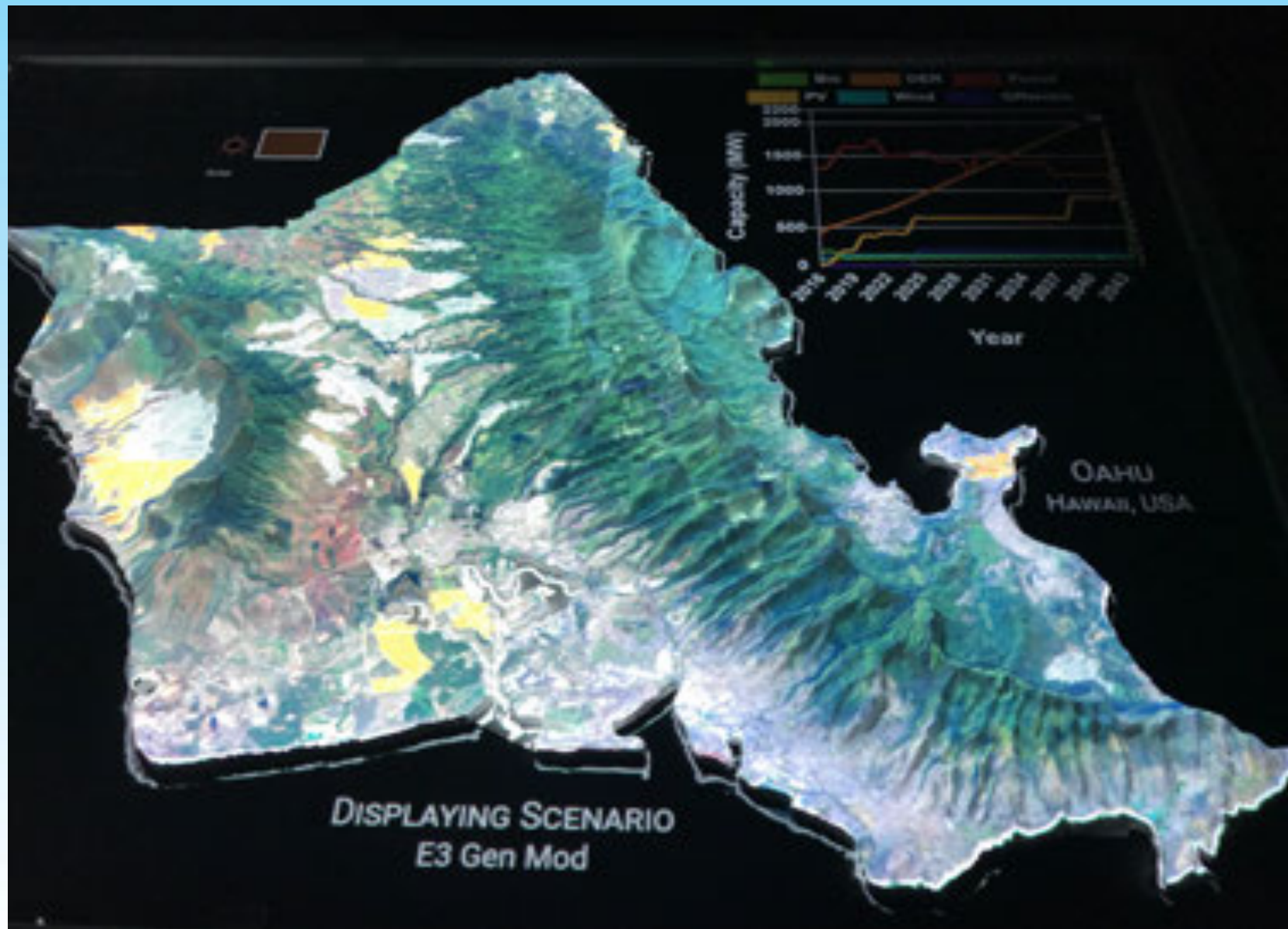
Hawaii RPS 2012-2018



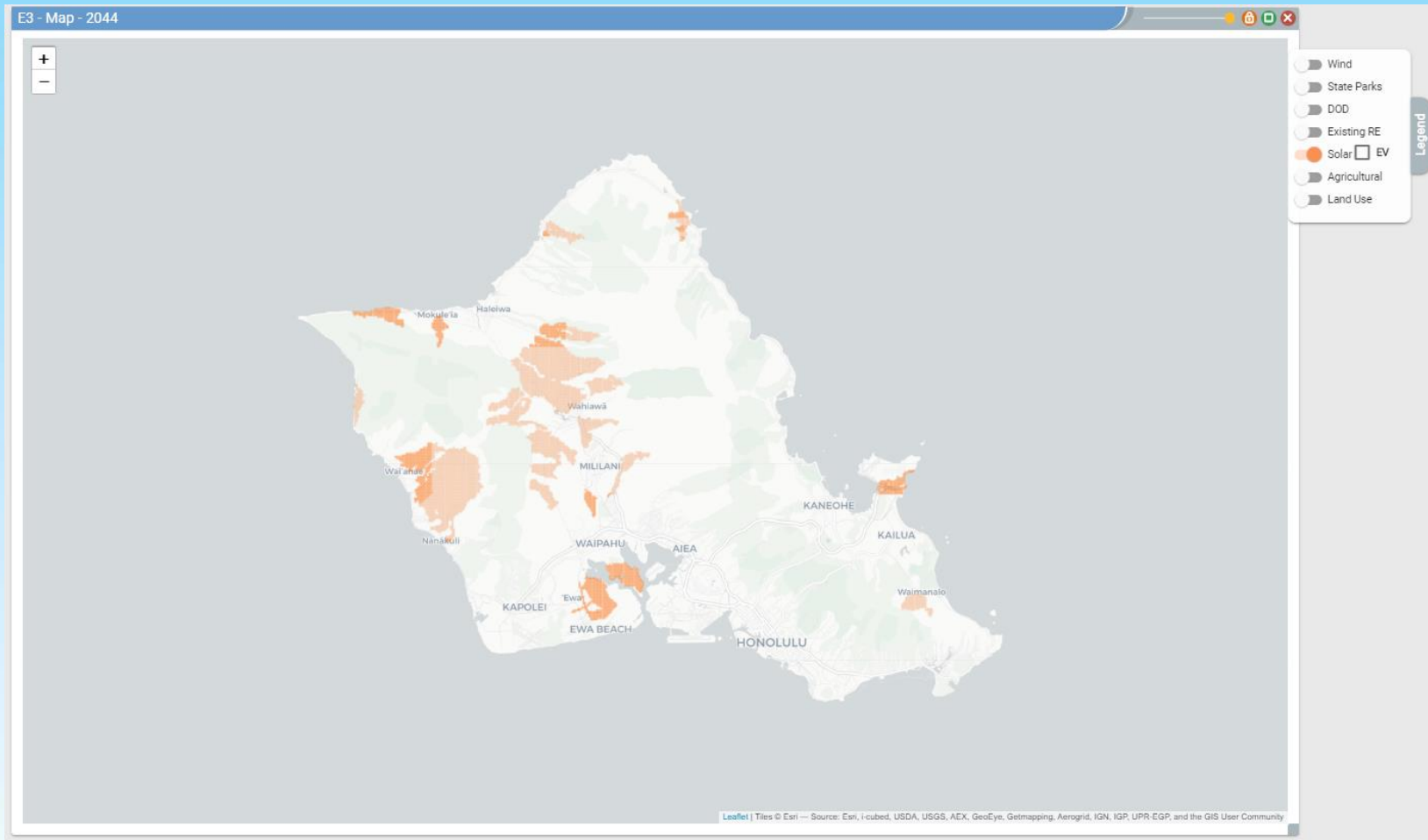
# Islands are Different: Hawaii



# Islands are Different: Oahu

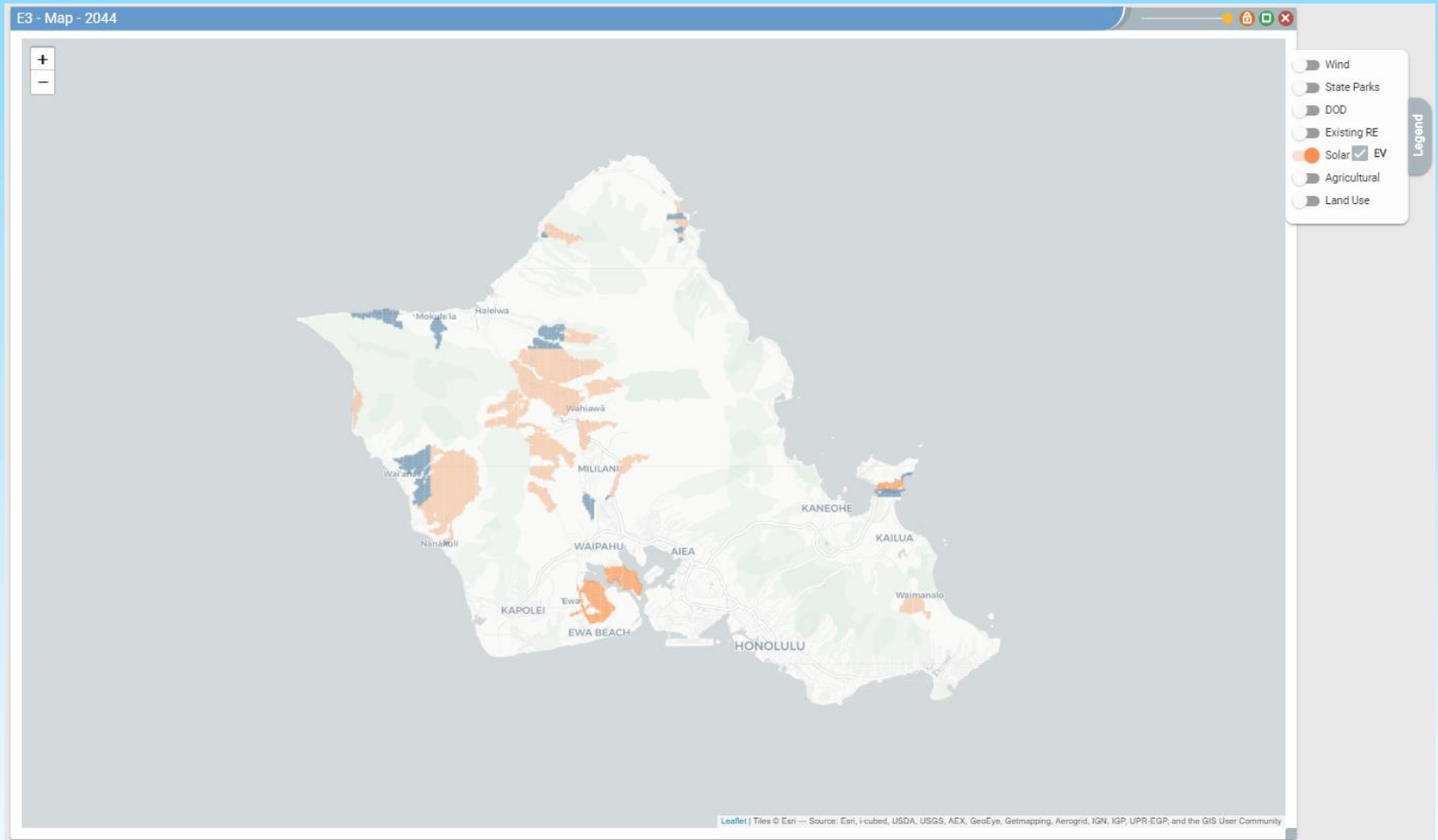


# Carbon Neutral Economy: Electrification of Transportation



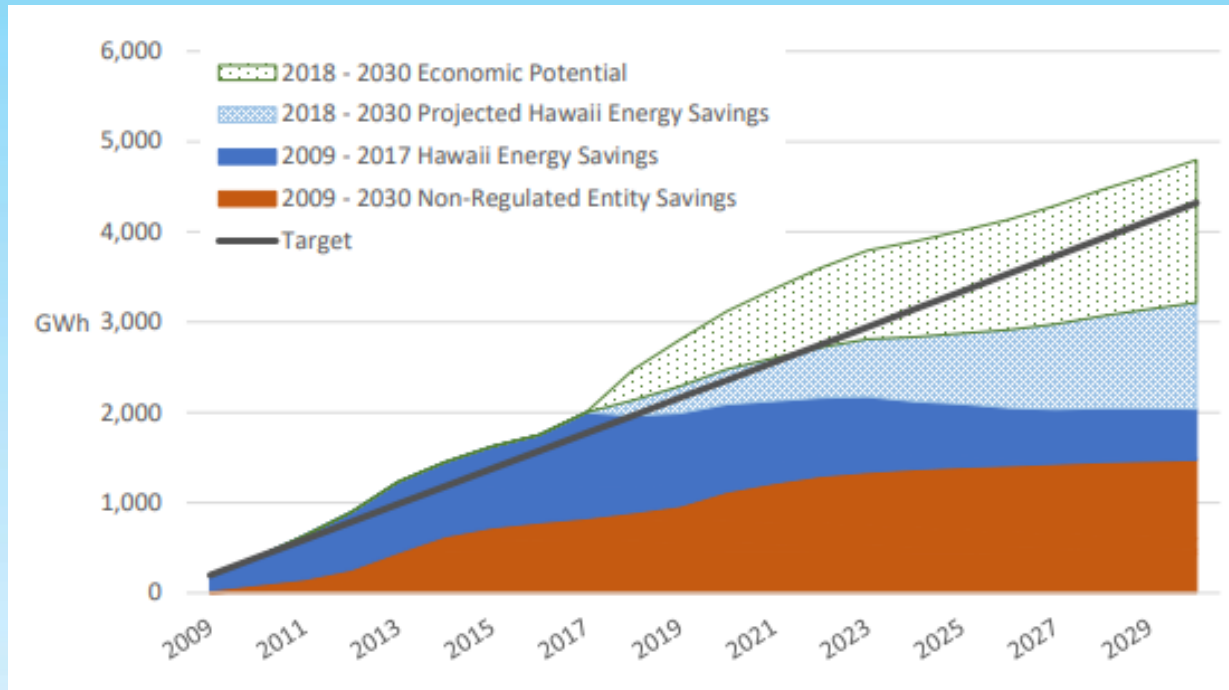
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# Carbon Neutral Economy: Electrification of Transportation









# Statewide Energy Efficiency Portfolio Standard



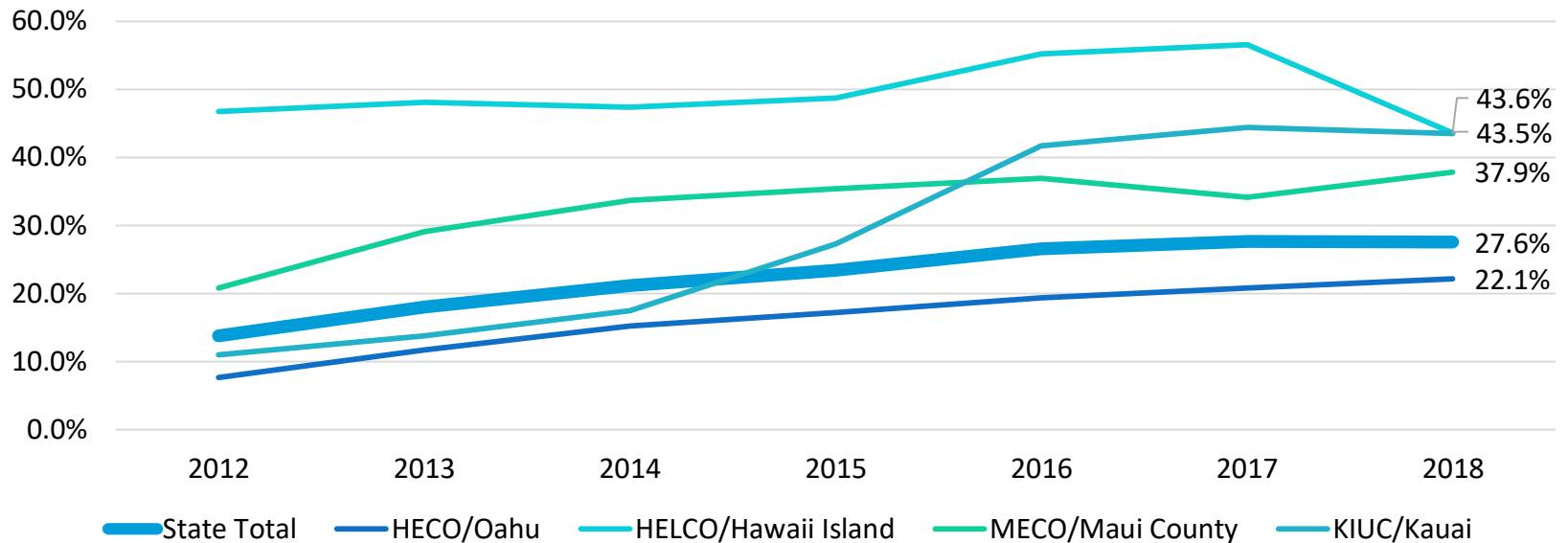
- Statewide Energy Efficiency Portfolio Standard (EEPS) goal is 4,300 gigawatt-hours of electricity savings by 2030.
- Energy efficiency remains a lower cost resource than most other energy options, while providing many other important benefits to Hawaii's electric utilities and ratepayers.



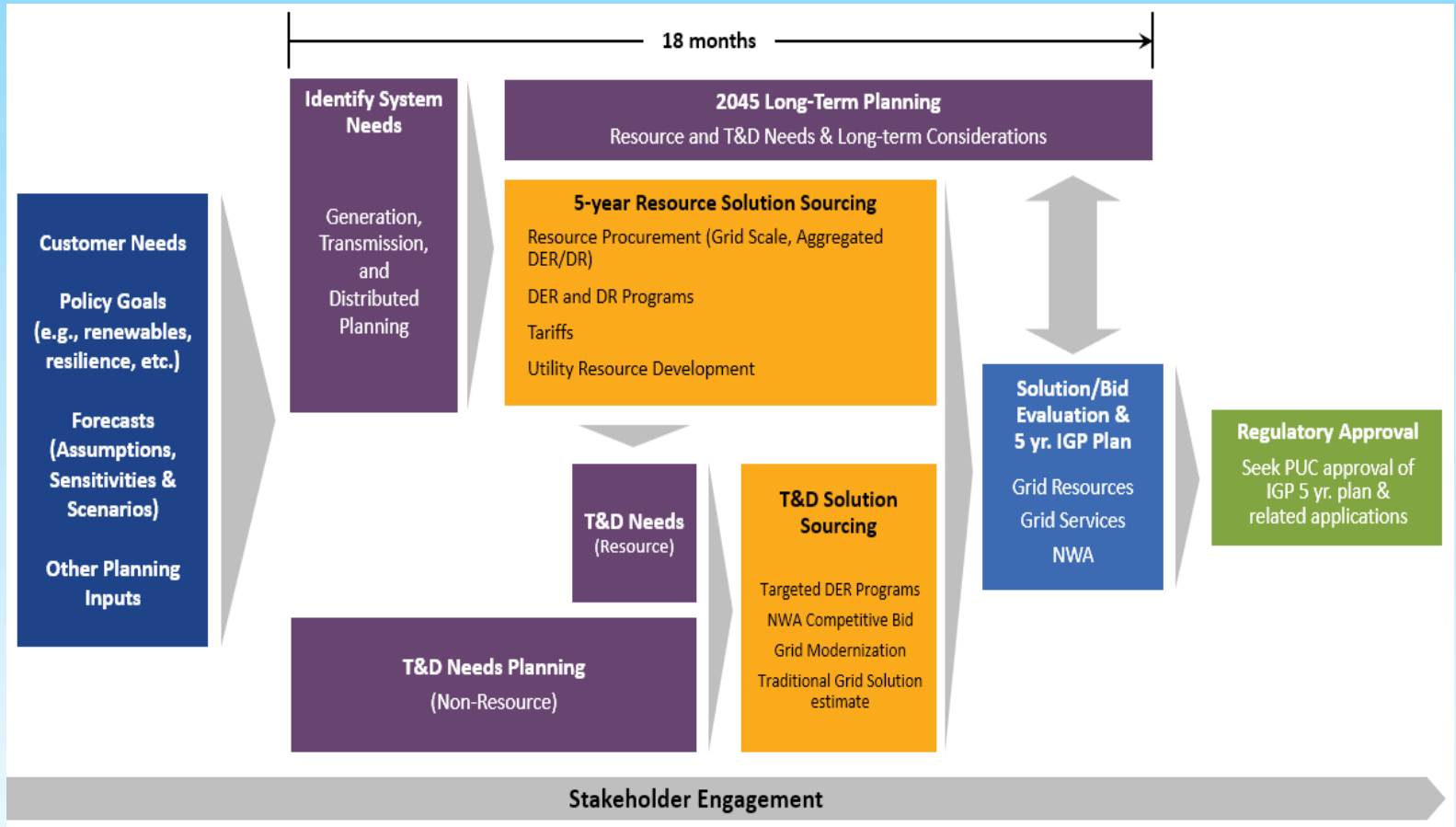
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Hawaii RPS 2012-2018



# Integrated Grid Planning: Incorporating DER “Procurement”

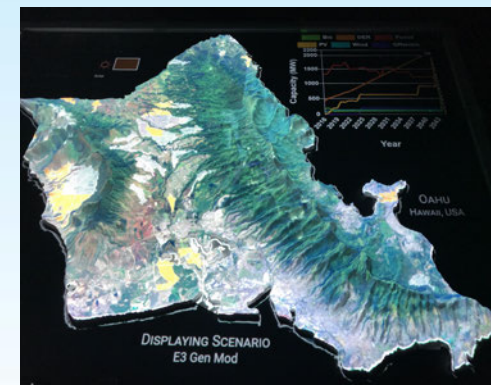
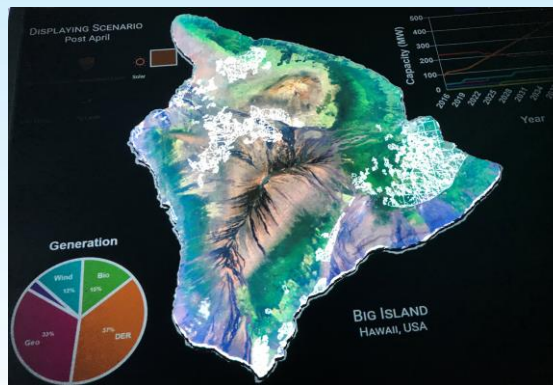


<https://www.hawaiianelectric.com/clean-energy-hawaii/integrated-grid-planning/stakeholder-engagement>



# Resource Optimization, Land Utilization and DER Adoption

- Land is a finite resource in Hawaii which creates a technical limit on the potential for utility scale resources
- To achieve state energy policy DER deployment is not simply a question of economic efficiency but a necessary resource given constraints
- Rates can play a significant role in a customer's decision to adopt DER
- What, if any, adjustment to rates and cost allocation are needed to achieve adoption equivalent to 40% or more of system energy procured from behind the meter?
  - How does any adjustment account for consumer equity?
  - If resource potential and planning targets are different by island how should rate design account for this if at all?



# Cost Efficient Rate Design to Maximize Customer Connectivity

Keeping DER customers connected to the grid helps maximize the benefits of DER for all customers and helps minimize grid costs per customer

- This is especially true if the potential DER customer market represents 40% or more of system energy

If DER costs fall below the cost of individual customers utility bills then those customers could disconnect from the grid resulting in a “death spiral”

However what happens if the cost a customer would face if they disconnected from the grid

- Is less than the fully allocated cost to serve a DER customer?
- But is more than short run avoided costs to serve that DER customer?

If there is a balance to be struck and if so, how could rate design and cost allocation accommodate it?



# Mahalo

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for a Better Hawaii!***



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