

The Power Sector in the Age of Consumer Empowerment



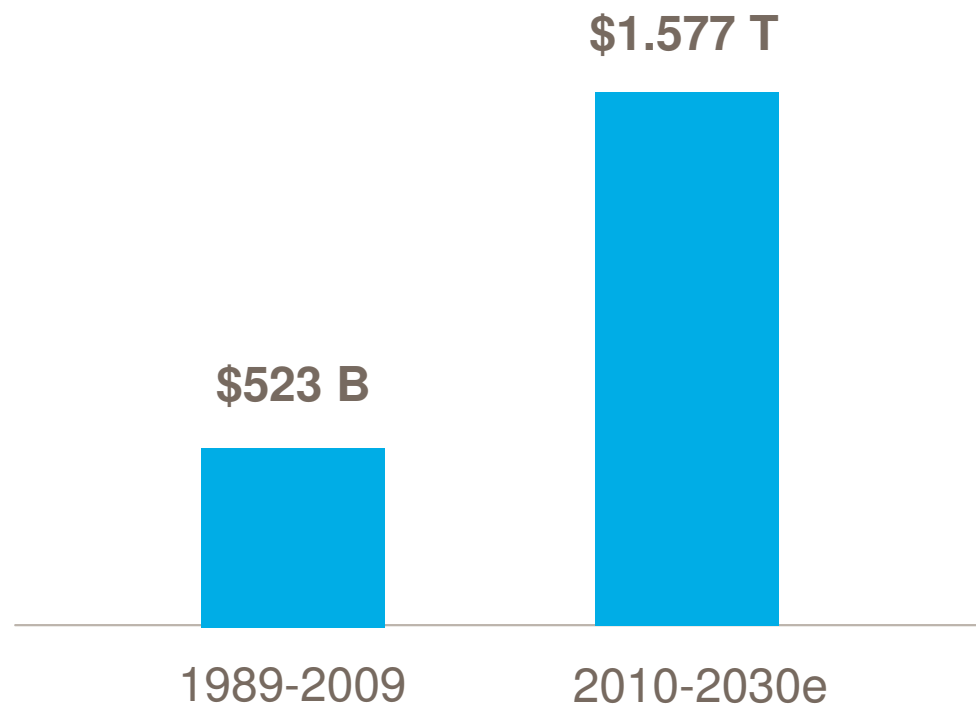
Actual neighborhood of Sunrun customer homes in Stevenson Ranch, CA

Meet some energy industry movers and shakers:



Modern energy infrastructure is all of our business.

Historical and expected utility capital expenditure for generation, transmission and distribution



Who wins a race to 1 GW?

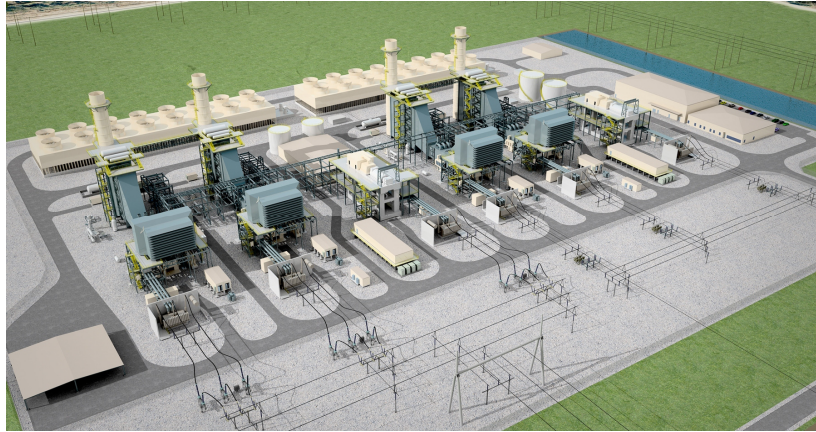
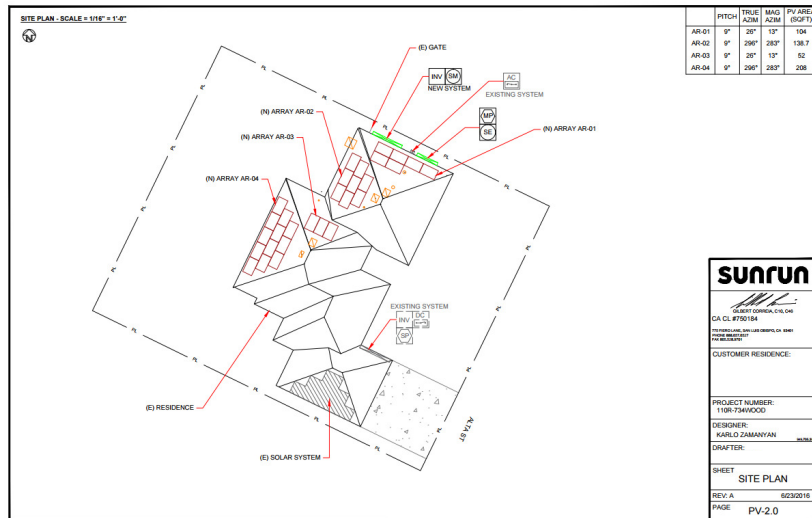


Photo credit: Duke Energy

1 x 1,000 MW Combined Cycle Gas Plant

~4 years



142,857 x 7 kW Rooftop Solar Array

~4 months

\$1.4B in annual net benefits to Californians by 2020 from incorporating distributed energy resources

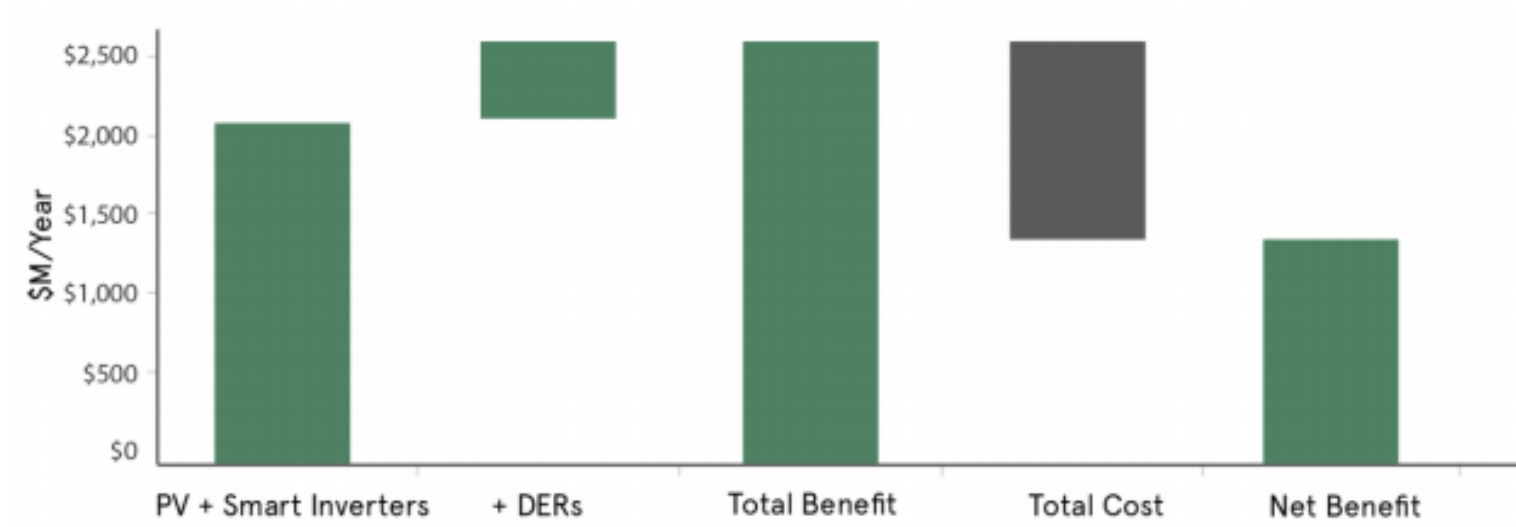




Photo Credit: Wikipedia.com

Phonograph intended for listening to “spoken letters.”



Photo Credit: Wikipedia.com

Telephone intended for listening to concerts remotely.

**Portion of U.S. load that can
be served by rooftop solar at
current module efficiency:**

39%

Taxi



Hotel



TV



Power Plant



What will happen if energy providers don't work together?

Tens of millions of self-powered homes and businesses, operating in isolation from the grid.

+

Utility investment in stranded grid assets, leaving “ratepayers” to cover the costs.

The power sector faces a choice:

PATH 1 INTEGRATED GRID

One path leads to grid-optimized smart solar, transactive solar-plus-battery systems, and ultimately, an integrated, optimized grid in which customer-sited DERs such as solar PV and batteries contribute value and services alongside traditional grid assets.

Pricing & Rate Reform
New Business Models
New Regulatory Models

PATH 2 GRID DEFECTION

Another path favors non-exporting solar PV, behind-the-meter solar-plus-battery systems, and ultimately, actual grid defection resulting in an overbuilt system with excess sunk capital and stranded assets on both sides of the meter.

• EXPORT COMP. (NEM, FIT, VoST) • TOU PRICING • LOCAL HOT SPOTS • ATTRIBUTE-BASED PRICING
• NRG • E.ON • RWE • ConEd BQDM
• PERFORMANCE-BASED REGULATION • NY REV • CA MORE THAN SMART • ENERGIEWENDE



Solar PV and batteries play an important role in the future electricity grid, but decisions made today will encourage vastly different outcomes.



• NO EXPORT PRICING • FIXED CHARGES
• CENTRAL GENERATION • VERTICALLY INTEGRATED UTILITIES
• COST-OF-SERVICE REGULATION • STRANDED ASSETS

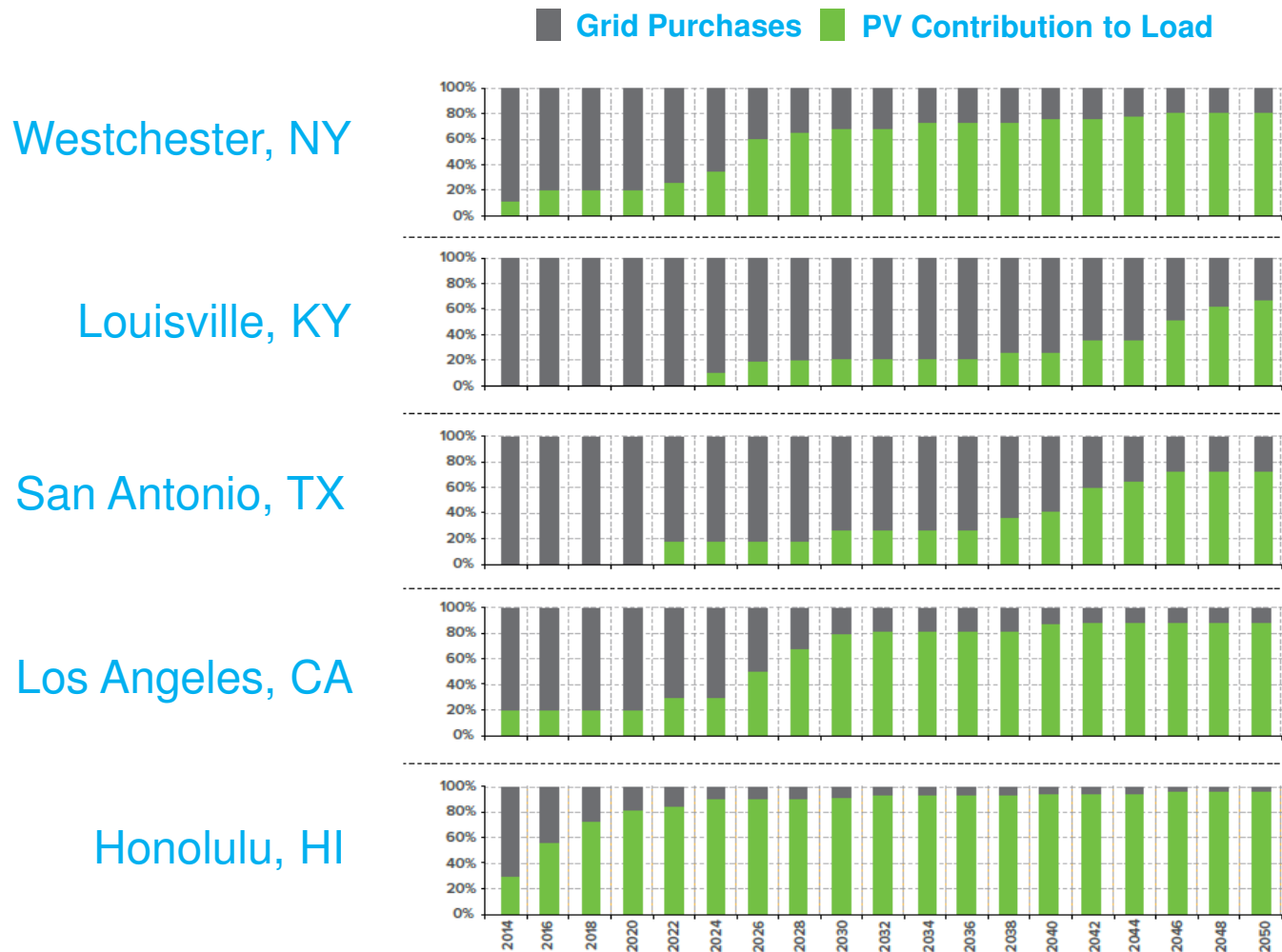
GRID DEFECTION

Sunrun BrightBox

Non-exporting PV+storage cheaper than utility rates

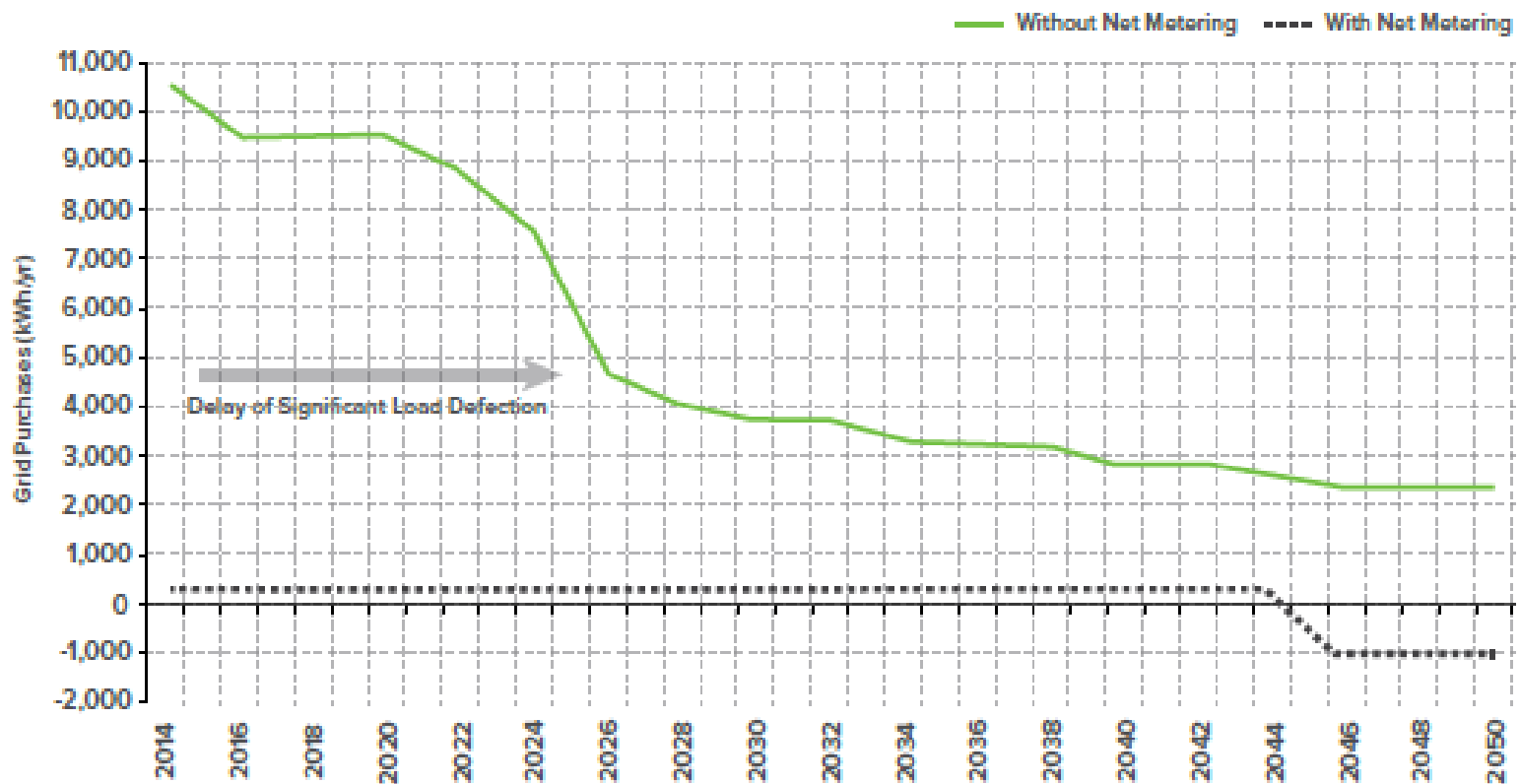


Rooftop solar will play a central role in modern energy infrastructure.



Eliminating net metering delays, but does not prevent, a shift to behind-the-meter generation.

Projected residential customer grid electricity purchase without net metering.
Westchester, NY



Coordinated infrastructure investment unlocks opportunity.

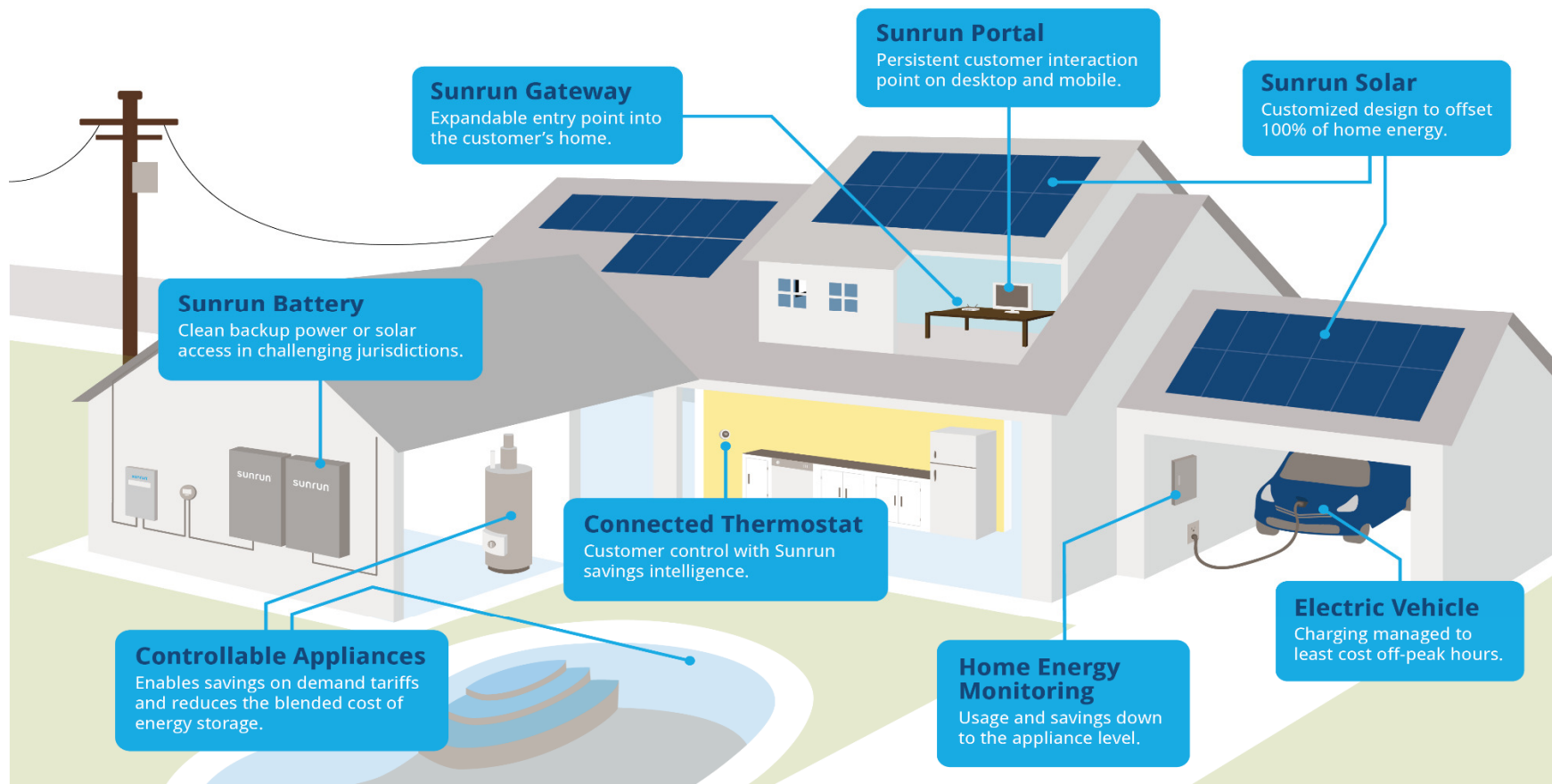


Photo Credit: Wikipedia.com

Home isn't at the edge – home is at the center.



Comprehensive home energy management



All home energy assets participate to offer:

1. Consumer control – Dispatchable through the Sunrun Portal
2. Local smart response – Management of the ecosystem to reduce consumption or move consumption into off-peak hours
3. Network smart response – Enables 3rd party revenue streams through DR and beyond

**If we can do it here, we
can do it everywhere.**