

CALFLEXHUB SYMPOSIUM

SEPTEMBER 24 | 8am-6pm PT



GABRIELA OLMEDO



IVY SO



JOHN POWERS



JOE BOURG

INDUSTRY PERSPECTIVES: AUTOMATED SERVICE PROVIDER (ASP) OPPORTUNITIES AND CHALLENGES

Gabriela Olmedo, Regulatory Affairs Specialist, EnergyHub

Ivy So, Project Manager, APTIM

John Powers, Founder and CSO, Elexity

Joe Bourg, Vice President, Olivine

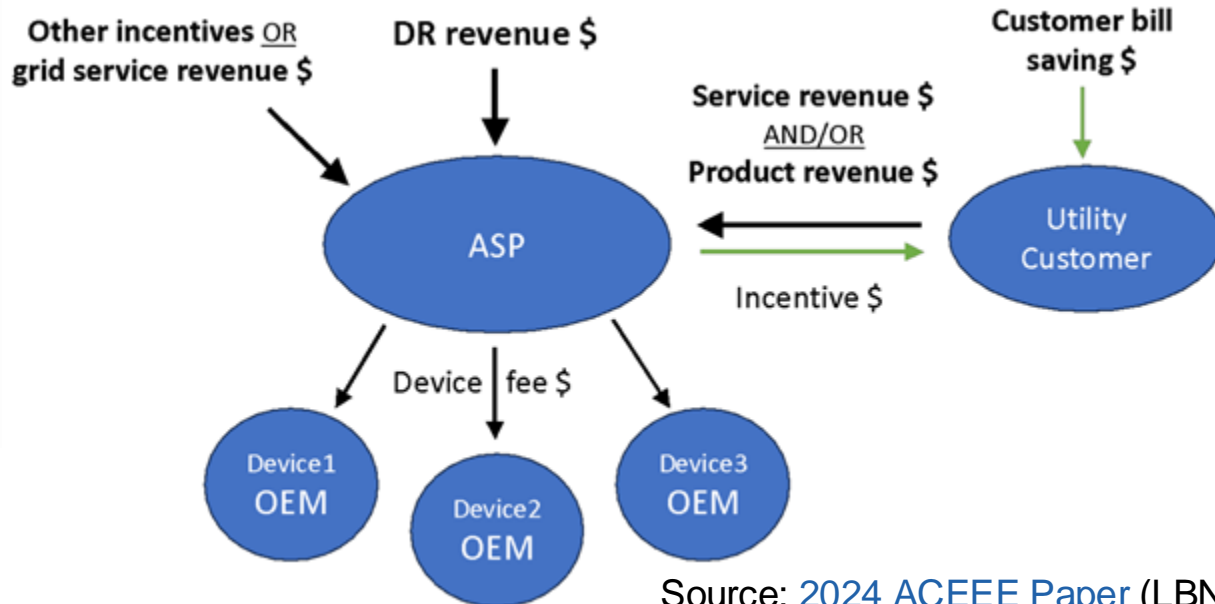


2024

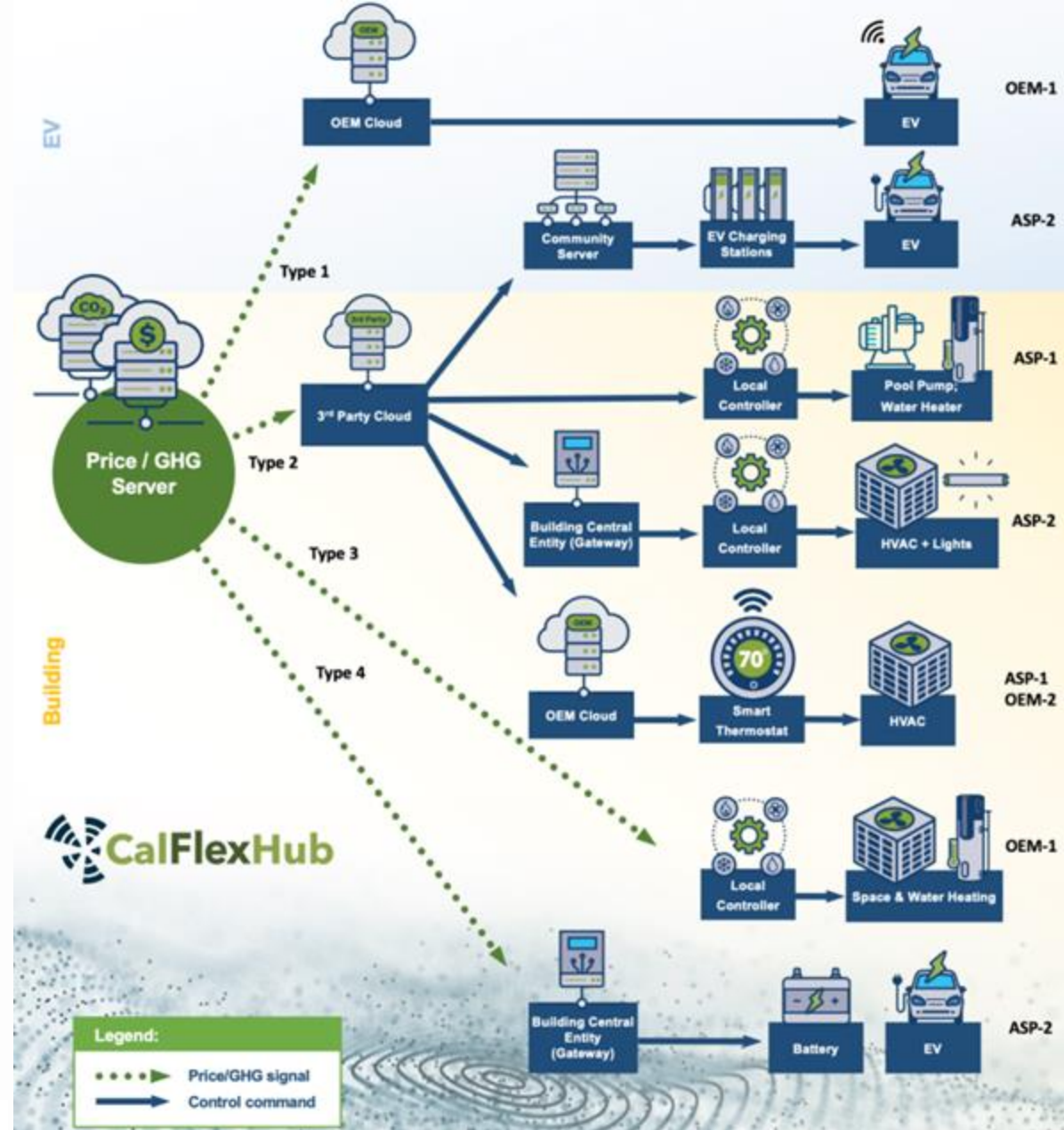
Architectures & Business Models

❖ Type 2: Price Communication through 3rd-party ASP Cloud

- Suitable for VPP programs as it allows ASPs to aggregate DERs
- 4 variations downstream
 - Localized Server
 - Local Controller
 - Building Gateway
 - OEM Cloud



Source: [2024 ACEEE Paper](#) (LBNL)

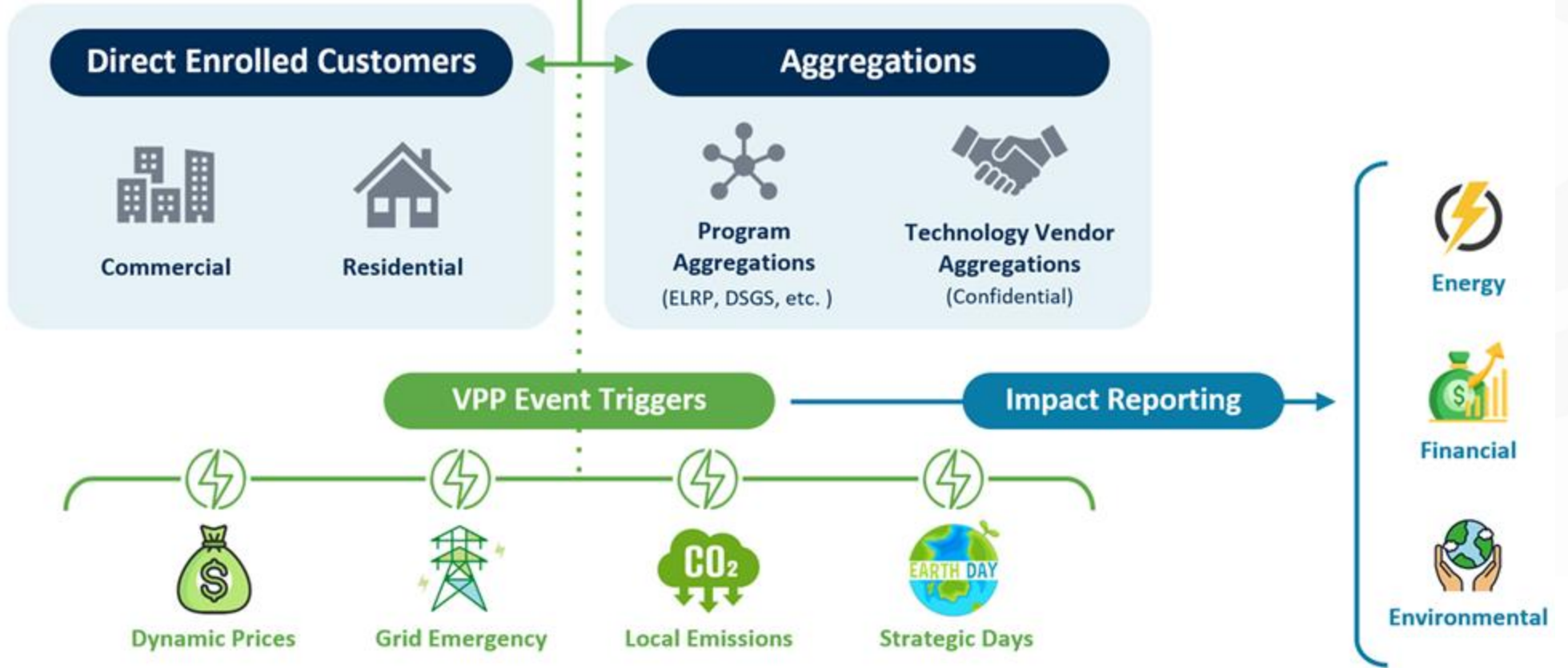


Joe Bourg, **Olivine**

Contact: jbourg@olivineinc.com

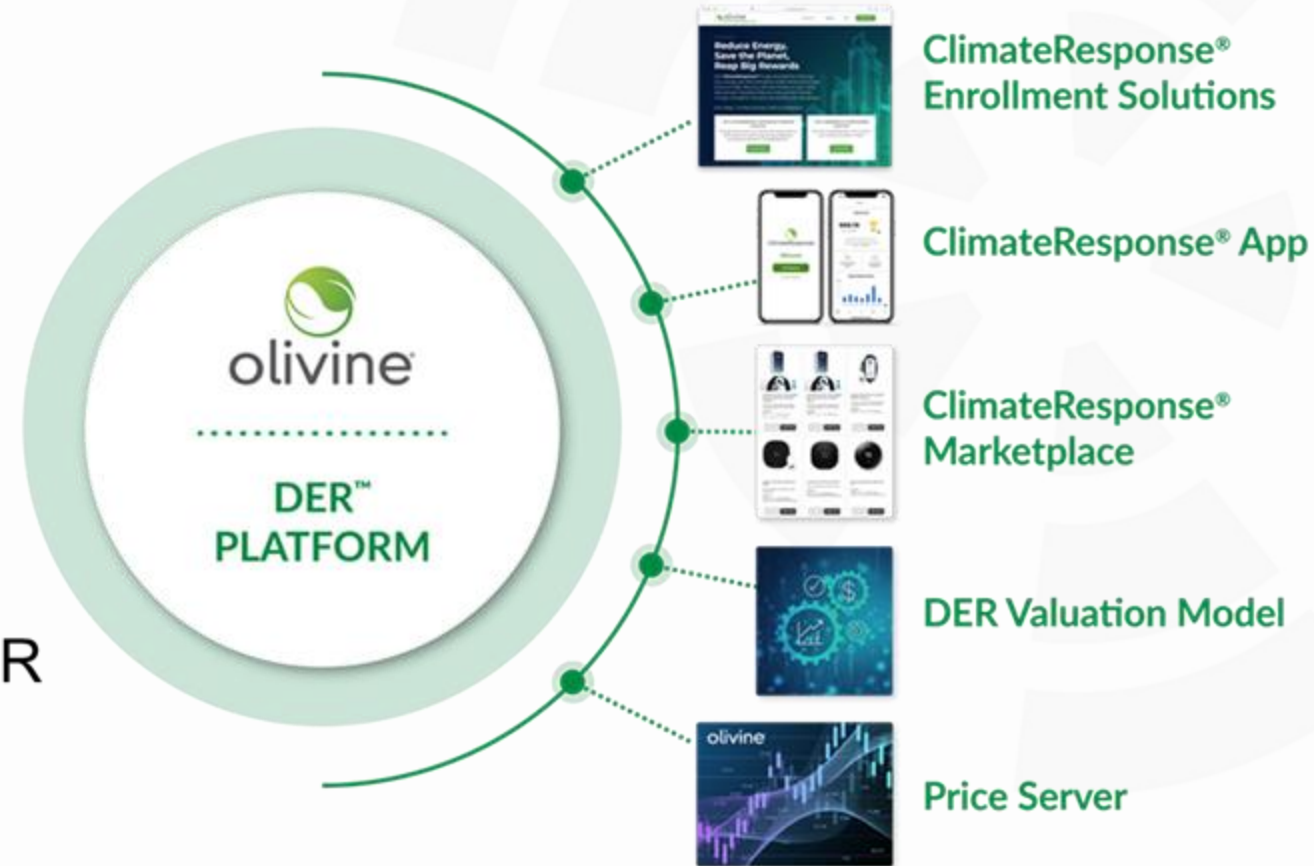


One Solution Multiple Benefits



Overview of Olivine Products and Capabilities

- ❖ Olivine is technology agnostic
 - Cloud-to-Cloud OEM integrations:
 - HVAC
 - Batteries
 - EV / EVSE
 - Microgrid Controllers / EMS
 - Communications via APIs / OpenADR
- ❖ Software solutions to provide multiple capabilities



ASP Approach and Implementation

- Customer communication / engagement strategies
 - Email, SMS, Phone App
 - Performance Reporting
- Dynamic pricing / Grid / GHG signal communication strategies
 - Price data to OEMs via Price Server
 - or
 - Convert price data to functional commands and / or
 - Graphical representation of price / GHG signal via dashboards on our DERMS platform



ASP Approach and Implementation (cont.)

- ❖ We are customer agnostic – any customer, anywhere
 - Large commercial customers provide better opportunities than most other sectors
 - ❑ Larger impact, lower cost to serve per kW
 - ❑ More amenable to direct load control
- ❖ ASP business models are challenging
 - ASPs, OEMs, and customers all need to monetize their participation
 - Unlocking multiple value streams is the only way to make business models viable
 - ❑ Utility bill savings
 - ❑ Grid services revenues
 - ❑ Shared savings models
 - ❑ Carbon reduction
 - ❑ OEM product sales
 - Must minimize costs to the customer

Gabriela Olmedo, **EnergyHub**

Contact: gabriela.olmedo@energyhub.net



Providing DER access at the grid edge



Thermostats

ALARM.COM | amazon smart thermostat | Building36. AN ALARM.COM COMPANY | vivint. | LUX™

Nest | Honeywell Home | ecobee | sensi

Energy storage

Cadenza INNOVATION | ENPHASE | FORTRESS POWER | GENERAC | Panasonic

acells | Sol-Ark | solar edge | sonnen | sunnova

sunrun | SUNPOWER® | SUNVERGE | TESLA

Electric vehicles

TESLA | VOLVO | gm | -chargepoint+ | emporia | wallbox

TOYOTA | STELLANTIS | Fermata Energy | flo | EVOCHARGE | ENPHASE

enel x

Commercial & industrial

CPROBT | nrg | enel x | voltus | IPKEYS POWER PARTNERS

Customer engagement

bidgely | ORACLE | OPOWER

Energy marketplace

enervee® | TECHNIART | efi

uplight | FRANKLIN ENERGY®

Grid DERMS

ORACLE®

GE | SIEMENS



Edge DERMS



GRID OPERATIONS

PROGRAM OPERATIONS

Rates to devices

Edge DERMS provides a rate signaling feature that sends current rate information, for each customer, from the utility system of record to devices





Principles for maximizing customer participation

- 1 Establish a single umbrella brand across DER types

- 2 Compensate customers fairly for the flexibility value they deliver

- 3 Make it easy to understand and participate

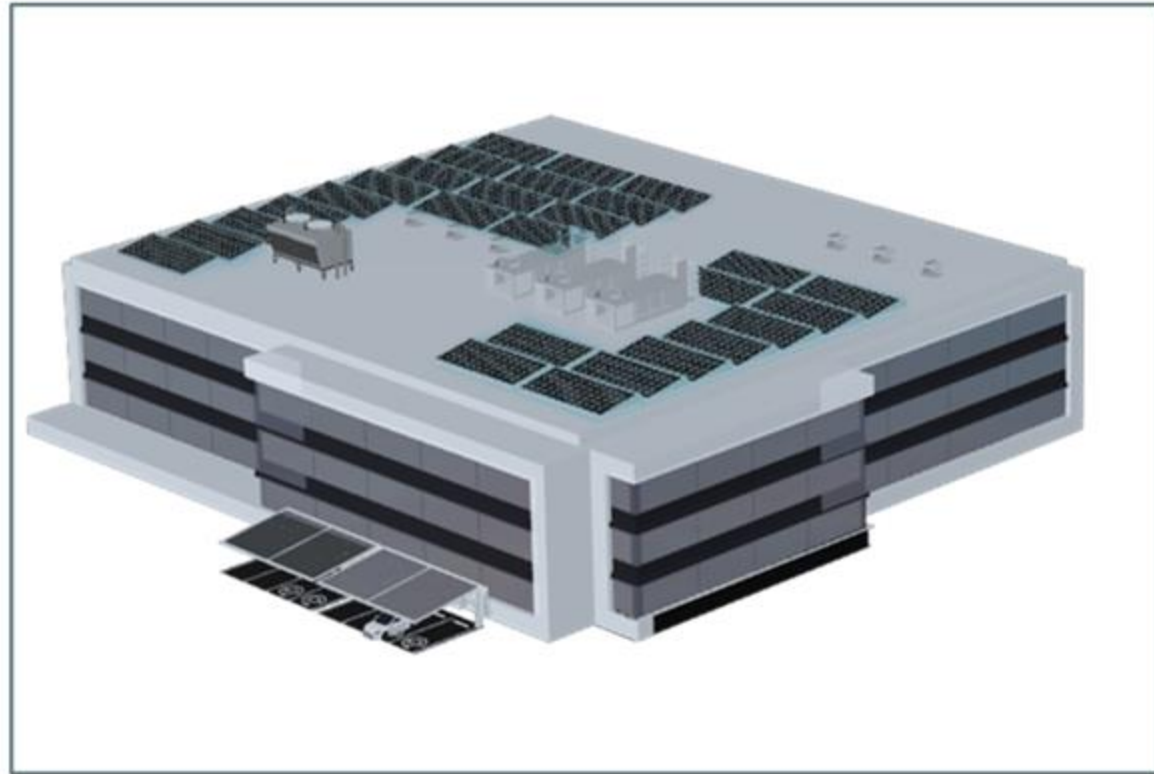
- 4 Design based on real DER capabilities, but be technology-agnostic

John Powers, **Elexity**

Contact: john@elexity.io



Elexity **Clean Energy** Management Platform



Effortlessly manage your major energy assets from a single intuitive tool, while Elexity optimizes 24x7.



Elexity Climate Control

Elexity Grid



Elexity Storage

Elexity EV



Elexity Solar

Elexity business model and value propositions

Software as a Service (SaaS)

- Flat Monthly Fee, Guaranteed Savings
- Fee varies with size and complexity of the building
- Also now sell batteries, as an upsell option

Customer-First:

- Comfort, Control, Cost, Carbon – the 4 Cs of energy management
- Guaranteed Savings
- Increased Visibility into Energy Performance
- Single Pane of Glass – Solar, Battery, HVAC, Billing Information, Multi-Site Comparison...
- “Energy Experts” – we’ll get you into the best available utility rate, program, incentives

Elexity in SCE DRP and CalFlexHub

Acting as an ASP, Elexity has enrolled 17 customer sites in two CA flexibility programs

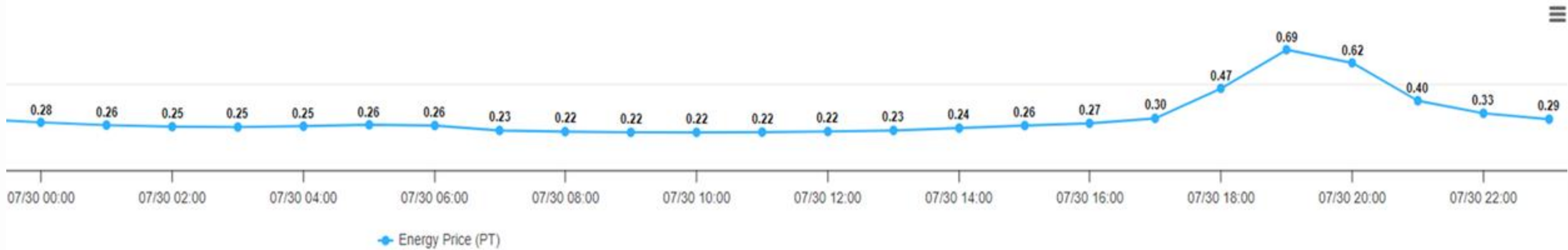
- ✓ Schools (public, private)
- ✓ Auto Dealerships
- ✓ Retail Outlets
- ✓ Fitness Centers

Technologies:

- Primarily HVAC loads (package units, heat pumps)
- One battery (125 kW / 265 kWh)
- Coming Soon: EV Chargers

No Fancy Standards or Protocols Were Harmed in the Development of these Pilots

Flexible Pricing Rate: Hmmm . . .



If Price Deltas Are too Low...

I can beat this with TOU-GS-2-E already.

If the “real” price differences between high and low price hours are really this small.. . . What are we doing?

IOU Rate teams may want to look at this again. There are MANY ways to recover fixed costs, so optimize for project objectives.

	TOU-GS-2-E	Yesterday's DRP
Max Price	\$0.85	\$0.69
Min Price	\$0.22	\$0.22
<i>Price Delta</i>	<i>\$0.63</i>	<i>\$0.47</i>
Even Worse for HVAC...		
Max 2-hour window	\$0.85	\$0.655
Adjacent window	\$0.22	\$0.385
<i>Price Delta</i>	<i>\$0.63</i>	<i>\$0.27</i>

PANEL DISCUSSION

