

Community Solar Success

What's New and What's Next for
Utility-Led Community Solar Programs



September 2018



Community
Solar Value
Project

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- The Community Solar Value Project was launched by Extensible Energy in 2015, supported by the US DOE SunShot, Solar Market Pathways Program and led by Extensible and Cliburn and Associates, and support from utilities and allies throughout the West.
- Today, CSVP is an independent collaboration that works with utilities, industry and community partners to increase the value and speed of community solar deployment, especially along four pathways:
 - process management
 - target marketing
 - strategic design, including solar plus
 - procurement and pricing partners
- Recently, ... focused on developing integration value solutions



Community
Solar Value
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www.communitysolarvalueproject.com

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How This Goes

- High-Value Community Solar Solutions!
- In-Sourcing and Out-Sourcing and Getting the Job Done
- The Vision Thing
- Solar Double-Plus
- The Next Wave: Helping C/I Customers
- Discussion



Community Solar Value Project

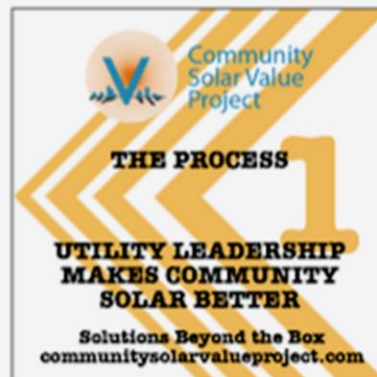
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Solutions

[Intro](#)[Process](#)[Design](#)[Procurement](#)[Marketing](#)[Solar Plus](#)[Assessment](#)

Here we introduce a solutions-oriented process for utilities to follow in developing a community solar program plan. First, a report in presentation format titled **Community Solar: A Brief Guide to Utility Program Design** summarizes lessons-learned and introduces the planning module; it is based on a one-day training/support module; and it includes a **Contact** page. Second, we introduce an **archive** of community solar program design process and planning diagrams. This supports CSVP's research and provides utility planners review various planning processes for ideas on how to customize their own. CSVP's own process diagram highlights interdepartmental collaboration and opportunities for solar-plus integration. In working with utilities of all kinds, we have found that engaging other staff and stakeholders in your process is a top recommendation. A CSVP **expanded blog-post** offers practical tips and resources for addressing collaboration needs. A brief set of annotated resources on collaboration (aka, *silo-busting*) is included. Practical tips and case studies for community solar program design are captured in two **webinars**, which are archived with downloadable slides, for easy review.



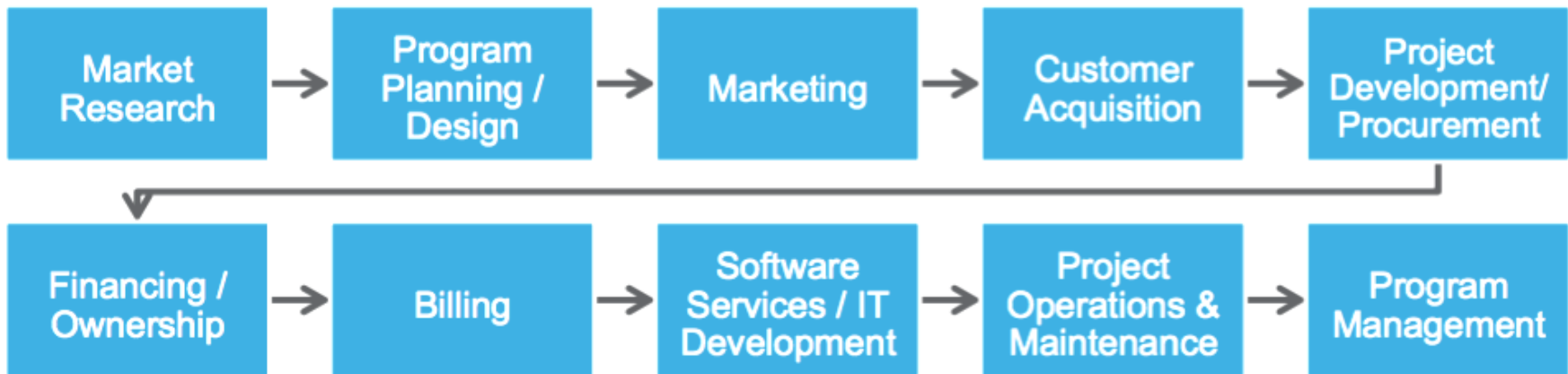
<< [Solutions](#) >>

Address Your Questions in the (Dis)Order In Which They Occur

- Presentation-based reports
- Conventional guides
- Great webinars with downloads
- Blogs that have details & links
- RFP library, case studies & more



The Timeline is One Clue to Your Outsourcing Needs



Benchmarks:

1. 12 to 18 months for most solar projects, from draft RFP to construction
2. Financing delays are common with customized projects; plan ahead
3. 4 to 6 months from marketing launch to reach 70 to 85% commitment
4. 12+ months from marketing launch for most utilities to reach full subscription
5. Billing/software may be a drag on the planning process if issues arise
6. Continued program support will not be costly, but it is important

Key Considerations: Expertise + Bandwidth

Program Designer/Manager

- Coordinates cross-departmental team
- Coordinates external stakeholders
- Collects initial research; outlines plan
- Works across departments and leads GAP analytics to finalize the program plan
- Member of procurement team/s
- Leads budget coordination and reporting

Marketing Manager

- Leads market research & segmentation
- Participates in iterative cross-departmental plan
- Leads development of program offer/s
- Leads development of marketing materials
- Develops plans for customer acquisition and care
- Leads consumer service and sales training

Resource Manager

- Coordinates with...
- planners
- Provides
- Leads so
- coordinat
- Oversees
- Oversees

Business and

- Advises on
- Resolves c
- Coordinate
- Oversees b

IT Manager

- customer acquisition tools
- P analysis and other economics
- ware to support marketing and
- ing billing system modifications
- budgetary support

CPA Firm

- ing IRS, SEC, and FERC

- ing state policy, guidelines
- ement plans, contracts
- PA and offer development
- ptability of marketing

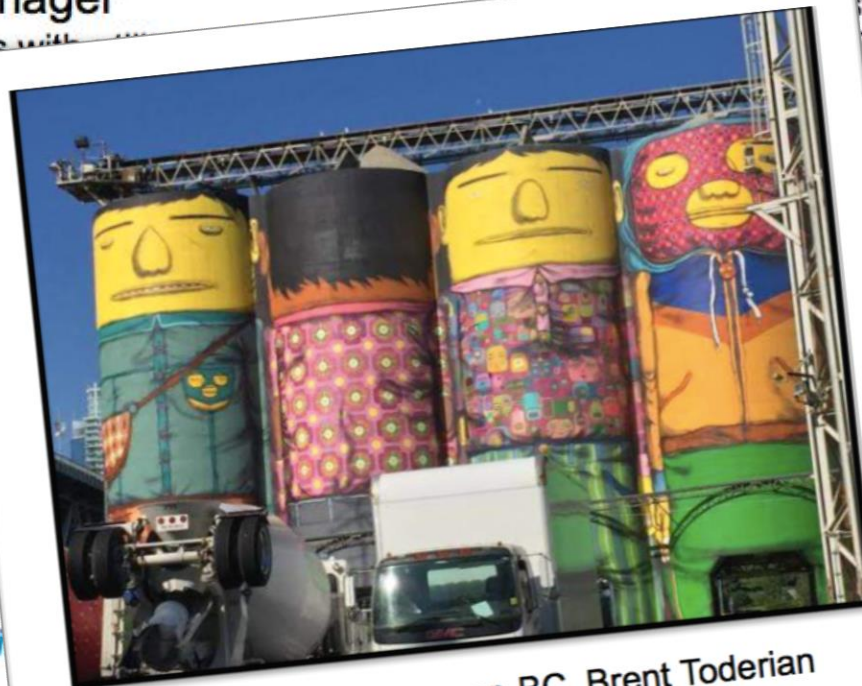


Photo: Silos in Vancouver, BC, Brent Toderian

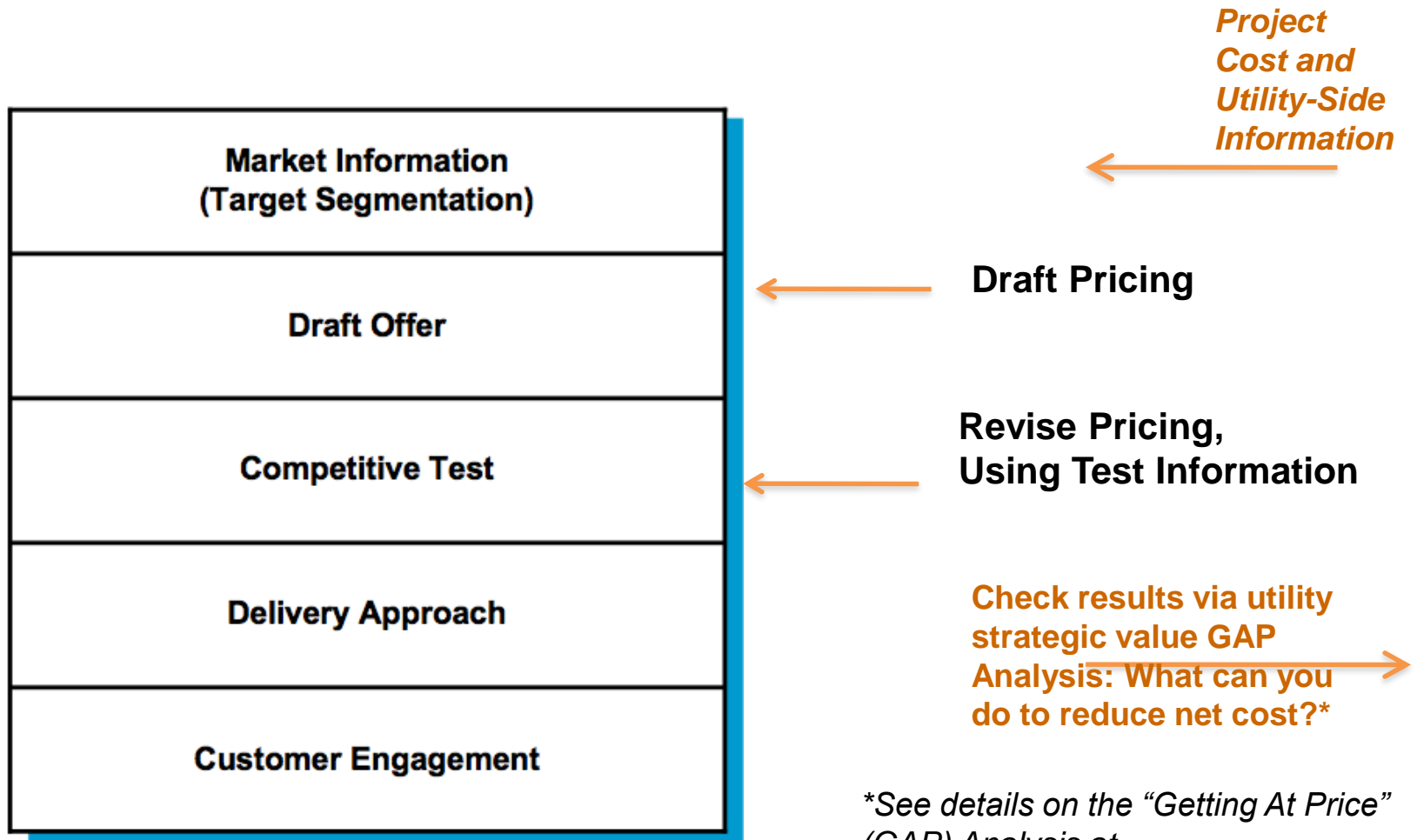
Each utility wi

es and responsibilities

Market Research: Engage Even If You Don't Lead It

- ✓ Assess market research needs
- ✓ Draw on outside resources
 - ✓ ... *question the questions*
 - ✓ ... *listen and learn*
- ✓ Draw on internal customer data
- ✓ Draft your customer offer ... iteratively
- ✓ Test it
- ✓ ... and engage thought leaders to develop your delivery approach
- ✓ Implement, monitor, improve

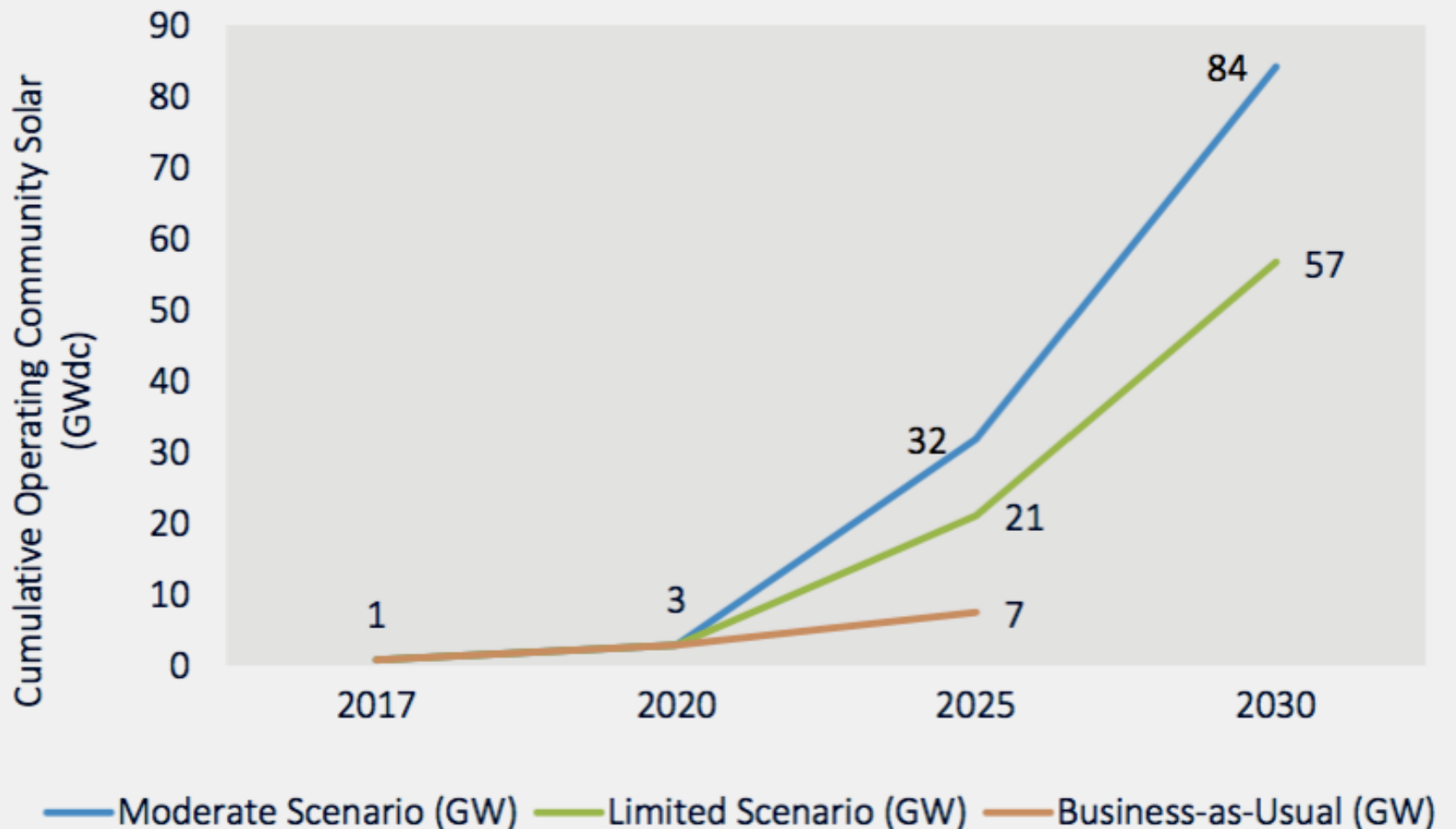
How Market Research and Economics Drive the Program Offer



*See details on the “Getting At Price” (GAP) Analysis at www.communitysolarvalueproject.com

<https://votesolar.org/policy/policy-guides/shared-renewables-policy/csvisionstudy/>

U.S. Community Solar through 2030: Market Potential

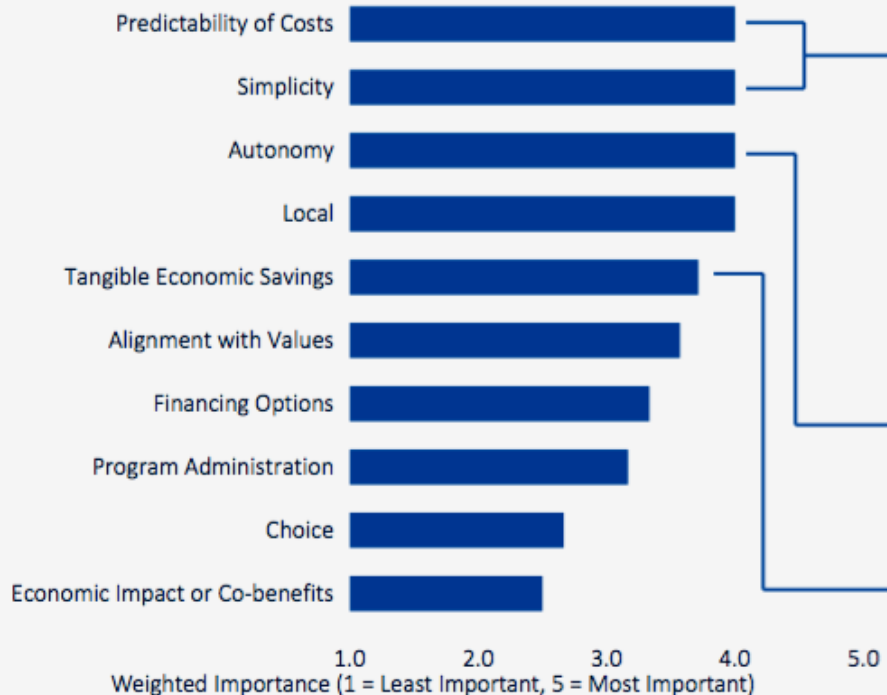


Source: GTM Research Wood Mackenzie

Vision Study: Lots of Good Stuff

Residential Subscribers Are Looking for Simplicity and Predictability of Costs

Average Score to "Rate the Importance of the Following Attributes to Potential Residential Customers"



Residential subscribers are primarily looking for predictable energy costs where the benefits and terms are simple to understand. Interviews indicate that:

- Rate escalators and double bills (one from utility and another from community solar operator) result in more difficult communication around savings
- Short-term contracts may be needed to attract renters, who may not be willing to sign up for 15- to 25-year contracts that include exit fees

Residential subscribers are looking for more independence in their supply and consumption of energy — something that a mature community solar subscription offering can increasingly provide

While not the primary motivator, residential subscribers still want savings on their energy bills. Community solar operators and lead generators indicate that 5%-15% savings is typically considered desirable

How GTM Sees It

PHASE I: Market Emergence

Community solar is still in pilot or early stages, driven primarily by early programs or virtual net metering programs with shifting compensation mechanisms. Community solar is proving itself to regulators, customers and investors.

PHASE II: Market Transition

Lessons from Phase I are incorporated. Community solar benefits from cost reductions through product innovations, streamlined program administration and investor trust. Improved program design and financing solutions encourage and increase LMI participation. Regulators, utilities and community solar stakeholders negotiate the benefits and the compensation for community solar.

PHASE III: Market Maturity

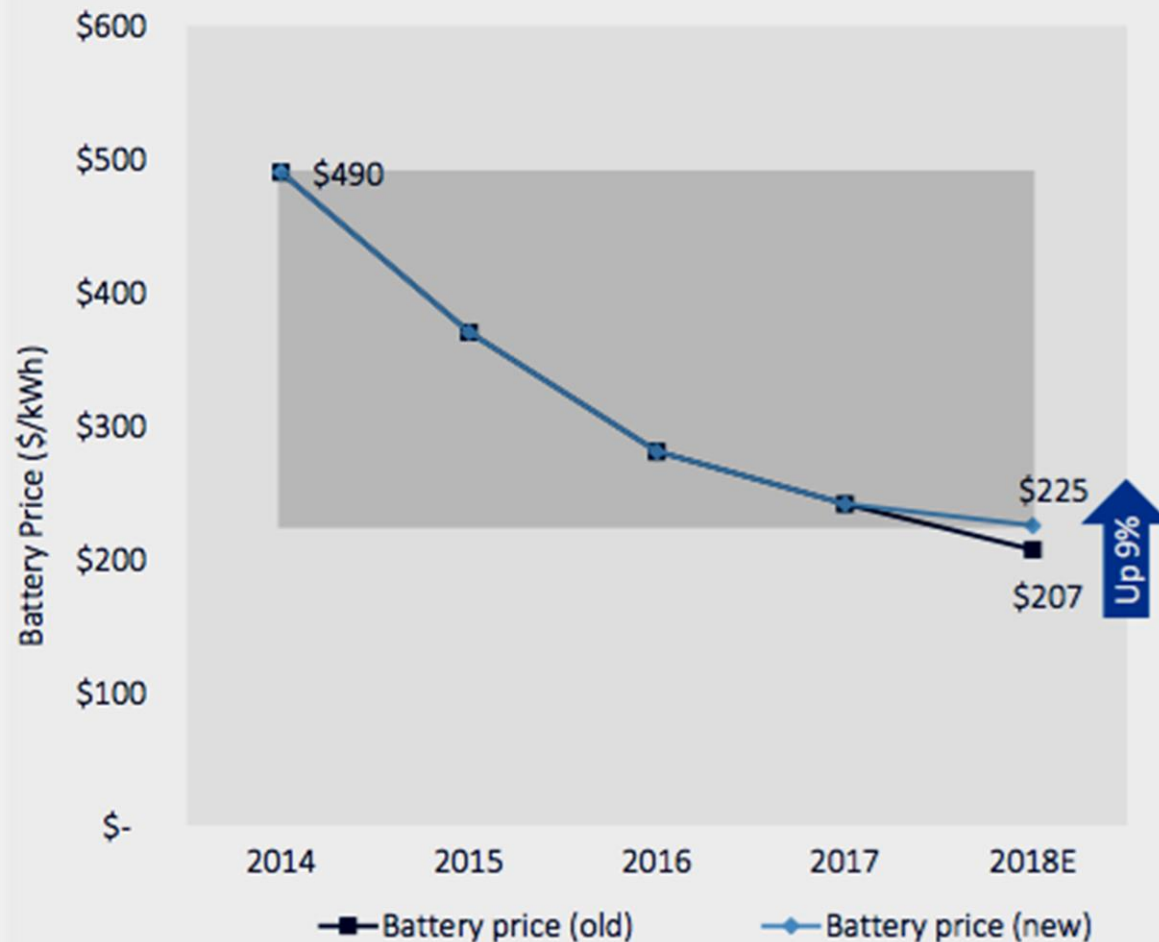
Community solar is an attractive offering to customers that delivers recognized benefits in the forms of cost savings, cost visibility, environmental attributes, grid value, local societal and economic support, and energy resiliency.

“Community solar ... can evolve into a portal for more holistic energy services such as energy efficiency, energy analytics and active load control for flexible demand. ... (It) also provides a physical location and equipment with which to pair other distribution infrastructure, including smart inverters and energy storage. These assets can be shared between the community solar operator and the grid operator to maximize community solar’s contribution.”

Source: Vote Solar, WM/GTM, July 2018

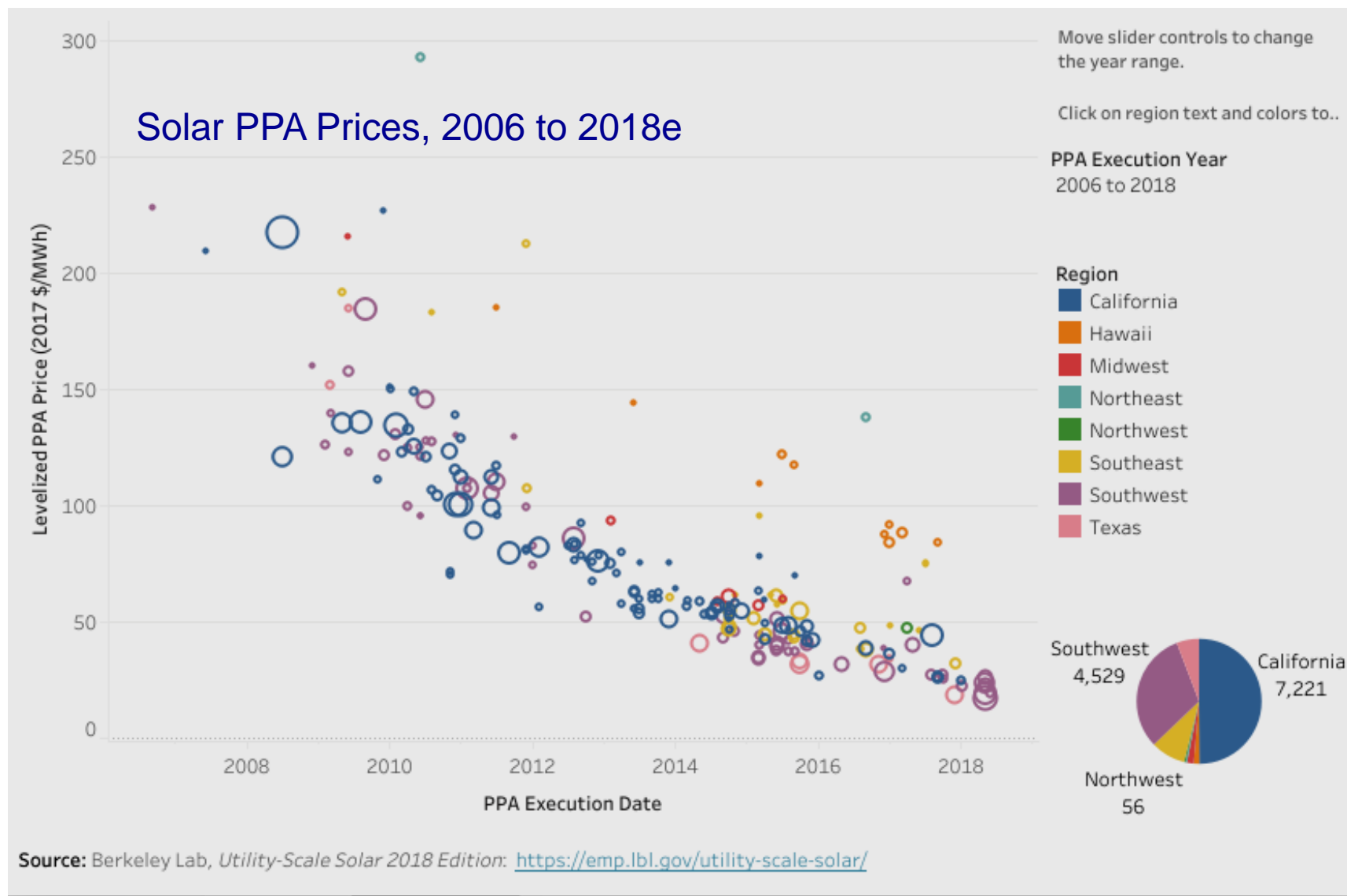
But Here's What We See

Lithium-Ion Battery Prices, 2014-2018E (\$/kWh)



Source: GTM Research

And *Here's* What We See...



... And This

The China effect: Decreasing PV utilization rates, serious oversupply and future strategies
























































Independent energy analyst, Corinne Lin discusses the fallout of China's recent solar policy decision, including decreasing utilization rates and serious oversupply; and on equipment upgrades, particularly for PERC, SE, half cut and bifacial technologies. The industry will bounce back in 2019, she concludes.

JULY 4, 2018 **CORRINE LIN**

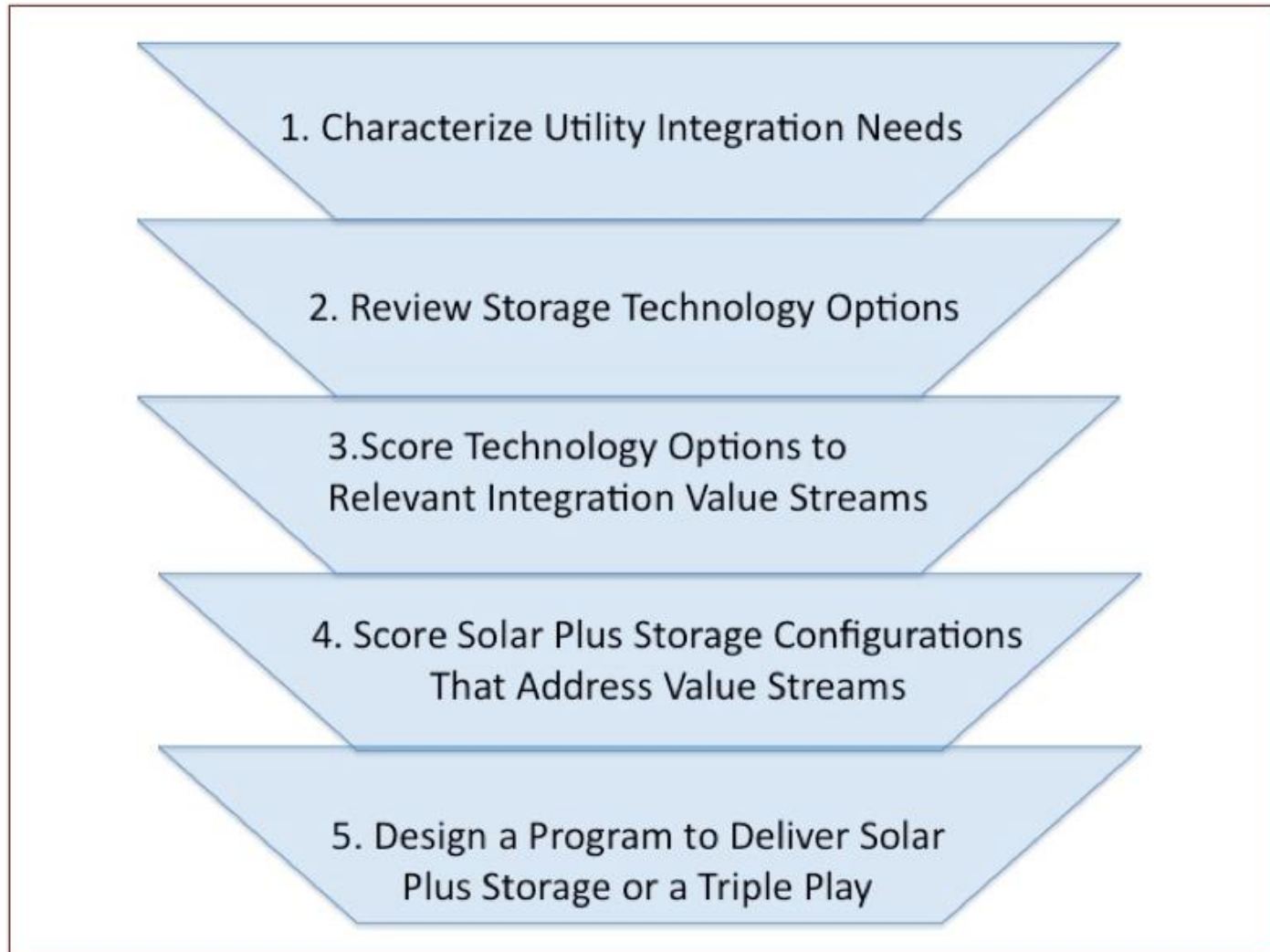
HIGHLIGHTS **MARKETS** **MARKETS & POLICY** **OPINION & ANALYSIS** **POLICY** **CHINA** **WORLD**

... And This



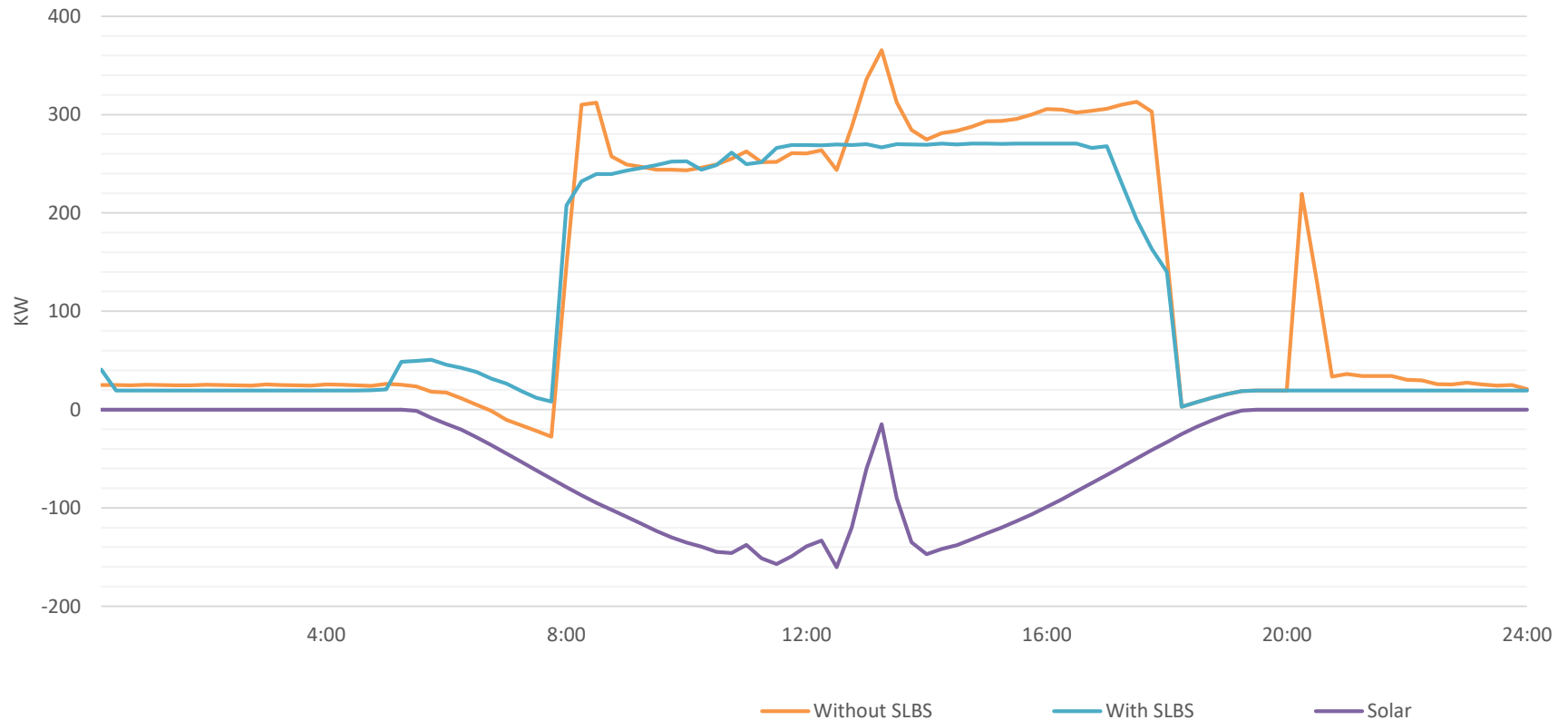
<div>Integration Issue</div>		"Duck Curve" Issues	Intra Hour Fast Ramps	X>2-Hour Forecast Error	X>24-Hour Forecast Error	Peak Load Reduction
1	Curtailable Load (Day-ahead)	 *				
2	Curtailable Load (Day-of)	 *				
3	Auto-DR					
4	Direct Load Control (A/C switch control)					
5	Load Management (Smart Thermostat)					
6	Direct Load Control (Pool pumps)					
7	Direct Load Control (Electric water heaters)					
8	Critical Peak Pricing					
9	TOU Rates					
10	TOU w/ CPP					
11	Residential Load Curtailment (Behavioral)					

CSVP Process for Solar Plus Storage Companion Measures



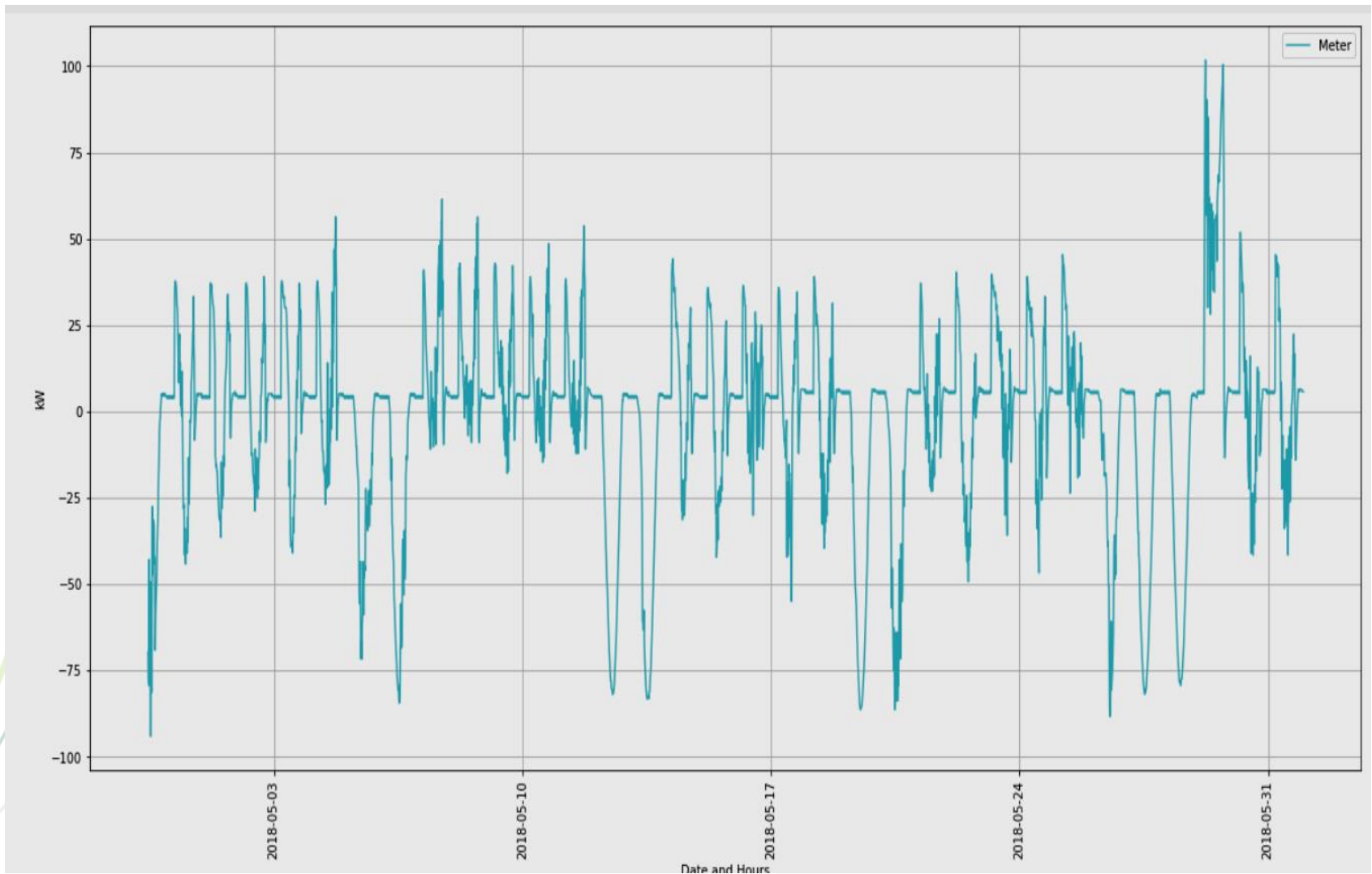
Where Might This Lead?

Different Products for Different Customers



Visualization of Solar Double Plus Impact on Typical Load
Source: Extensible Energy, Powers

John's Favorite Graph



Solar Load Balancing Software

Use IoT platform to control multiple loads as distributed solar generation varies.
Question for 2019: Can this technology be integrated with utility-side solar-plus-storage, too?

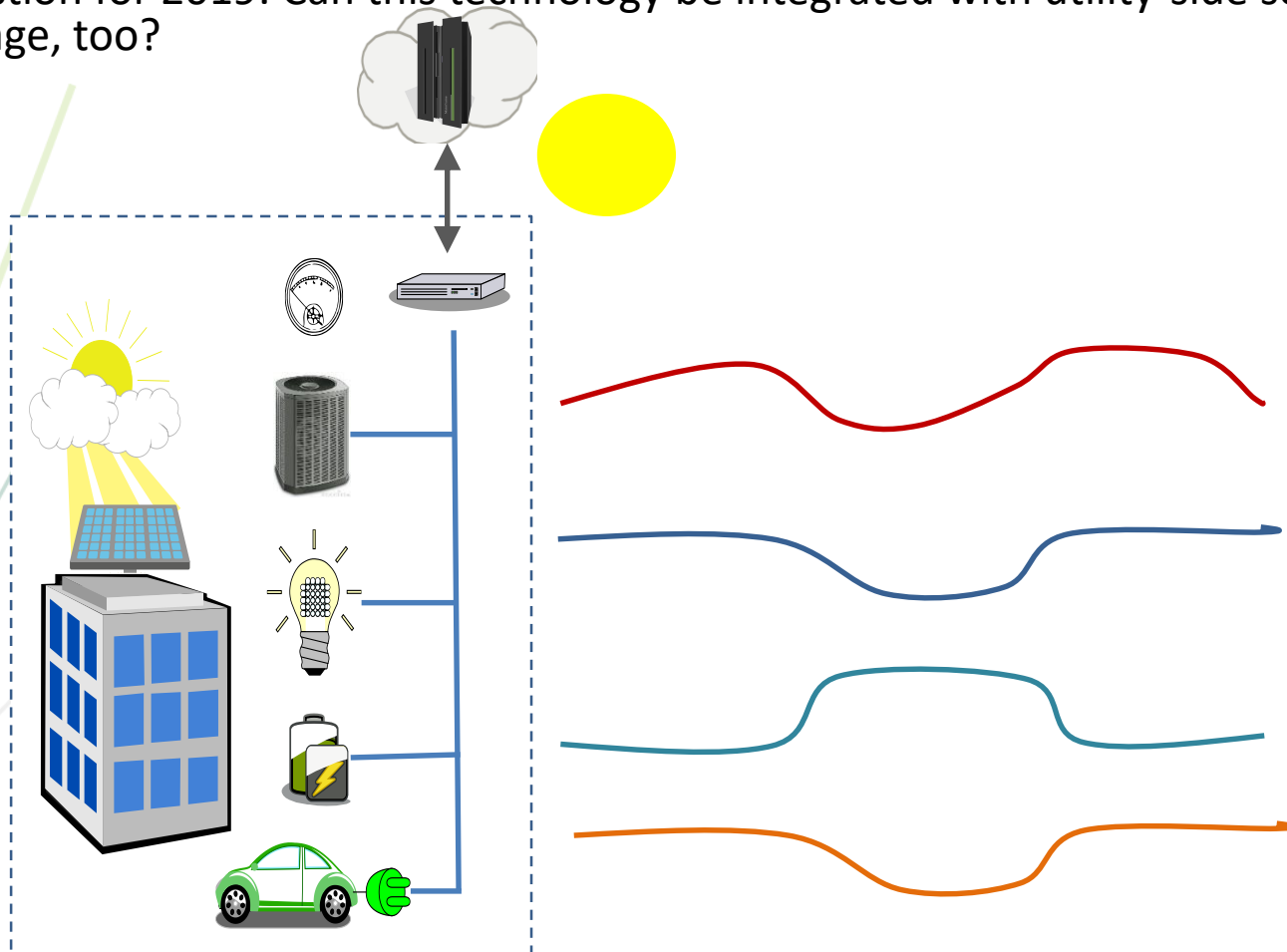




Photo: Silos in Vancouver, BC. Brent Toderian

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