



# Hawaii's Energy Storage Overview

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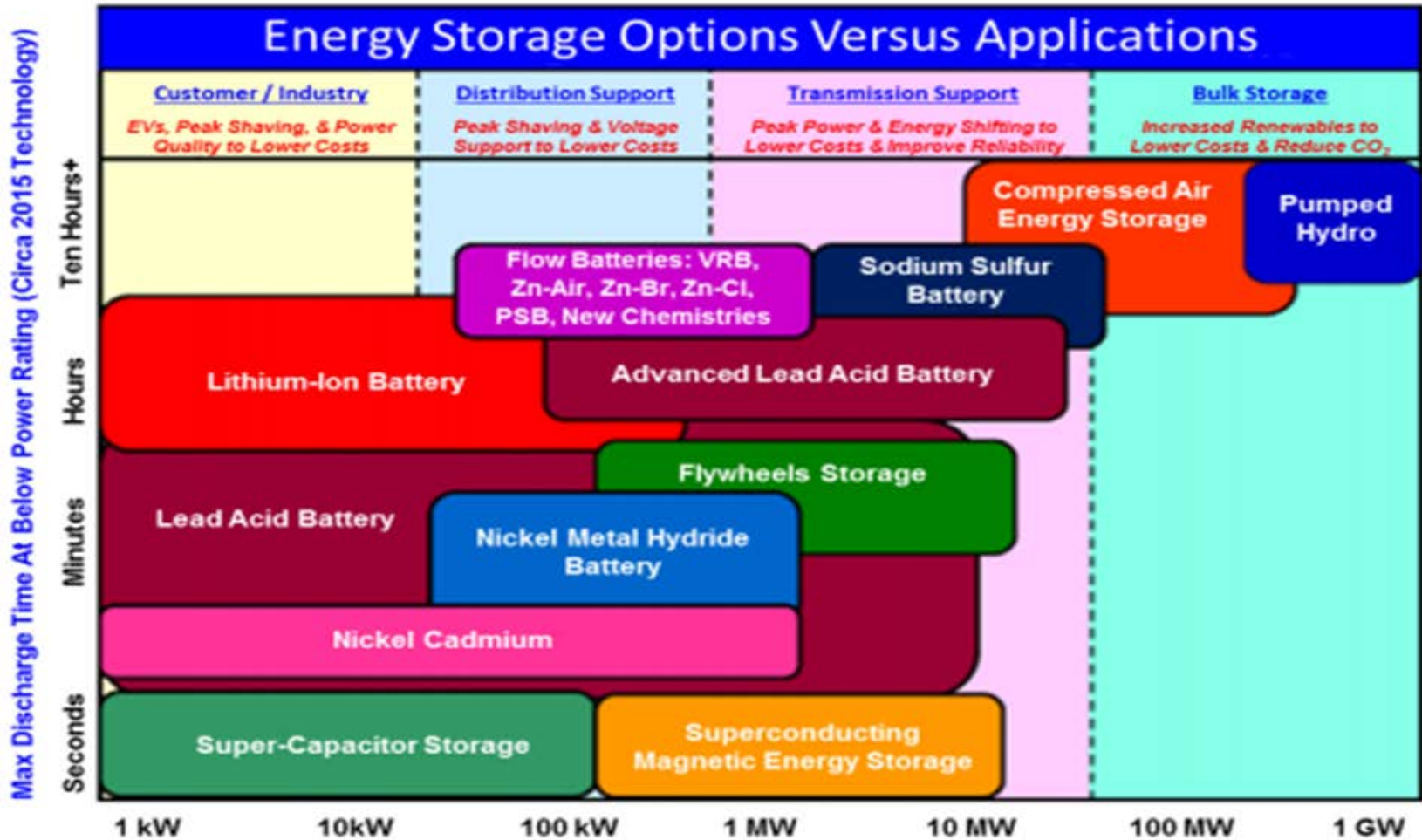
## ***Alaska Energy Storage Workshop***

*Day 1: Session 1: State of Charge – Current Technology*

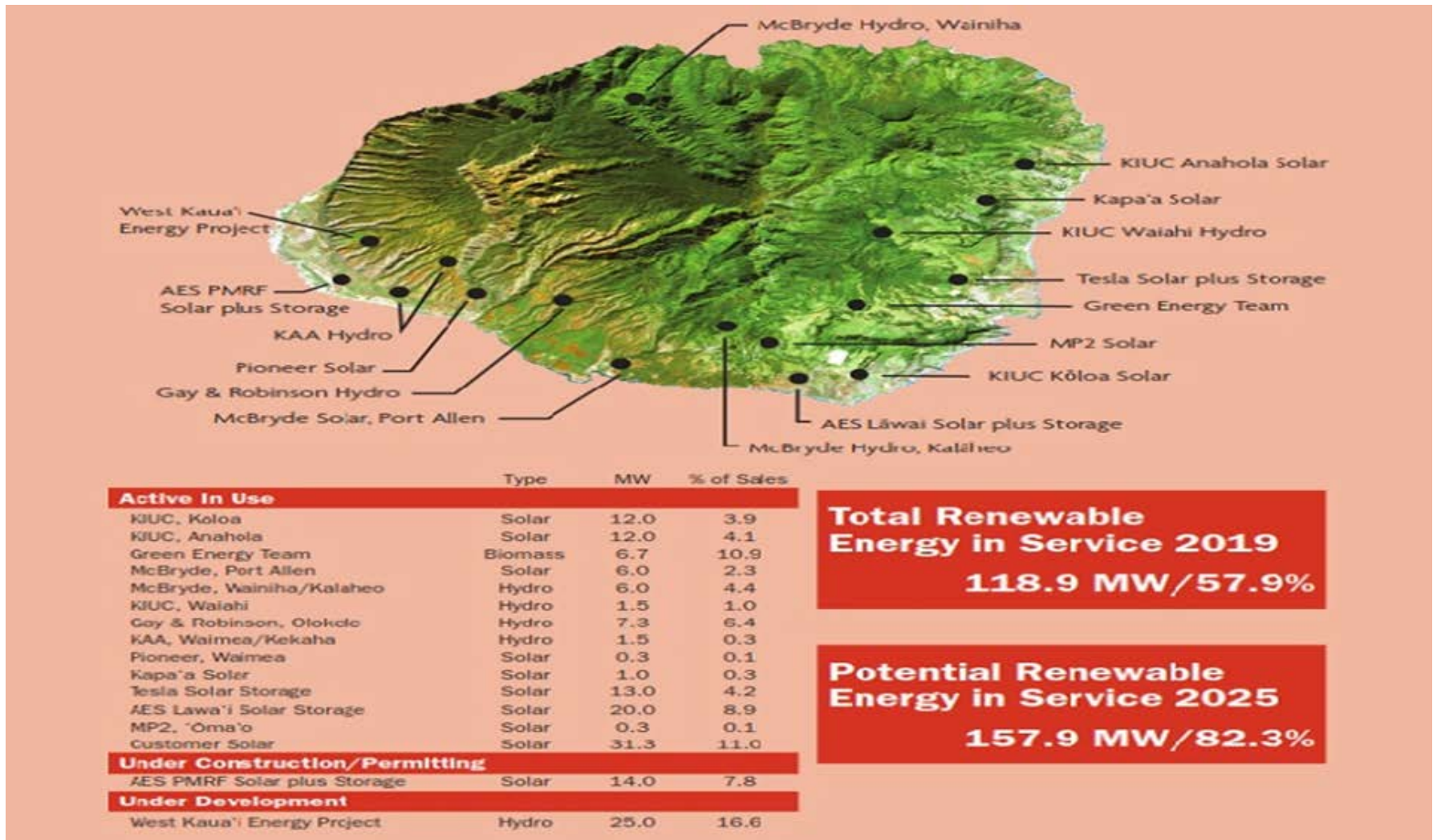
*Tuesday, January 12, 2021*

# Energy Storage Technologies by Discharge Time, Size, and Use

(Source: Electric Power Research Institute)

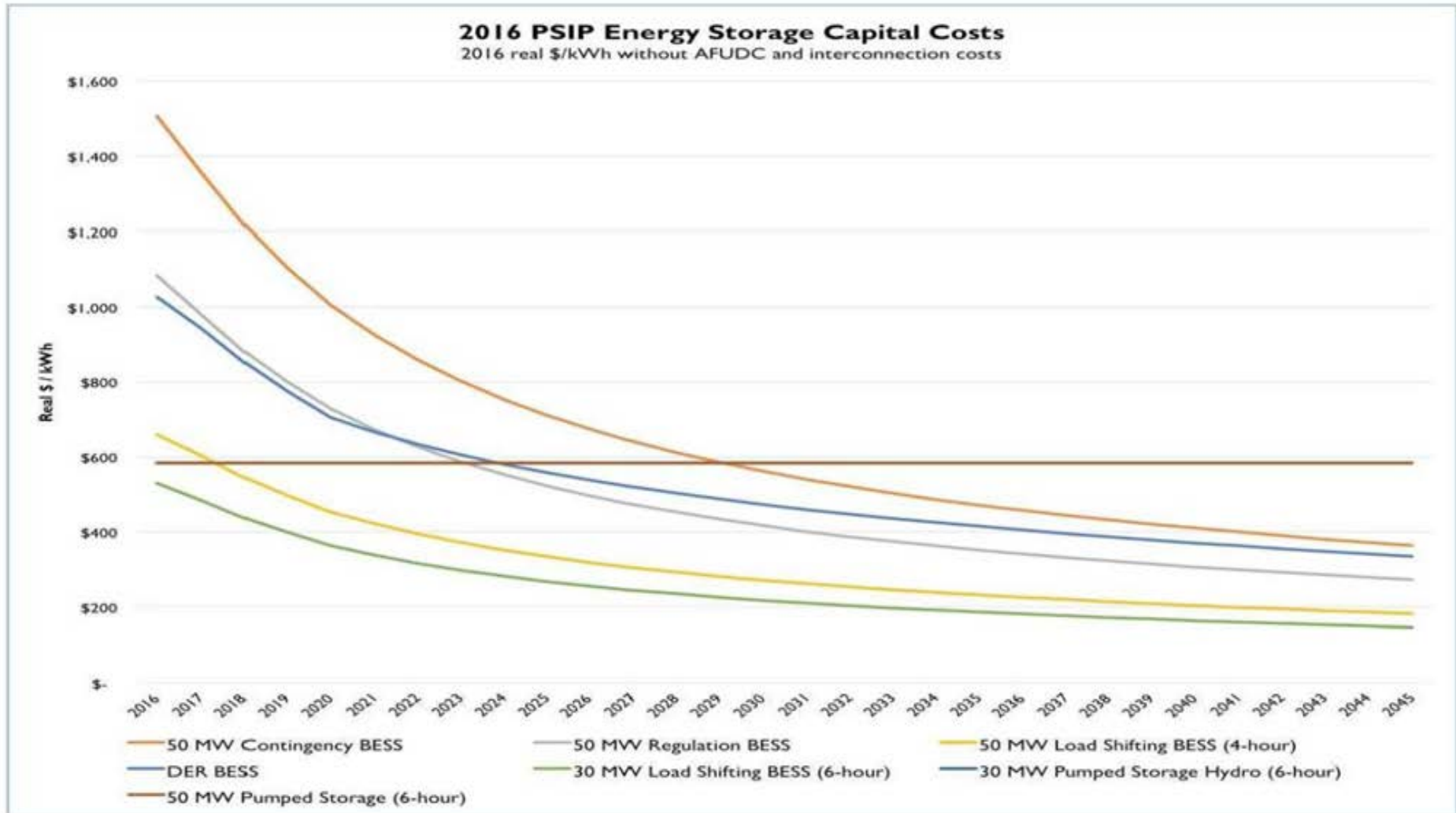


# Hawaii – Energy Storage Policies, Regulations & Market



## Kauai Island Utility Cooperative (KIUC) Current & Under Development Generation & BESS

# Energy Storage Costs



# Oahu Near-Term Resource Plan (Source: Hawaiian Electric Company)

Year	O'ahu Resource Plan
2017	72.3 MW DG-PV
2018	41.2 MW DG-PV 6 x 8.14 MW Schofield Plants 24 MW Na Pua Makani Wind 109.6 MW Grid-Scale PV 10 MW Grid-Scale Wind (CBRE) 15 MW Grid-Scale PV (CBRE)
2019	45.5 MW DG-PV 70 MW Contingency FFR I 20 MW West Loch PV
2020	40.5 MW DG-PV 30 MW Grid-Scale Wind 180 MW Grid-Scale PV 100 MW 1-hour Regulation BESS
2021	55.6 MW DG-PV Convert H8 & H9 to synchronous condenser

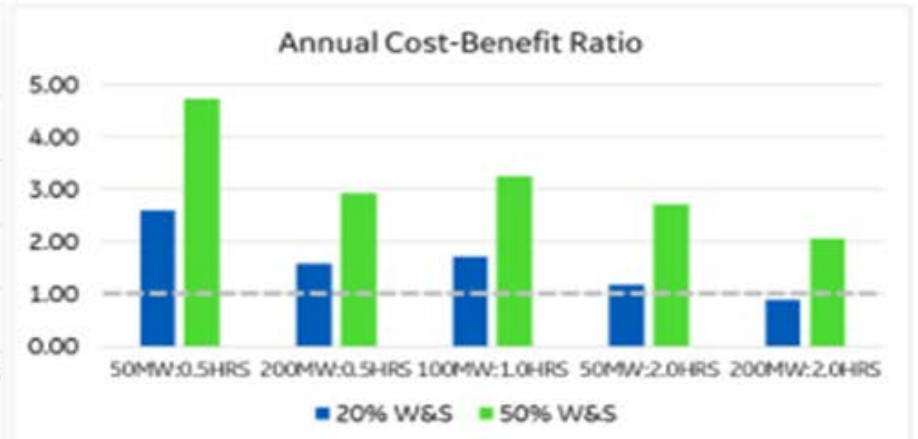
# HECO Solar + BESS projects approved by the Hawaii PUC

(Source: HECO website)

## APPROVED BY REGULATORS

Name	Island	Developer	Tech	Size	Estimated Completion	RPS % Points Contribution
Molokai Island Energy Project	Moloka'i (Kaunakakai)	Molokai New Energy Partners LLC	Solar + BESS	2.6 MW 15 MWh (BESS)	2020	0.1
AES Kuihelani	Maui (Central Maui)	AES Kuihelani Solar, LLC	Solar + BESS	60 MW 240 MWh (BESS)	2021	1.9
AES Waikoloa Solar, LLC	Hawai'i Island (Waikoloa)	AES Waikoloa Solar, LLC	Solar + BESS	30 MW 120 MWh (BESS)	2021	0.8
AES West Oahu Solar, LLC	O'ahu (West O'ahu)	AES West Oahu Solar, LLC	Solar + BESS	12.5 MW 50 MWh (BESS)	2021	0.4
Ho'ohana Solar 1, LLC	O'ahu (Kunia)	Hanwha Energy USA Holdings Corp (174 Power Global)	Solar + BESS	52 MW 208 MWh (BESS)	2021	1.4
Mililani I Solar, LLC	O'ahu (Mililani)	Mililani I Solar, LLC (Clearway)	Solar + BESS	39 MW 156 MWh (BESS)	2021	1.2
Waiawa Solar Power LLC	O'ahu (Waiawa)	Waiawa Solar Power LLC (Clearway)	Solar + BESS	36 MW 144 MWh (BESS)	2021	1.2
Hale Kuawehi Solar LLC	Hawai'i Island (Waimea)	Hale Kuawehi Solar LLC (Innergex)	Solar + BESS	30 MW 120 MWh (BESS)	2022	0.8

# Two Distinctive Policy Approaches



**Thank you!**



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