



Grid Integration Update Hearing

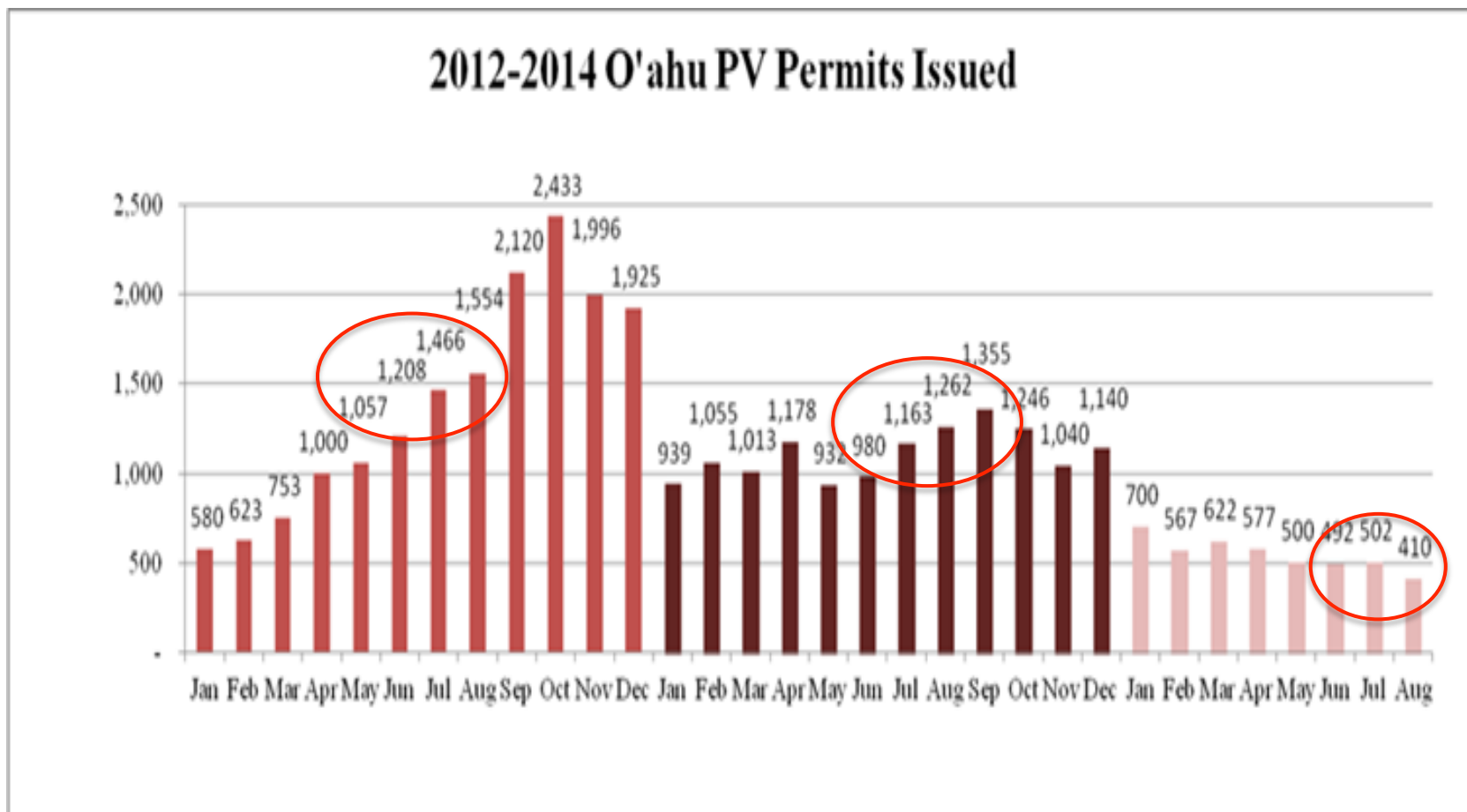
Hawaii State Legislature

Mark Duda, President
Hawaii PV Coalition

September 19, 2014

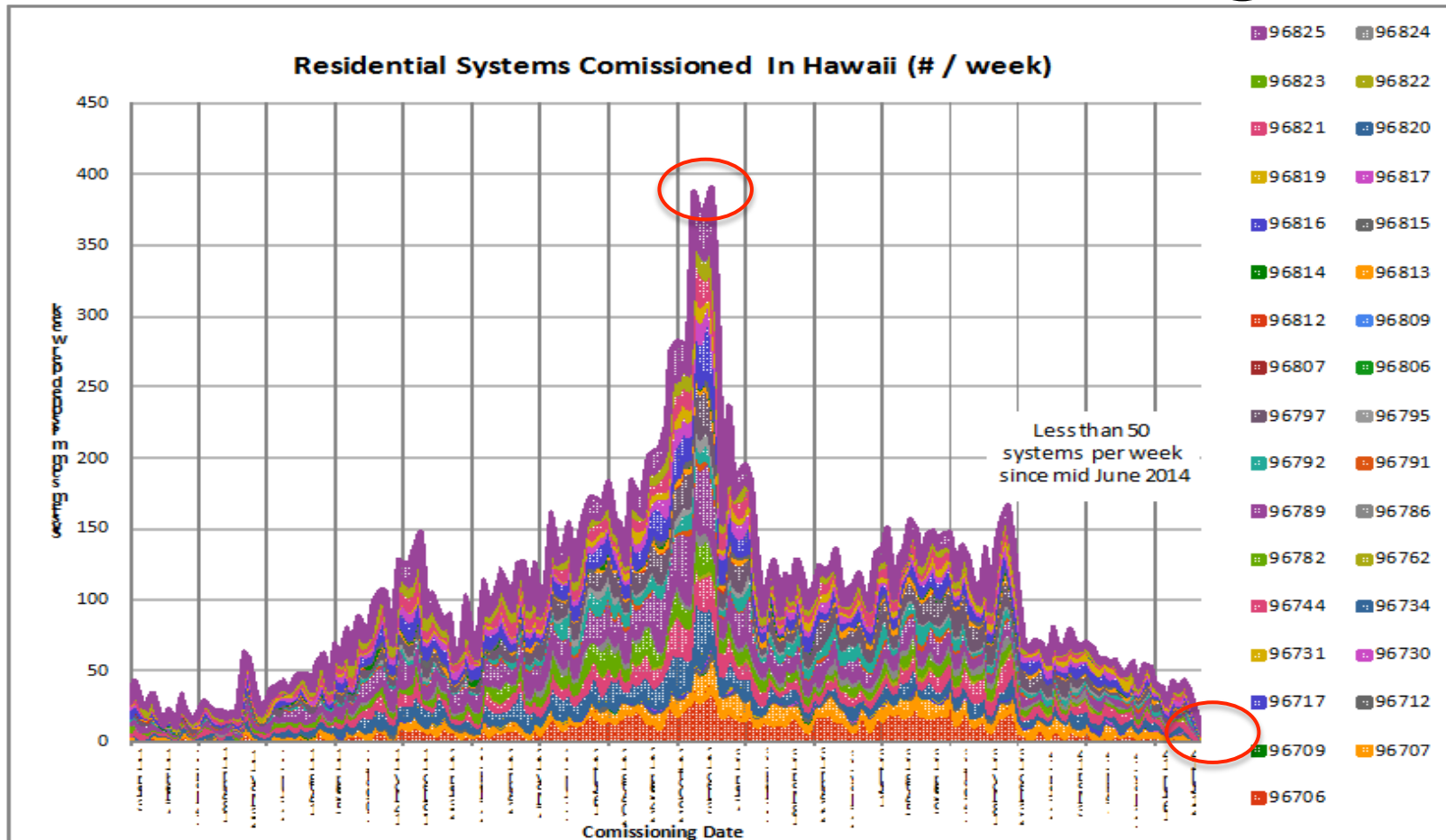


Declining Oahu Permits





An Even Better Indicator: Microinverter Commissioning





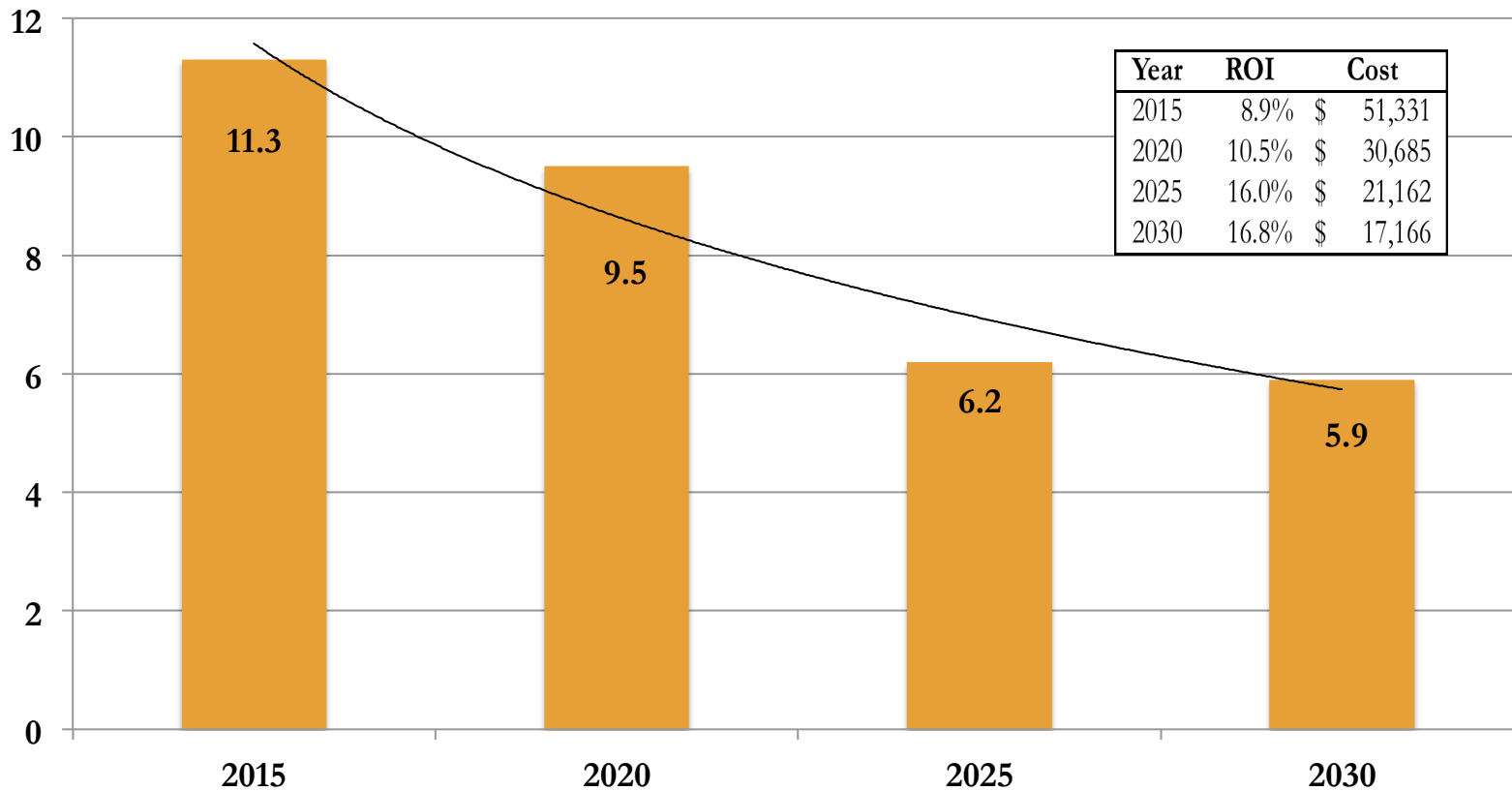
Penetration Limits Over Time

Date	Event	Limit	Utilities	Level	Peak/Min.
2001	NEM Statute Passed	0.50%	All	Grid	Peak
2008	NEM Docket 2006-0084	1.00%	All	Grid	Peak
2008	Negotiated Increase	3.0% to 4%	MECO/HELCO	Grid	Peak
2010	MECO/HELCO Proposed Moratorium	5%	MECO/HELCO	Grid	Peak
2010	Stipulated Agreement in 14h Docket	15%	All	Feeder	Peak
2011	D&O in 14h Docket	50%	All	Feeder	Minimum
2012	Unilateral Increase for under 10 kW	75%	All	Feeder	Minimum
2012-2013	Miscellaneous Policy Changes	$\leq 100\%$	All	Feeder	Minimum
2013	HECO New Policy	$<120\%$	HECO	Feeder	Minimum



Off-Grid PV Costs

Chart Shows Years Until Investment Fully Paid Off by Owner



Notes: Battery cost per kWh in the four years is \$500/\$325/\$200/\$200. PV cost per watt is \$3.50/\$1.50/\$1.00/\$0.85. Utility cost of power assumed to be \$0.357 in all years with no escalation factor. Assumes 2 full days of batteries and additional propane back up. PV system size is equivalent of 5 kW (i.e., 5.625 kW with half of power used during solar window and 80% round trip efficiency). Assumes no state tax incentive for storage and federal incentive only through end of 2016.