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Description:	6.B Grace Relf, Hawaii PUC
Filer:	Raquel Kravitz
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Incentivizing Improved Interconnection and Use of Distributed Resources: Hawaii's Experience

Grace Relf, Hawaii Public Utilities Commission
Workshop on Clean Energy Interconnection
May 9, 2023

Presentation Roadmap

- The context in Hawaii
- Hawaii's PBR framework
 - Structure
 - Interconnection incentives
 - Electrification of transportation metrics
- Key takeaways



Setting the stage: System Needs

- Resilience is key
- Flexibility becomes increasingly important with renewable deployment
- Challenges in replacing aging fossil fuel capacity with delayed renewables



Setting the stage: State Policy

- 100% carbon neutrality goal by 2045
- Climate change emergency declaration
- Renewable Portfolio Standard of 100% by 2045



Performance- Based Regulation Guiding Principles

Goal	Priority Outcome	
Enhance Customer Experience	Traditional	Affordability
		Reliability
	Emergent	Interconnection Experience
		Customer Engagement
Improve Utility Performance	Traditional	Cost Control
	Emergent	DER Asset Effectiveness
		Grid Investment Efficiency
Advance Societal Outcomes	Traditional	Capital Formation
		Customer Equity
	Emergent	GHG Reduction
		Electrification of Transportation
		Resilience

Hawaii's PBR Framework

Revenue Adjustment Mechanisms

- A 5-year **multi-year rate plan**
- Allowed revenues adjusted annually for **inflation** and a “**customer dividend**”
- An **Exceptional Project Recovery Mechanism** to for extraordinary projects

Performance Mechanisms

- **New Performance Incentive Mechanisms (PIMs)**
- **Shared savings mechanisms** for cost-effective procurement of renewable energy generation and grid services
- Portfolio of **reported metrics** and **scorecards**

Pilot process

- An **expedited review for pilot projects** to incent innovation

Safeguards

- An **Earnings Sharing Mechanism** to protect the utility and customers from excessive earnings or losses
- A **Re-Opener** mechanism that allows the PUC to examine all or parts of the PBR framework

Relevant Performance Incentive Mechanisms

PIM	Objective	Potential Reward	Penalty
RPS-A	Accelerate achievement of Renewable Portfolio Standards (RPS) goals	<ul style="list-style-type: none"> • \$20/MWh 2021-2022 • \$15/MWh 2023 • \$10/MWh afterwards 	<ul style="list-style-type: none"> • \$20/MWh for every MWh under the RPS
Grid Services	Expedite the acquisition of grid services capabilities from DERs	<ul style="list-style-type: none"> • \$1.5 million 	<ul style="list-style-type: none"> • No penalty
DER Interconnection Approval	Improve customers' experience by incenting faster interconnection times for DER systems <100 kW	<ul style="list-style-type: none"> • \$3 million 	<ul style="list-style-type: none"> • Maximum penalty is \$900,000
Grid-Scale Interconnection	Speed up and reduce costs for grid-scale interconnection	<ul style="list-style-type: none"> • Based on speed of interconnection study & net energy potential 	<ul style="list-style-type: none"> • Based on delay time & net energy potential

DER Interconnection Approval PIM Structure

- Metric: Average # of days within HECO's control to energize DERs

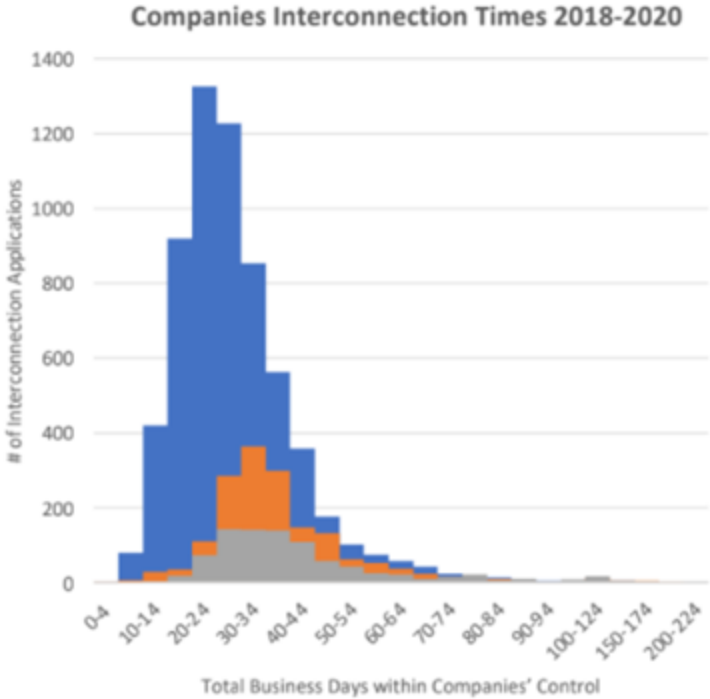
<u>[D&O 37507] Table 7: Interconnection Approval PIM Reward Targets</u>					
<i>*Targets shown in average number of business days with outliers excluded</i>					
Thresholds and Potential Reward Level	2021	2022	2023	2024	2025
TIER 1: +\$1,050,000 HECO +\$225,000 HELCO/MECO	21	18	15	12	9
TIER 2: +\$700,000 HECO +\$150,000 HELCO/MECO	24	21	18	15	12
TIER 3: +\$350,000 HECO +\$75,000 HELCO/MECO	27	24	21	18	15

<u>[D&O 37507] Table 8: Proposed Interconnection Approval PIM Penalty Thresholds</u>					
<i>*Targets shown in average number of business days with outliers excluded</i>					
Proposed Thresholds and Potential Penalty Level	2021	2022	2023	2024	2025
TIER 1: -\$315,000 HECO -\$67,500 ¹⁹ HELCO/MECO	42	39	36	33	30
TIER 2: -\$210,000 HECO -\$45,000 HELCO/MECO	39	36	33	30	27
TIER 3: -\$105,000 HECO -\$22,500 HELCO/MECO	36	33	30	27	24



From Theory to Practice

Companies' 2018-2020 DER Interconnection Data

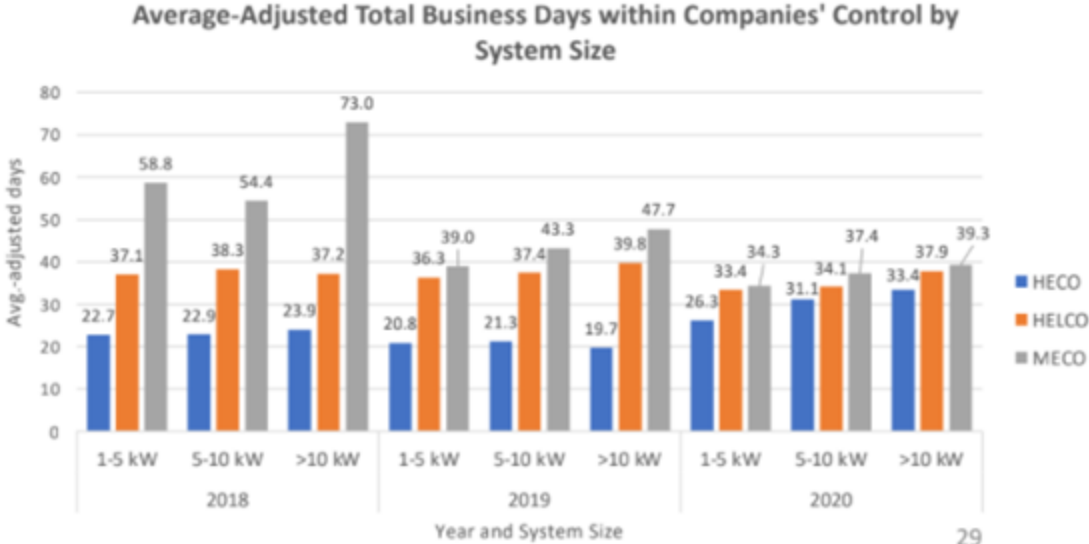


* this graph excludes 7 outliers from all three companies whose interconnection applications took >=225 days.



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Adj-Avg Total Business Days w/in Companies' Control	HECO	HELCO	MECO
2018	23.01	37.55	56.60
2019	20.95	37.28	43.62
2020	29.72	34.49	37.47
% Improvement			
2018 -> 2019	9%	1%	23%
2019 -> 2020	-42%	7%	14%



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DER Interconnection Approval PIM Performance

- Tier 1 reward target was **< 18 days** to interconnect
- **In 2022, HECO is claiming \$3,000,000 in rewards for this PIM**
 - This is still under review

HECO		MECO		HELCO	
Adjusted Average	Applications Executed	Adjusted Average	Applications Executed	Adjusted Average	Applications Executed
16.8	2,216	10.0	539	11.4	638

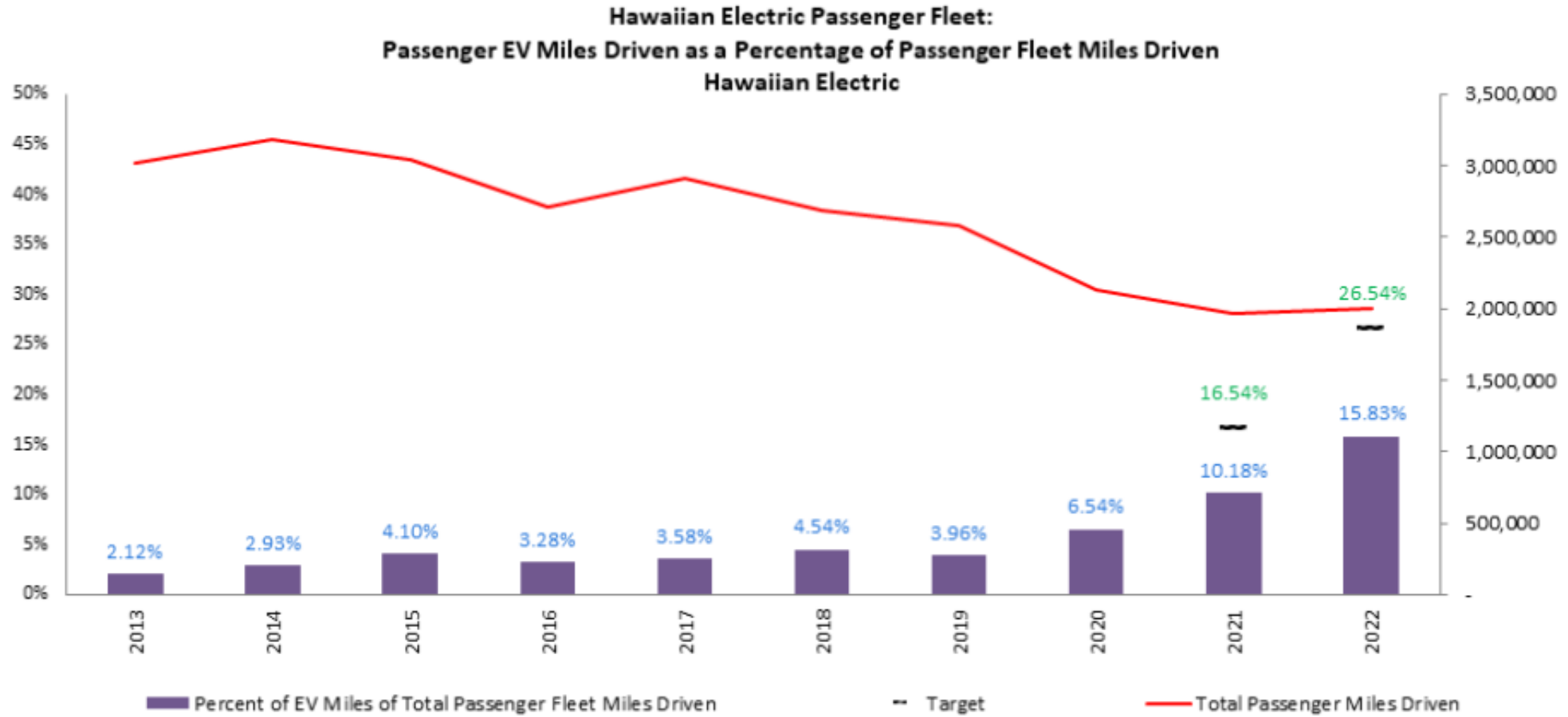


Electrification of Transportation (EoT) - Metrics

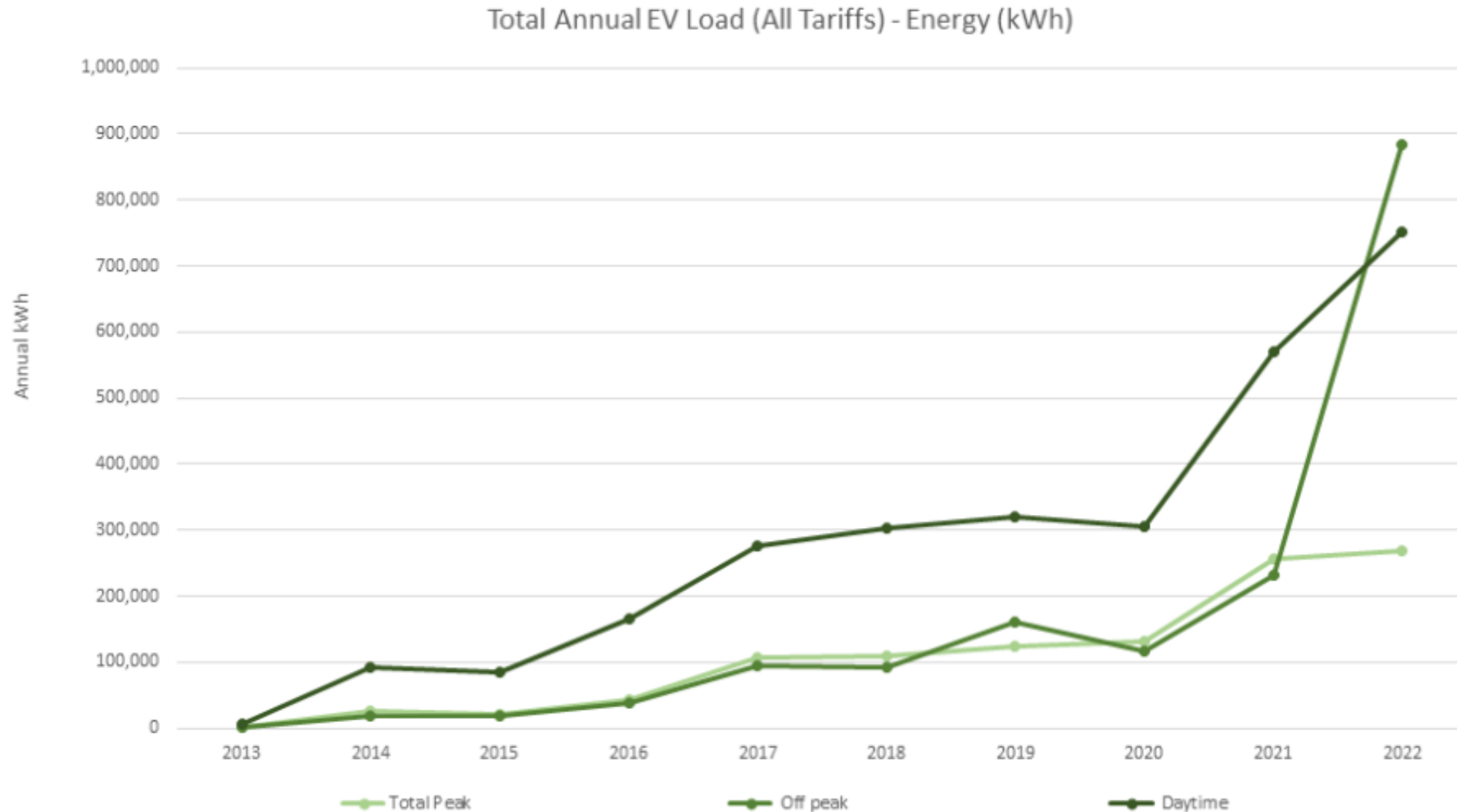
- HECO's fleet electrification
 - Target of 10% annual increase in light duty EV miles driven
- Measured and estimated EV energy and demand by time period
 - Target of total annual EV load increase & decrease in proportion of load during peak
- EV count
 - Target of meeting forecasted EV count
- Ride share fueling hubs



EoT - Progress



EoT - Progress



Key Takeaways

- Well-designed PBR can help reduce utility capital bias
- Policy and regulatory prioritization outside of PBR are also key
- PIMs can be a key driver for promoting deployment of demand-side resources
- PBR mechanisms should aim for continuous learning and improvement
 - Collect data early and often
- Track our progress!
 - <https://www.hawaiianelectric.com/about-us/performance-scorecards-and-metrics>





Mahalo!

Grace.e.relf@hawaii.gov

References:

- HECO 2022 Sustainability Report:
 - <https://www.hawaiianelectric.com/clean-energy-hawaii/sustainability-report>
- Hawaii's PBR Framework; Docket No. 2018-0088
 - <https://puc.hawaii.gov/energy/pbr/>
 - [Order approving the PBR Framework](#)
 - [Order finalizing PIMs & metrics](#)
 - [Order establishing more PIMs](#)
- HECO Performance Scorecards and Reported Metrics
 - <https://www.hawaiianelectric.com/about-us/performance-scorecards-and-metrics>

