London Economics International LLC

Evaluation of Utility Ownership and Regulatory Models for Hawaii

Public Meeting - Honolulu, Hawaii

Study Prepared for the Hawaii Department of Business, Economic Development, and Tourism ("DBEDT")

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Disclaimer notice

- **London Economics International LLC ("LEI") was engaged by the Department of Business Economic Development and Tourism to look at various ownership and regulatory models for the State of Hawaii (also referred to herein as the "Study"). LEI has made the qualifications noted below with respect to the information contained in this preliminary presentation and the circumstances under which the presentation was prepared.**

- **While LEI has taken all reasonable care to ensure that its analysis is complete, power markets are highly dynamic, and thus certain recent developments may or may not be included in LEI's analysis. Stakeholders should note that:**
  - The Study is not intended to be a complete and exhaustive analysis of all possible ownership and regulatory models. All possible factors of importance to stakeholders have not necessarily been considered. The provision of an analysis by LEI does not obviate the need for stakeholders to make further appropriate inquiries as to the accuracy of the information included therein, and to undertake their own analysis and due diligence.
  - No results provided or opinions given in LEI's analysis should be taken as a promise or guarantee as to the occurrence of any future events.
  - There can be substantial variations between assumptions and market outcomes analyzed by various consulting organizations specializing in power markets. LEI does not make any representation or warranty as to the consistency of LEI's analysis with that of other parties.

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Agenda

1	**About the study**
2	Ownership models
3	Regulatory models
4	Additional analyses
5	Key takeaways

DBEDT is directed by the legislation to:

Evaluate alternative utility ownership and regulatory models

Ownership models refer to the owner of the utility assets including generation, transmission, distribution

Regulatory models refer to the set of regulations framing, among others, the utility's allowed revenues, rate structure, and regulatory and performance targets

1

Assess the ability of each model to:

1) Achieve **state energy goals**
2) Maximize **consumer cost savings**
3) Enable a **competitive distribution system**
4) Eliminate or reduce **conflicts of interest**

2

Conduct a long-term cost benefit analysis

- **Costs** required to change from current model to new model
- **Legal and regulatory approvals** needed for the change
- Impact on **revenue requirements** and **rates**
- Effects on **distributed energy resources**

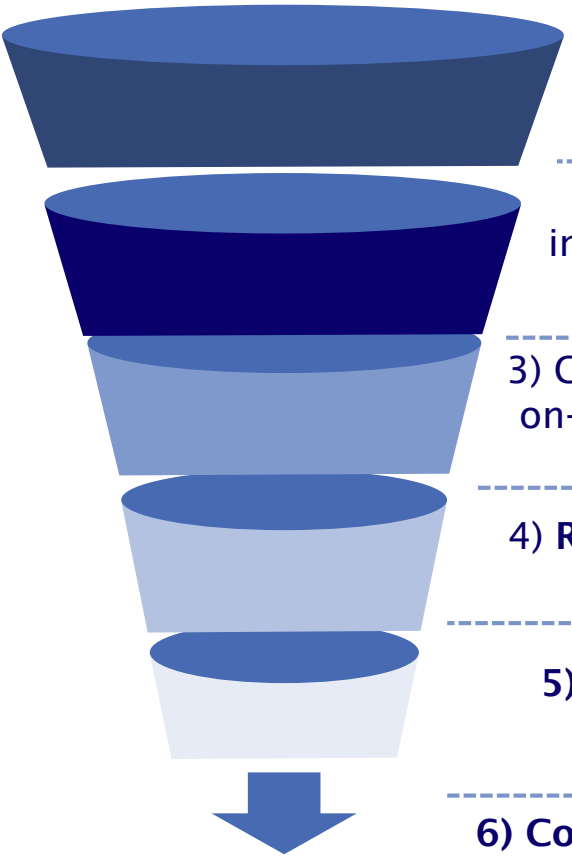
3

Source: House Bill 1700 (Act 124 of 2016)

The assessment of potential models consists of multiple layers, including various analyses and stakeholder outreaches

Key steps taken in the Study

Ownership models



1) Considered **several potential models** for the state

2) Performed **high-level assessments** including pros/cons, feasibility, and stranded costs

3) Conducted **community outreaches** and one-on-one meetings; incorporated views from the **stakeholders**

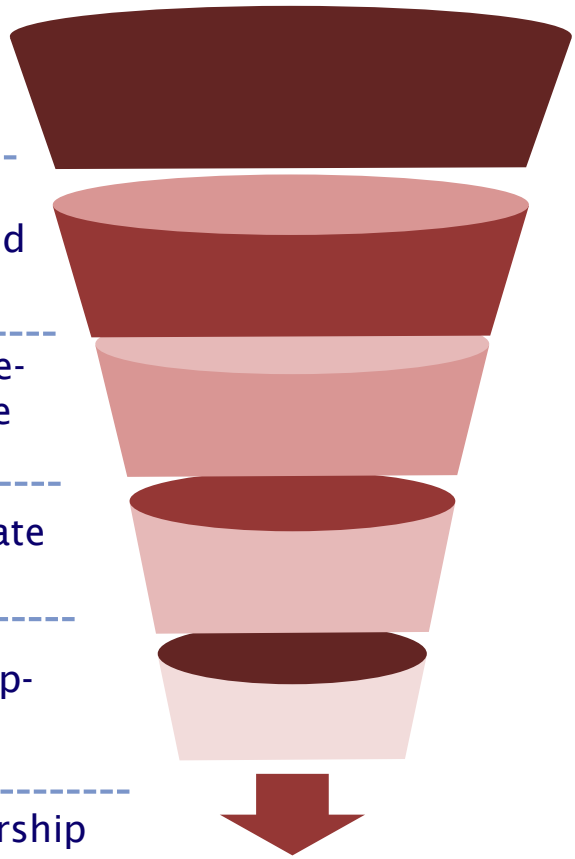
4) **Ranked** the alternative models based on state goals and impact to ratepayers

5) Conducted **additional analyses of the** top-ranked alternative models

6) Compared results of alternative utility ownership and regulatory models

Three alternative **ownership models** for further consideration

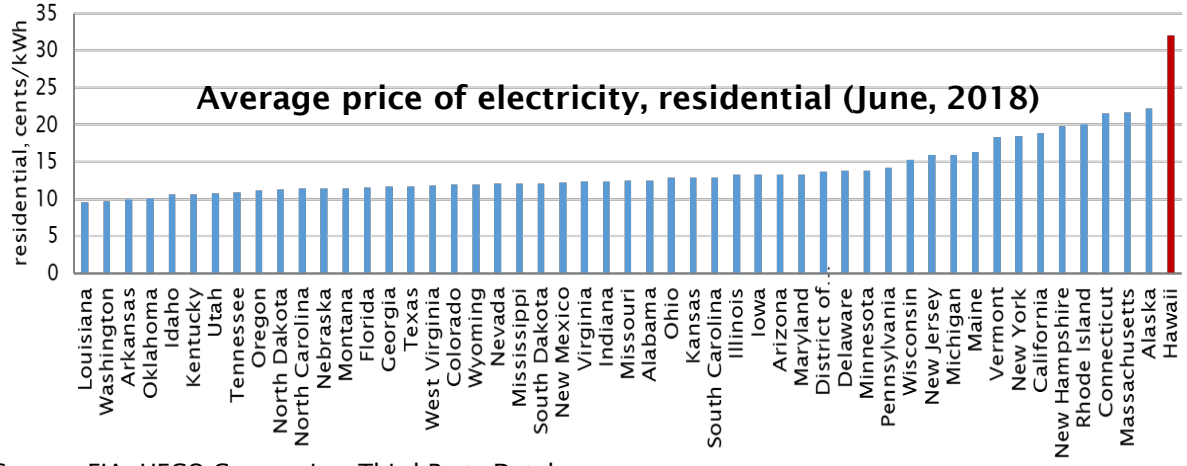
Regulatory models



Three alternative **regulatory models** for further consideration

According to the stakeholders, lowering electricity rates is the priority

Highest electricity rates in the country



Source: EIA. HECO Companies, Third Party Databases

Other priorities raised by stakeholders
(not arranged in any particular order)

- Responsiveness/alignment with community priorities
- Infrastructure needs to be resilient and improved
- Consider State's and counties' distinct characteristics
- Increased renewable energy
- Innovation and adoption of new technologies

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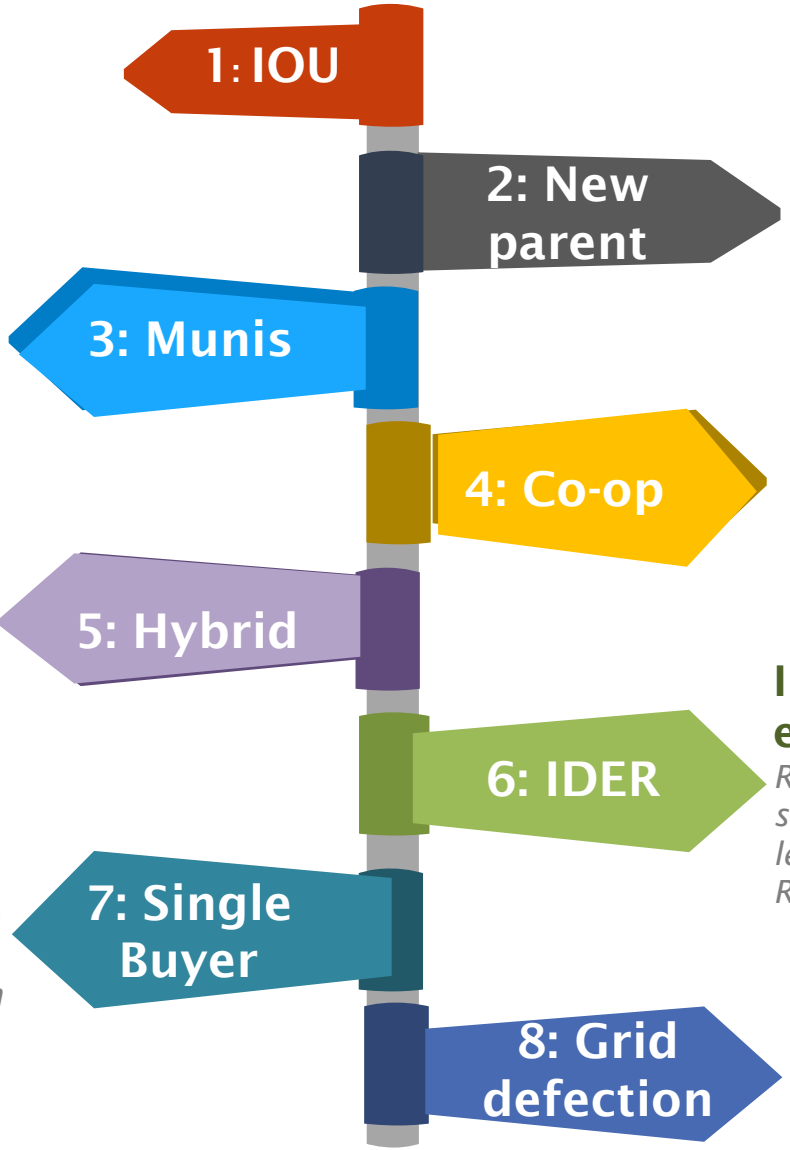
The Project Team evaluated eight ownership models

Investor-Owned Utility
Current status quo in Honolulu, Hawaii, and Maui Counties

Municipal utility
Acquisition by governmental entity (state, municipal, or special district)

Hybrid, majority government owned
Public-private partnership, common in international contexts

Single Buyer
Utility or third party responsible for purchasing power from utility and non-utility generation



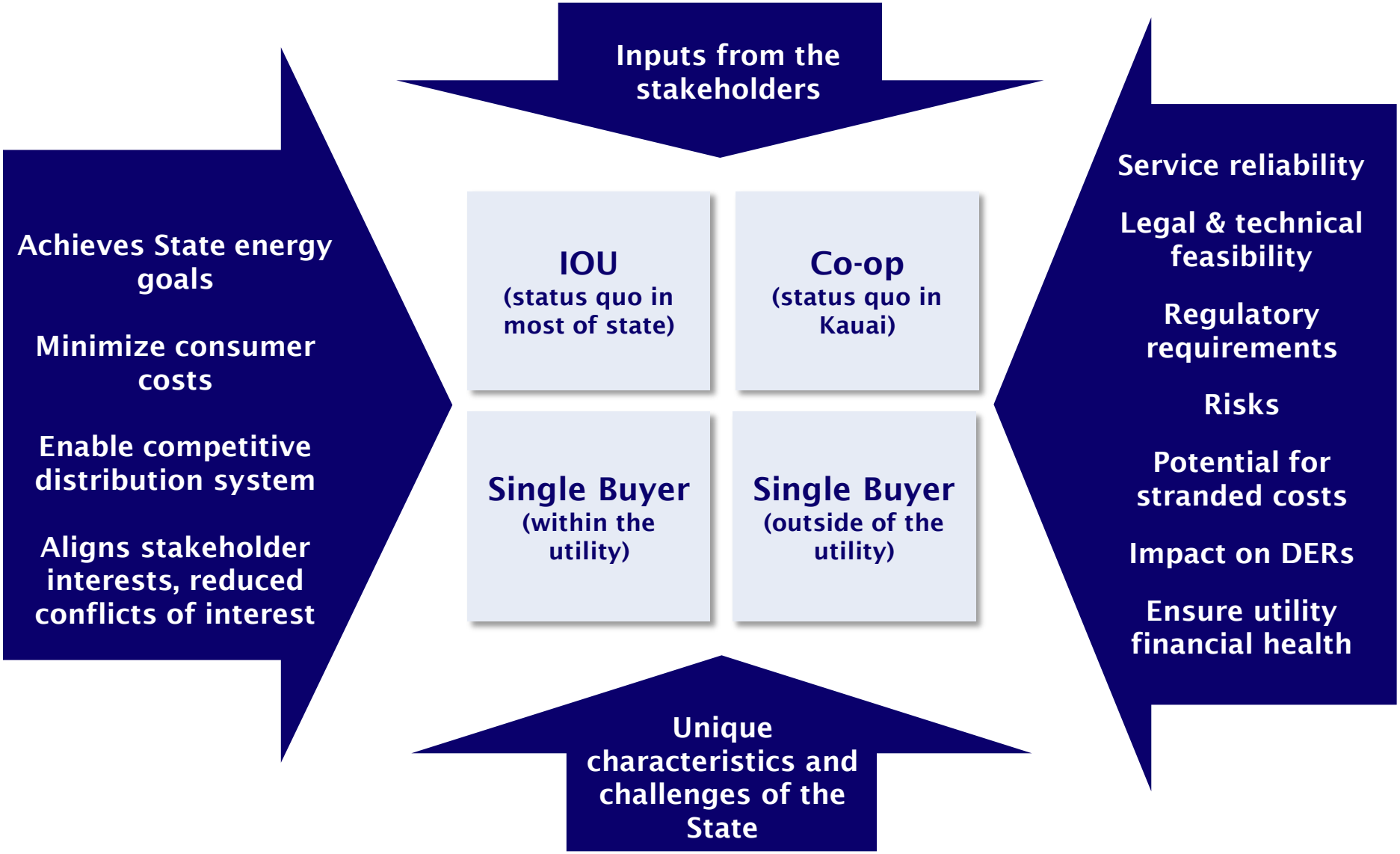
New parent with IOU
Utility acquisition by new IOU (includes utility holding company, private investor, B-corp variants)

Cooperative
Current status quo in Kauai County, ownership by utility ratepayer-members

Integrated distributed energy resources (IDER)
Role of utility (or third party) shifts to coordinating distribution-level resources (e.g. goal of NY REV process)

Grid defection
Grid defection leads to dispersed and un-coordinated ownership of generation resources

Four ownership models - IOU, co-op, and SB (within and outside of the utility) - were selected for additional analyses



Transfer of asset ownership involves acquisition and transaction costs and risks, while the SB would provide independent procurement with higher fixed costs

IOU to Co-op or Co-op to IOU

Single Buyer (outside of the utility)

Single Buyer (within the utility)

	IOU to Co-op or Co-op to IOU	Single Buyer (outside of the utility)	Single Buyer (within the utility)
Costs/benefits	• Cost to acquire assets, plus transaction fees between 1%-3% of acquisition cost • Risks associated with new owner entity • No stranded costs • Both models have access to capital, but incentives are different	• Initial setup investments (Year One costs) and recurrent operating costs • Risks associated with setting up new entity (if outside utility) • No stranded costs if assets remain regulated • Independent planning and power procurement	
Timeline	• Approximately 24-36 months	• 36-48 months with significant uncertainty due to the legislative and regulatory processes to establish the single buyer entity	
Legal changes	• No changes to regulation are necessary • The burden of proof rests on the new owner to demonstrate that it can meet the laws and regulations already in place	• Requires a PUC proceeding • Requires legislative action to establish a new entity to take over the planning and procurement responsibilities of the utility	

Ownership changes expected to have mixed impacts based on island-specific characteristics – with a greater magnitude resulting from a change in asset ownership

Average impact on rates relative to the Status Quo – from 2018 to 2045

County/Island	Cooperative	IOU	Single Buyer (within utility)	Single Buyer (independent)
Honolulu County	↑ 5.3%	N/A	↓ -0.7%	↓ -0.8%
Hawaii County	↑ 8.2%	N/A	↑ 0.3%	↑ 0.3%
Island of Maui*	↓ -1.8%	N/A	↓ -1.3%	↓ -1.3%
Island of Molokai*	↓ -2.5%	N/A	↑ 1.2%	↑ 1.2%
Island of Lanai*	↓ -1.4%	N/A	↑ 0.8%	↑ 0.8%
Kauai County	N/A	↑ 6.7%	↑ 1.0%	↑ 1.0%

** Assumes that ownership changes apply to Maui County as a whole, not individually to each island*

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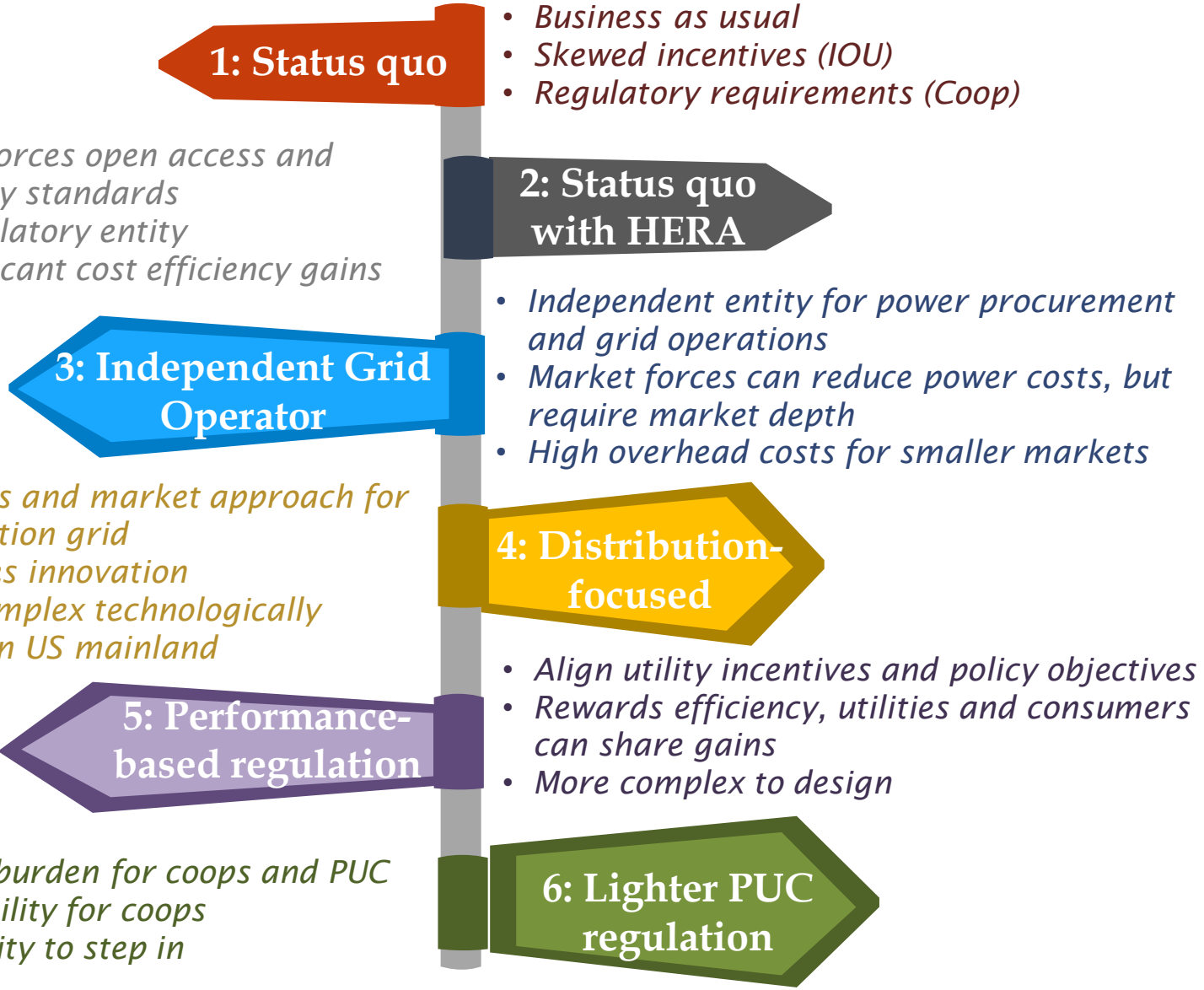
The Study evaluated six regulatory models, which are not mutually exclusive



The Project Team selected four regulatory frameworks for each county, combining models to provide synergies

Inputs from the stakeholders

Achieves State energy goals

Minimize consumer costs

Enable competitive distribution system

Aligns stakeholder interests, reduced conflicts of interest

Hawaii, Maui, Honolulu Counties

Compared status quo and three alternative regulatory frameworks against selection criteria

Kauai County

Compared status quo and three alternative regulatory frameworks against selection criteria

Service reliability

Legal & technical feasibility

Regulatory requirements

Risks

Potential for stranded costs

Impact on DERs

Ensure utility financial health

Unique characteristics and challenges of the State

Alternative regulatory frameworks depend on existing ownership model in each county

Hawaii, Maui, Honolulu Counties

Status Quo

- COS with PBR components

Outcomes-based PBR

- Provides flexibility to utility
- Driven by performance incentives
- No distinction between OPEX and CAPEX for setting rates

Conventional PBR + Light HERA

- Utility revenue requirement is adjusted for inflation and productivity
- Utility performance incentives related to policy objectives
- Light HERA would focus on DERs

Hybrid

- Outcomes-based PBR
- IGO provides market framework for wholesale supply and operates grid
- DSPP provides market construct for exchange of distributed services

Kauai County

Status Quo

- PUC oversight

HERA

- HERA takes over responsibility for reliability standards, interconnection requirements
- Current regulatory framework otherwise untouched

IGO

- IGO provides market framework for wholesale supply planning and procurement, and grid operations
- Coop retains “wire” assets

Lighter PUC regulation

- Reduced oversight from PUC over co-ops
- PUC can still step in if outcomes outside set boundaries

Costs and timeline for the proposed alternative regulatory models increase with the complexity of the model

	Outcomes-based PBR	Conventional PBR + Light HERA	Hybrid
Costs	Costs associated with transition, no long-term additional costs	Costs associated with transition, long-term additional costs for HERA entity	Significant long-term costs for implementation and operation of IGO, DSPP
Time	< 2 years	Staggered implementation over 3 years for PBR then Light Hera	Staggered implementation over 4+ years for PBR then IGO and DSPP
Legal changes	No legal changes needed because PBR falls under existing PUC legal authority	No legal changes needed for Conventional PBR or Light HERA	No legal changes needed for Outcomes-based PBR Legislation likely required for IGO and DSPP

	HERA	IGO	Lighter PUC regulation
Costs	Costs associated with implementation and operation of HERA entity	Significant costs for implementation and operation of IGO	Minor regulatory costs to change regulatory framework
Time	~ 2 years	~ 2 years	< 1 year
Legal changes	HERA already authorized by law	Legislation likely required for IGO	Legislation likely required to customize regulatory requirements for co-ops

Proposed alternative regulatory models would lower rates for customers due to incentives, increased competition, or other PBR mechanisms

Average impact on rates relative to the Status Quo – from 2018 to 2045

Alternative regulatory model	Honolulu County	Hawaii County	Maui County
Implement an Outcomes-based PBR model	-2.1%	-4.8%	-2.2%
Implement a Conventional PBR + Light HERA model	-2.2%	-4.4%	-1.9%
Implement Hybrid Model	-0.4%	-9.2%	-2.2%

Alternative regulatory model	Kauai County
Move to a Lighter PUC Regulation	-0.8%
Establish a HERA model	0.0%
Establish an IGO model	-0.2%

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Rate design can be complementary to alternative models, while there are pros/cons to multi-county vs. single-county model

Rate design

1 Tiered rates	Inclining block rates	
	Declining block rates	
2 Higher fixed charges		
3 Time-varying rates		Time-of-Use rates
		Real-Time Pricing
		Critical Peak Pricing

- Rate design changes can be effective complementary mechanisms to ownership and regulatory changes and could help achieve some of the state's policy objectives
- Changes to rate design must be consistent with overall policy objectives in light of the prevailing ownership and regulatory model

Single vs multi-county model

Utilities' management and operations	Single-county model	Multi-county model
Ability to meet state energy goals	-	better
Maximize consumer cost savings	-	better
Enable a competitive distribution system	-	better
Address conflicts of interest in energy resource planning, delivery, and regulation	better	-
Align stakeholder interests	better	-

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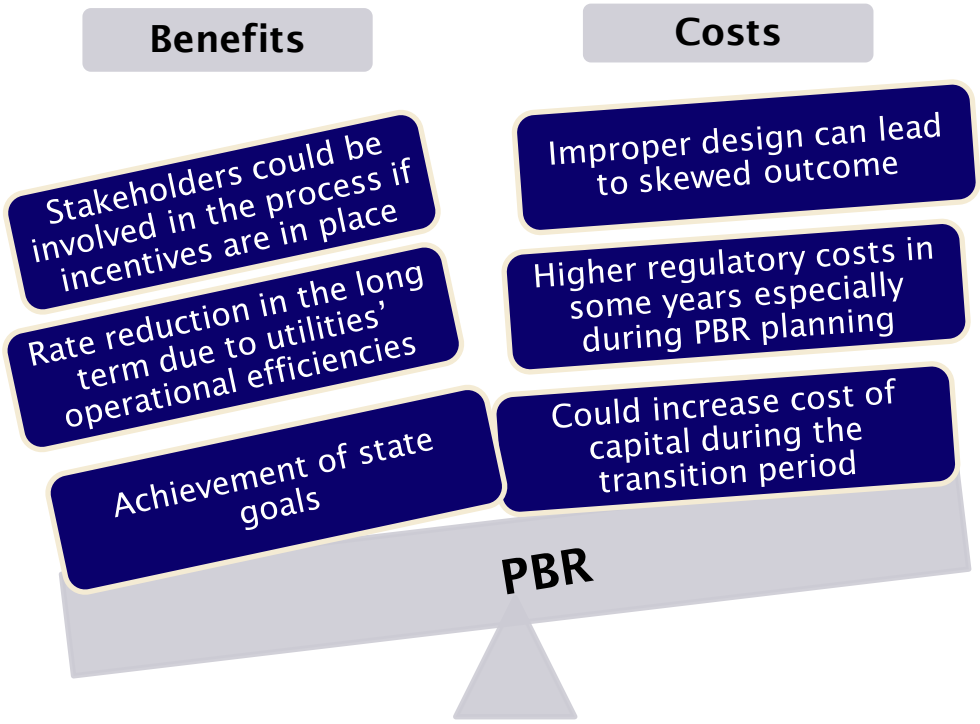
Key takeaways – Hawaii, Maui, Honolulu counties

- **The current ownership and regulatory framework has ensured reliable service, but *regulatory adjustments* can ensure it is adapted to the *evolving technological and policy landscape***
- **A change in ownership model *does not necessarily address the #1 concern of stakeholders*, which is to lower electricity rates**
  - Costs and risks associated with transaction negate longer-term benefits
  - Most benefits of ownership change can be achieved through regulatory adjustments
- **Regulatory changes have a greater likelihood of *achieving State policy objectives***
- **Benefits of moving to any of the PBR options generally outweigh the costs**
- **Implementation of PBR and other constructs can be achieved on a *staggered basis***



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Key takeaways – Kauai County

- **The current ownership and regulatory framework has ensured reliable service, but *regulatory adjustments* can ensure it is adapted to the *evolving technological and policy landscape***
- **A change in ownership model *would likely increase electricity rates***
  - Costs and risks associated with transaction negate longer-term benefits
- **The complexities of the transition and implementation of an IGO *may not warrant the change***
- **Lighter PUC regulation would help *reduce rates and increase utility flexibility*, but there is still a need for a *safety net for consumers***
- **HERA could be a vehicle to *provide arbitration services*, together with establishing and enforcing *reliability standards* to help the state meet the renewable energy goals**

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Additional information

- **This presentation is a summary of the Study's final report**
  - The final report is itself based on more than forty individual task reports
- **The final report, and all individual task reports, will be posted on the HSEO website**
  - http://energy.hawaii.gov

Thank you