

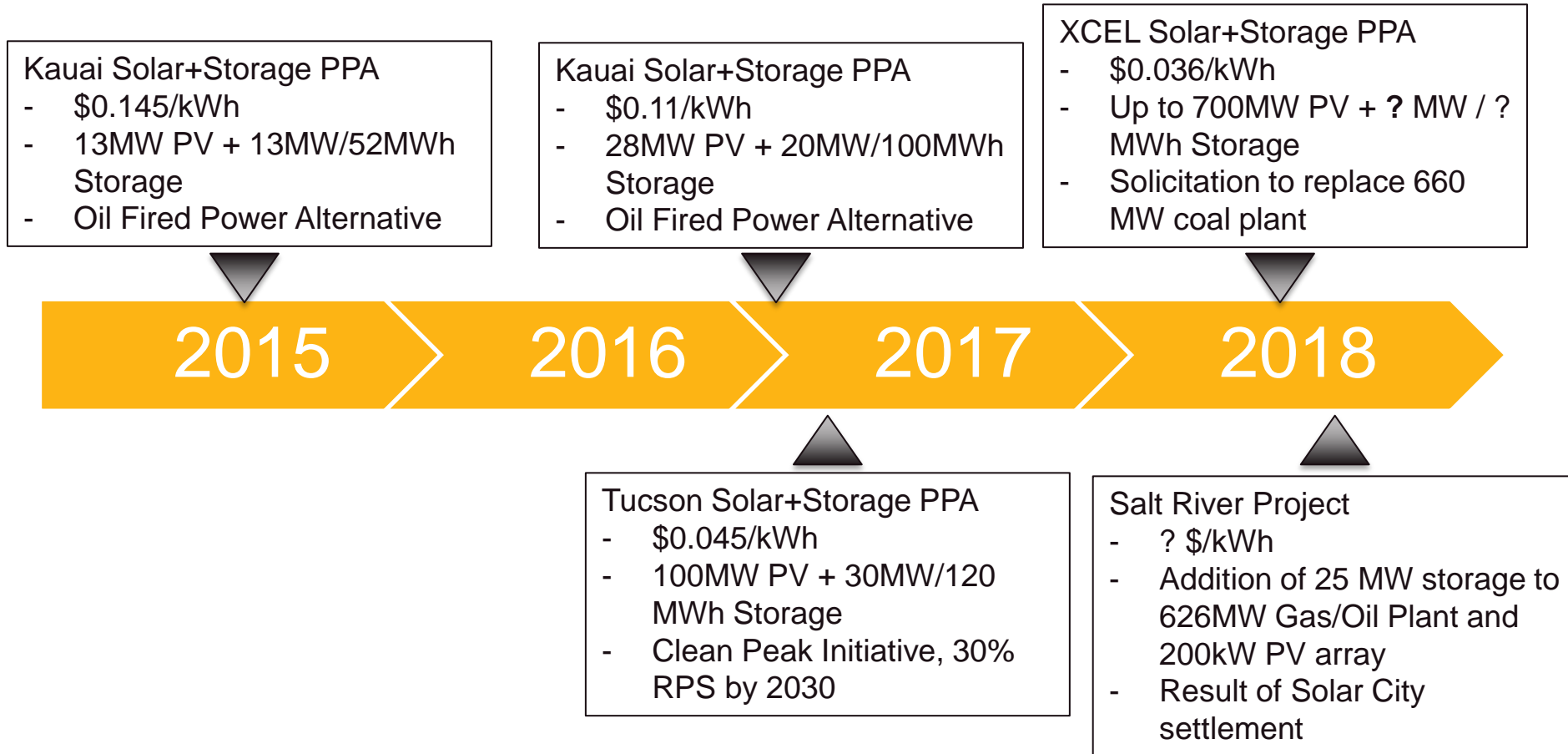
Exhibit to Agenda Item #4

Board Energy Resources & Customer Services Committee
Wednesday, April 4, 2018, scheduled to begin at 5:30 p.m.
Customer Service Center, Rubicon Room

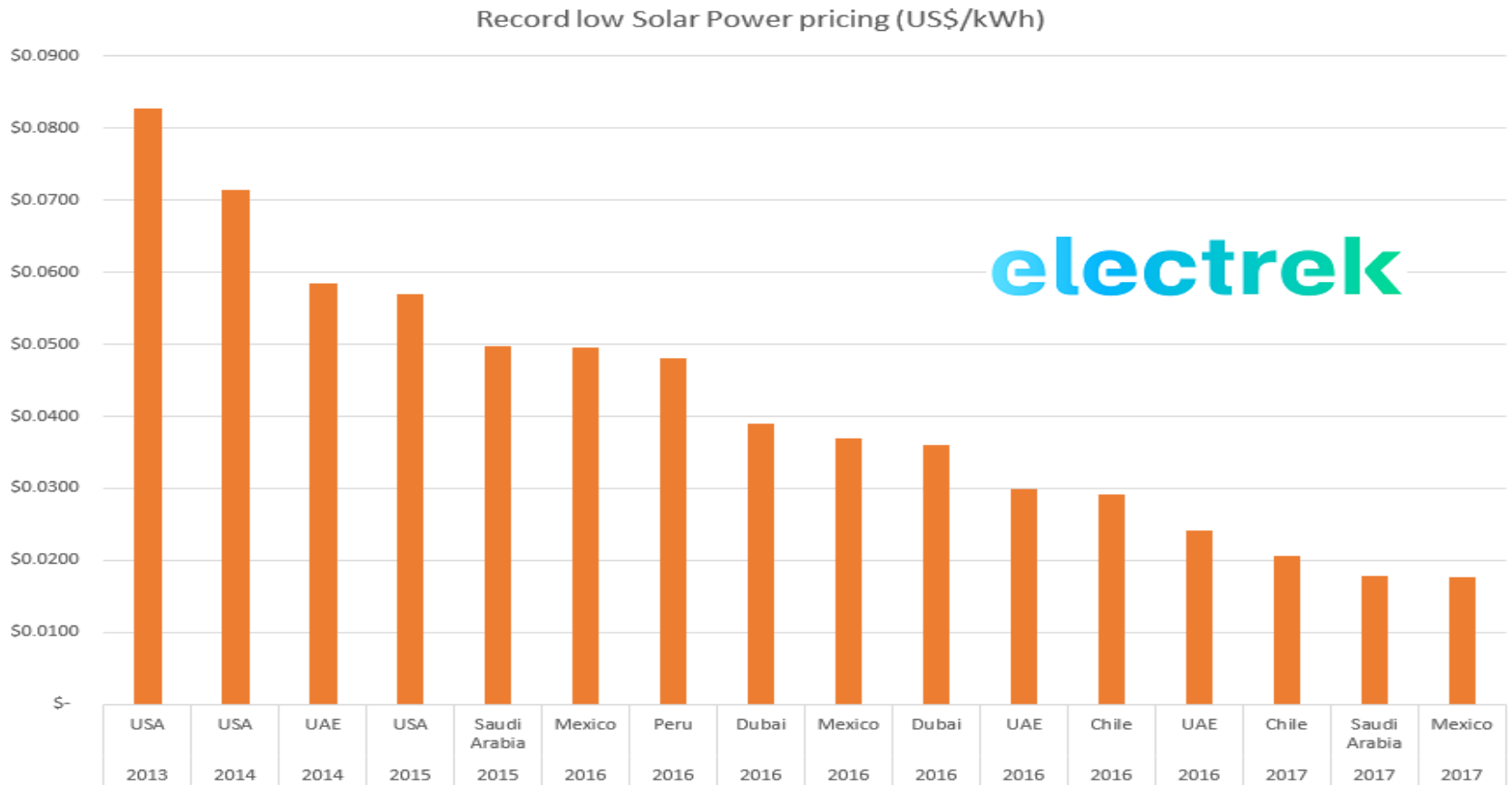
Agenda – Solar + Storage

- Industry Highlights
- Decoupling Storage from Solar
- Cost Trends
- Customer Sited Solar + Storage

Industry Highlights

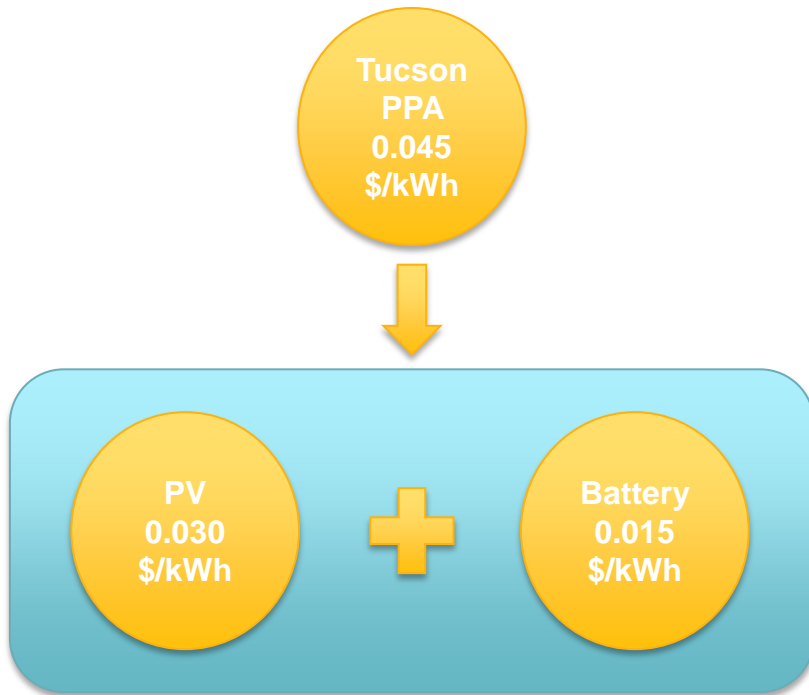


International Solar PPAs



Data Source: <https://electrek.co/2017/11/16/cheapest-electricity-on-the-planet-mexican-solar-power/>

Decoupling the Cost of Storage (Tucson)



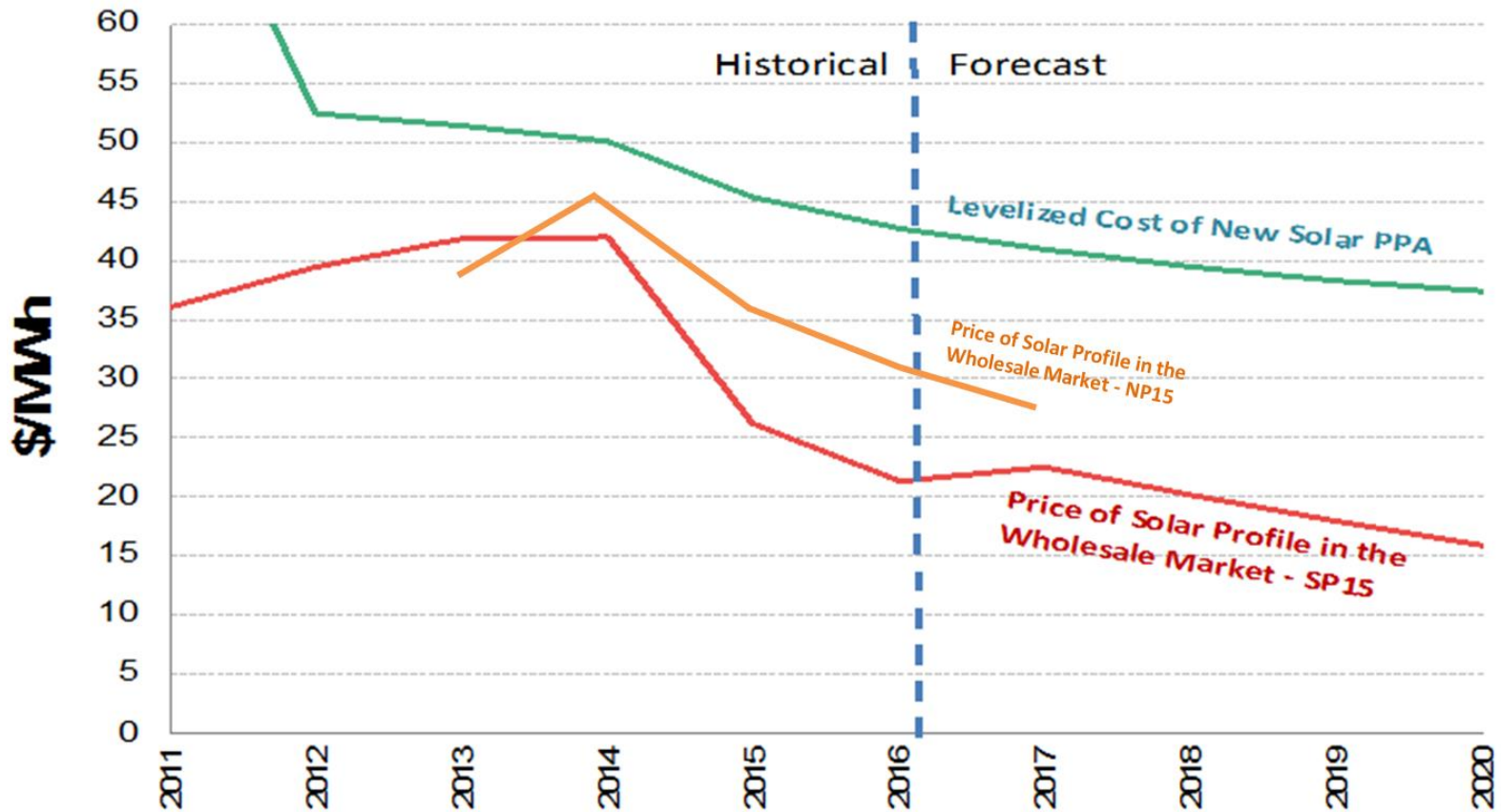
PV Generates up to 1000 MWh per day

The additional PPA price for storage is applied to all kWh generated. Not just what is stored.

The battery can store ~9.6% of the daily generation after losses.

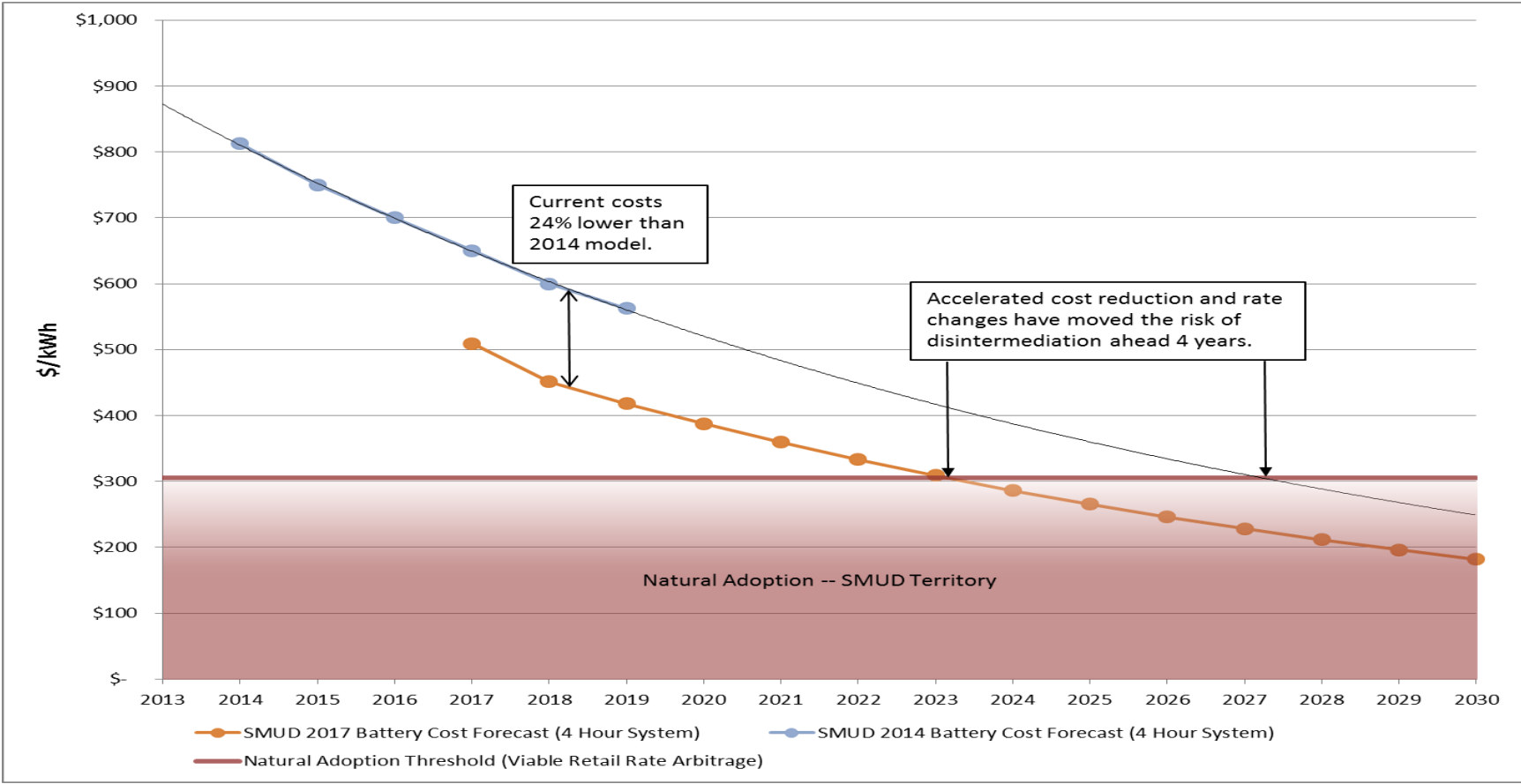
The decoupled cost of storage is $\$0.015/\text{kWh} / 9.6\% = \$0.156/\text{kWh}$

Forecasted Solar PPA Price



Data Source for Levelized cost of New Solar PPA and SP15: Bloomberg New Energy Finance
Data Source for NP15: CAISO

SMUD Forecasted Storage Price



Customer Sited Solar + Storage Case

- Dropping technology costs and rising rates could move the LCOE for self generation close to or potentially less than retail.

2023 Cost Example

- LCOE PV \$80/MWh
 - LCOE Home Battery \$150/MWh
-
- Solar + Storage LCOE \$0.23/kWh

2030 Cost Example

- LCOE PV \$70/MWh
 - LCOE Home Battery \$94/MWh
-
- Solar + Storage LCOE \$0.164/kWh

Energy Storage Phased Procurement Strategy (AB 2514)

