

California Net Metering 1, 2 and 3

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California PUC Background

- Regulates 70% of load, but uncertainty re CCAs
- Net metering (NEM) 1.0 customers grandfathered for 20 years – tiered rates
- NEM 2.0 customers on time-of-use (TOU) rates, grandfathering on old TOU periods, mid-day peaks
- New NEM customers on new TOU periods peaking 4-9pm summer weekdays, batteries allowed
- NEM 3.0 coming in 2019
- Frustrating rulemakings (DRP, IDER, SGIP, Rule 21)

Promise and Limits of Solar

- Renewable generation on-site, but . . .
- After aggregate rated capacity is over 15% of circuit daytime peak, study required
- “Duck Curve” impact on daytime rates
- Can’t add to NEM 1.0 systems
- Modules and inverters have limited room for more cost reduction
- Soft costs are not going down significantly

Holy Grail: Residential Solar + Storage



- Move solar energy to 4-9pm
- Back-up power
- Incentives and tax breaks
- Cost reductions

But, . . .

- Interconnection and permitting delays and costs
- SGIP cycling and design requirements
- No NEM 1.0 rationale
- Arbitrage based on changing TOU



Microgrids

- Non-export for easier interconnection
- Hawaii in the lead – 850 installed
- Potential to disconnect part time
- Potential to never operate in parallel, so no utility interconnection
- Ebay: 5.2 kWh used car battery, \$245/kWh



Over-the-Fence Rule

- Public Utilities Code 218(b) – “electrical corporation” does not include those generating for their own use and “use of or sale to not more than two” adjacent neighbors
- Excess from a home microgrid system could be sold to neighbors; charging neighbors’ EVs perhaps the easiest
- Three-home microgrid potential, sharing storage, solar and balance-of-system

Thanks!

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