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”)
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.
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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

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

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

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**

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.

Three alternative **regulatory models** for further consideration.
According to the stakeholders, lowering electricity rates is the priority.

- 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

**Highest electricity rates in the country**

Source: EIA, HECO Companies, Third Party Databases
Agenda

1. About the study
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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.

Inputs from the stakeholders

- Achieves State energy goals
- Minimize consumer costs
- Enable competitive distribution system
- Aligns stakeholder interests, reduced conflicts of interest

Unique characteristics and challenges of the State

- Service reliability
- Legal & technical feasibility
- Regulatory requirements
- Risks
- Potential for stranded costs
- Impact on DERs
- Ensure utility financial health

Ownership models ranking:

- IOU (status quo in most of state)
- Co-op (status quo in Kauai)
- Single Buyer (within the utility)
- Single Buyer (outside of the utility)

Potential for stranded costs
Impact on DERs
Ensure utility financial health

Service reliability
Legal & technical feasibility
Regulatory requirements
Risks
Potential for stranded costs
Ensure utility financial health

Unique characteristics and challenges of the State

Achieves State energy goals
Minimize consumer costs
Enable competitive distribution system
Aligns stakeholder interests, reduced conflicts of interest
Transfer of asset ownership involves acquisition and transaction costs and risks, while the SB would provide independent procurement with higher fixed costs

<table>
<thead>
<tr>
<th>Costs/benefits</th>
<th>IOU to Co-op or Co-op to IOU</th>
<th>Single Buyer (outside of the utility)</th>
<th>Single Buyer (within the utility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cost to acquire assets, plus transaction fees between 1%-3% of acquisition cost</td>
<td>• Initial setup investments (Year One costs) and recurrent operating costs</td>
<td>• 36-48 months with significant uncertainty due to the legislative and regulatory processes to establish the single buyer entity</td>
<td></td>
</tr>
<tr>
<td>• Risks associated with new owner entity</td>
<td>• Risks associated with setting up new entity (if outside utility)</td>
<td>• Requires a PUC proceeding</td>
<td></td>
</tr>
<tr>
<td>• No stranded costs</td>
<td>• No stranded costs if assets remain regulated</td>
<td>• Requires legislative action to establish a new entity to take over the planning and procurement responsibilities of the utility</td>
<td></td>
</tr>
<tr>
<td>• Both models have access to capital, but incentives are different</td>
<td>• Independent planning and power procurement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Timeline</th>
<th>IOU to Co-op or Co-op to IOU</th>
<th>Single Buyer (outside of the utility)</th>
<th>Single Buyer (within the utility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Approximately 24-36 months</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Legal changes</th>
<th>IOU to Co-op or Co-op to IOU</th>
<th>Single Buyer (outside of the utility)</th>
<th>Single Buyer (within the utility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No changes to regulation are necessary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The burden of proof rests on the new owner to demonstrate that it can meet the laws and regulations already in place</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

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

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

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5. Key takeaways
The Study evaluated six regulatory models, which are not mutually exclusive.

1: Status quo
- Business as usual
- Skewed incentives (IOU)
- Regulatory requirements (Coop)
- HERA enforces open access and regulatory standards
- New regulatory entity
- No significant cost efficiency gains

2: Status quo with HERA
- Independent entity for power procurement and grid operations
- Market forces can reduce power costs, but require market depth
- High overhead costs for smaller markets

3: Independent Grid Operator
- Efficient use of DERs and market approach for services on distribution grid
- Platform encourages innovation
- Novel approach, complex technologically
- Few pilot projects on US mainland

4: Distribution-focused
- Align utility incentives and policy objectives
- Rewards efficiency, utilities and consumers can share gains
- More complex to design

5: Performance-based regulation
- Lowers regulatory burden for coops and PUC
- Affords more flexibility for coops
- PUC maintains ability to step in

6: Lighter PUC regulation
The Project Team selected four regulatory frameworks for each county, combining models to provide synergies.

**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

**Unique characteristics and challenges of the State**

**Inputs from the stakeholders**

- Achieves State energy goals
- Minimize consumer costs
- Enable competitive distribution system
- Aligns stakeholder interests, reduced conflicts of interest

**Service reliability**

- Legal & technical feasibility
- Regulatory requirements
- Risks
- Potential for stranded costs
- Impact on DERs
- Ensure utility financial health
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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Costs</th>
<th>Time</th>
<th>Legal changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcomes-based PBR</strong></td>
<td>Costs associated with transition, no long-term additional costs</td>
<td>&lt; 2 years</td>
<td>No legal changes needed because PBR falls under existing PUC legal authority</td>
</tr>
<tr>
<td><strong>Conventional PBR + Light HERA</strong></td>
<td>Costs associated with transition, long-term additional costs for HERA entity</td>
<td>Staggered implementation over 3 years for PBR then Light HERA</td>
<td>No legal changes needed for Conventional PBR or Light HERA</td>
</tr>
<tr>
<td><strong>Hybrid</strong></td>
<td>Significant long-term costs for implementation and operation of IGO, DSPP</td>
<td>Staggered implementation over 4+ years for PBR then IGO and DSPP</td>
<td>No legal changes needed for Outcomes-based PBR Legislation likely required for IGO and DSPP</td>
</tr>
</tbody>
</table>

### HERA

- **Costs**: Costs associated with implementation and operation of HERA entity
- **Time**: ~ 2 years
- **Legal changes**: HERA already authorized by law

### IGO

- **Costs**: Significant costs for implementation and operation of IGO
- **Time**: ~ 2 years
- **Legal changes**: Legislation likely required for IGO

### Lighter PUC regulation

- **Costs**: Minor regulatory costs to change regulatory framework
- **Time**: < 1 year
- **Legal changes**: 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

<table>
<thead>
<tr>
<th>Alternative regulatory model</th>
<th>Honolulu County</th>
<th>Hawaii County</th>
<th>Maui County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement an Outcomes-based PBR model</td>
<td>↓ -2.1%</td>
<td>↓ -4.8%</td>
<td>↓ -2.2%</td>
</tr>
<tr>
<td>Implement a Conventional PBR + Light HERA model</td>
<td>↓ -2.2%</td>
<td>↓ -4.4%</td>
<td>↓ -1.9%</td>
</tr>
<tr>
<td>Implement Hybrid Model</td>
<td>↓ -0.4%</td>
<td>↓ -9.2%</td>
<td>↓ -2.2%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Alternative regulatory model</th>
<th>Kauai County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to a Lighter PUC Regulation</td>
<td>↓ -0.8%</td>
</tr>
<tr>
<td>Establish a HERA model</td>
<td>0.0%</td>
</tr>
<tr>
<td>Establish an IGO model</td>
<td>↓ -0.2%</td>
</tr>
</tbody>
</table>
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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.

<table>
<thead>
<tr>
<th>Rate design</th>
<th>Single-county model</th>
<th>Multi-county model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiered rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclining block rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Declining block rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher fixed charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-varying rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-of-Use rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real-Time Pricing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Peak Pricing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Utilities’ management and operations</th>
<th>Single-county model</th>
<th>Multi-county model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to meet state energy goals</td>
<td>-</td>
<td>better</td>
</tr>
<tr>
<td>Maximize consumer cost savings</td>
<td>-</td>
<td>better</td>
</tr>
<tr>
<td>Enable a competitive distribution system</td>
<td>-</td>
<td>better</td>
</tr>
<tr>
<td>Address conflicts of interest in energy resource planning, delivery, and regulation</td>
<td>better</td>
<td>-</td>
</tr>
<tr>
<td>Align stakeholder interests</td>
<td>better</td>
<td>-</td>
</tr>
</tbody>
</table>
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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.
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.
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