Stored Energy - Reality Check
KIUC Battery Experience

2011-2012: Xtreme Power Advanced Lead Acid
   – 3 units, each rated 1.5 MW / 1.0 MWh
   – Installed for PV smoothing (50% of peak PV size)

2015: SAFT Lithium Ion
   – Total rating 6.0 MW / 4.6 MWh
   – Installed for PV smoothing (50% of peak PV size)

2017: Tesla Lithium Ion
   – Total rating 13 MW / 52 MWh
   – Installed for shifting PV energy to evening peak
KIUC Dispatch - 12/31/2015

73% solar penetration; 89% renewable
KIUC Battery Experience

• Views storage as a grid resource as opposed to tied to any one project, hence initial desire to own and operate
• Early struggles overcome by improved technology and counter-parties
• Still believe there is a large amount of performance and price risk in storage
• Storage still very expensive without ITC, and must be paired with a qualifying project to claim ITC
Solar+storage model for the future?

• SolarCity/Tesla project offers dispatchable solar at 13.9 cents per kWh
• First of its kind in the U.S., possibly the world
• Provides 13 MW of electricity for 4 hours after sundown during peak demand period
• Estimated online 1Q 2017
• Model of the future?