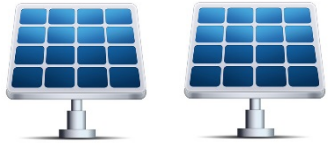
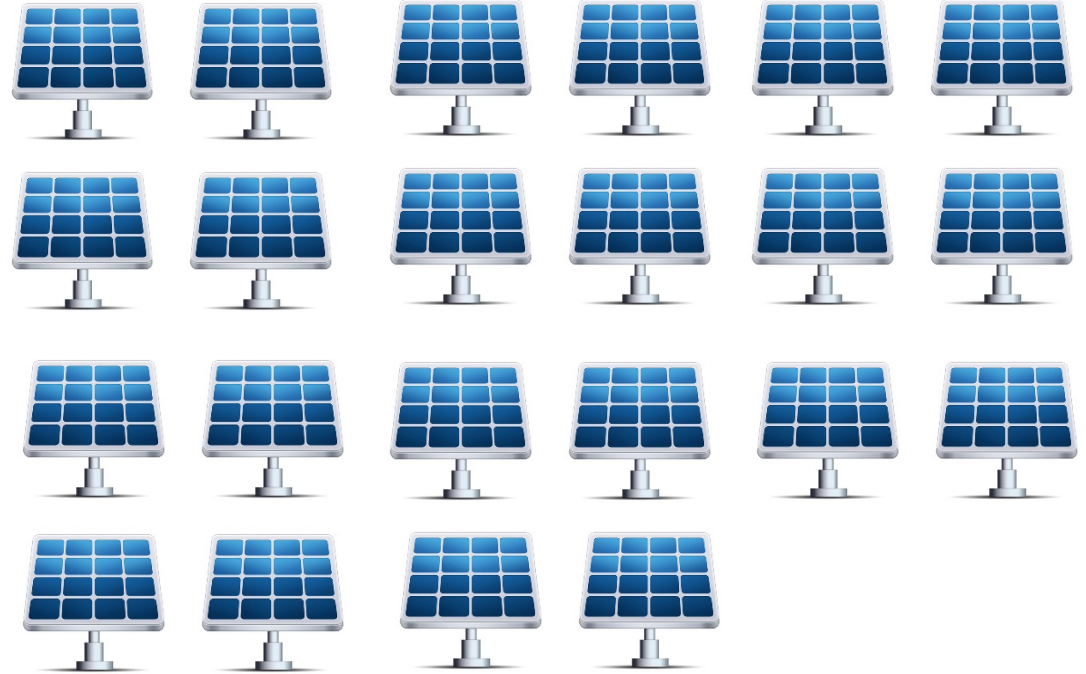


# My, How The Market Has Grown

2010: 2 GW



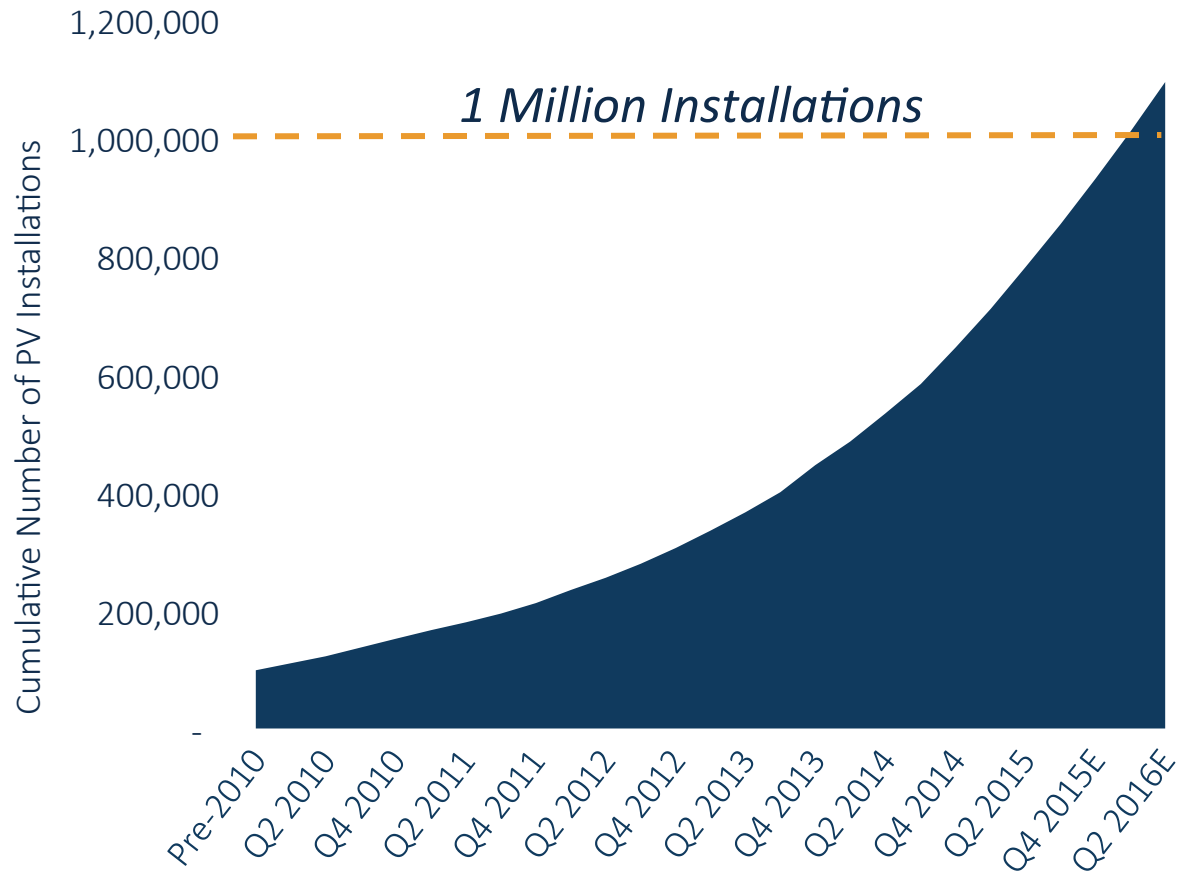
2015: 26 GW



Source: GTM Research/SEIA U.S. Solar Market Insight

# The U.S. Solar Market is Soon to Reach Two Big Milestones

## Milestone #1



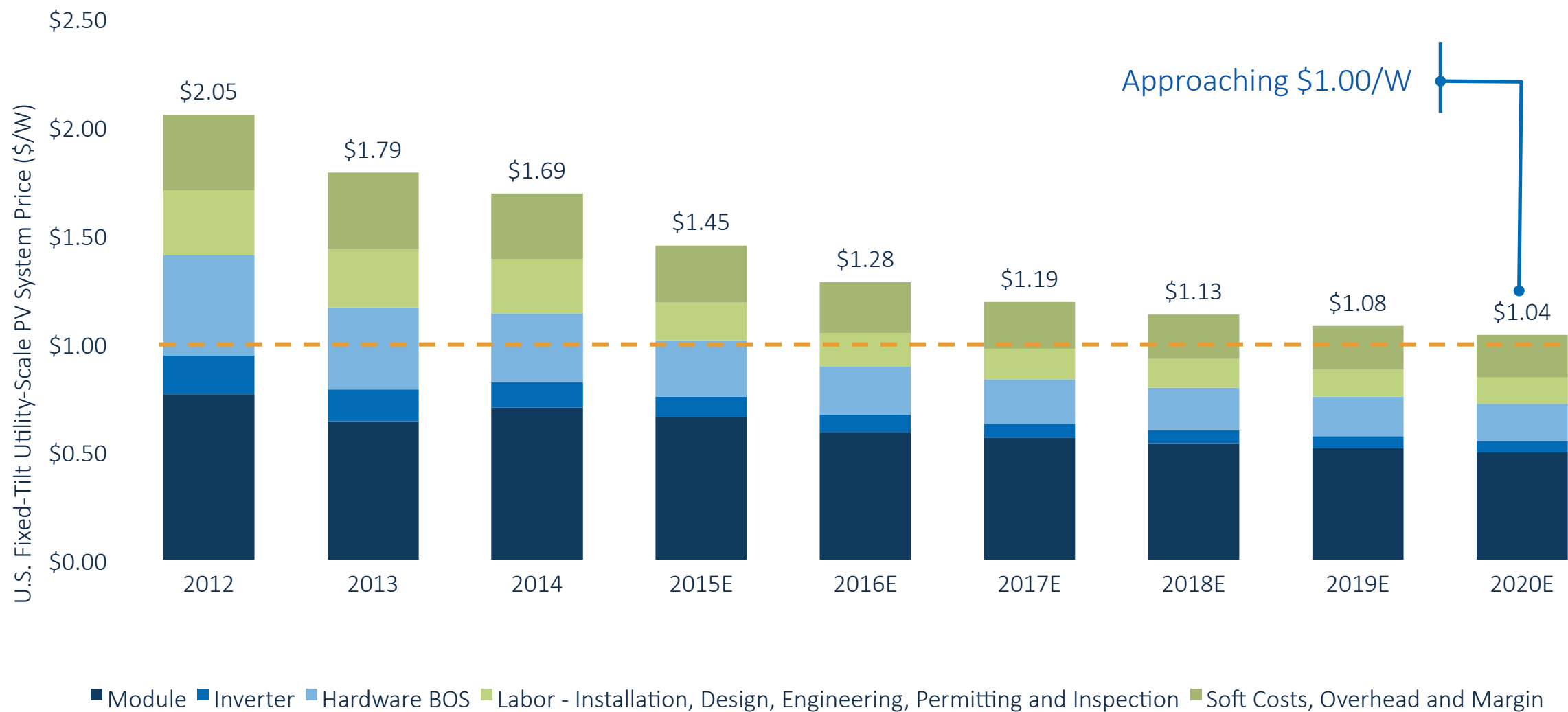
Source: GTM Research/SEIA U.S. Solar Market Insight

## Milestone #2

**1% of National Electricity Generation**

Source: GTM Research, SEIA, kWh Analytics

# More Importantly, Costs Are Approaching a Turning Point



Source: GTM Research

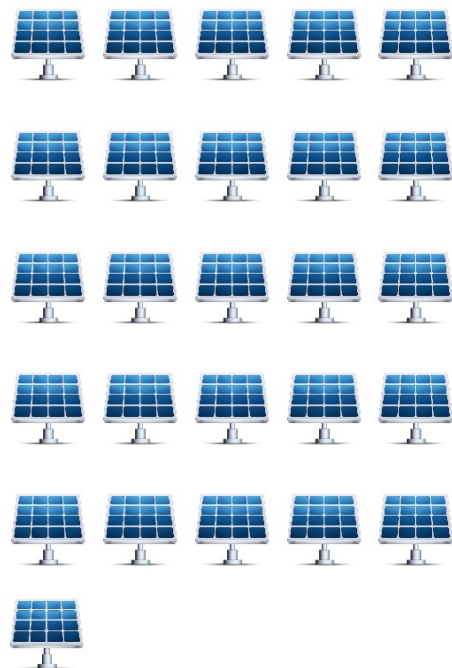
# Time To Think About The Next Order of Magnitude

# 10% of U.S. Electricity Generation Requires A Lot of Solar

2010: 2 GW



2015: 26 GW



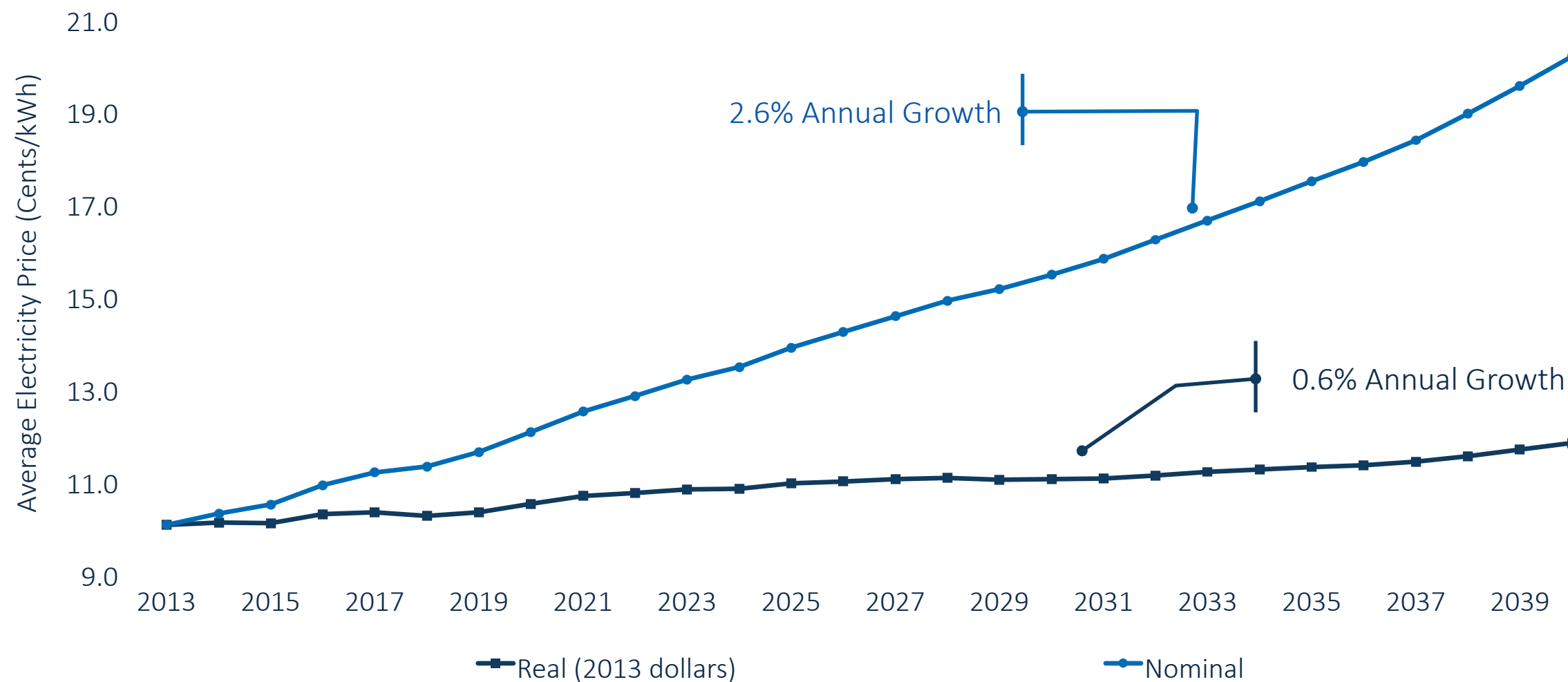
2025-2030: 250 GW



Source: GTM Research

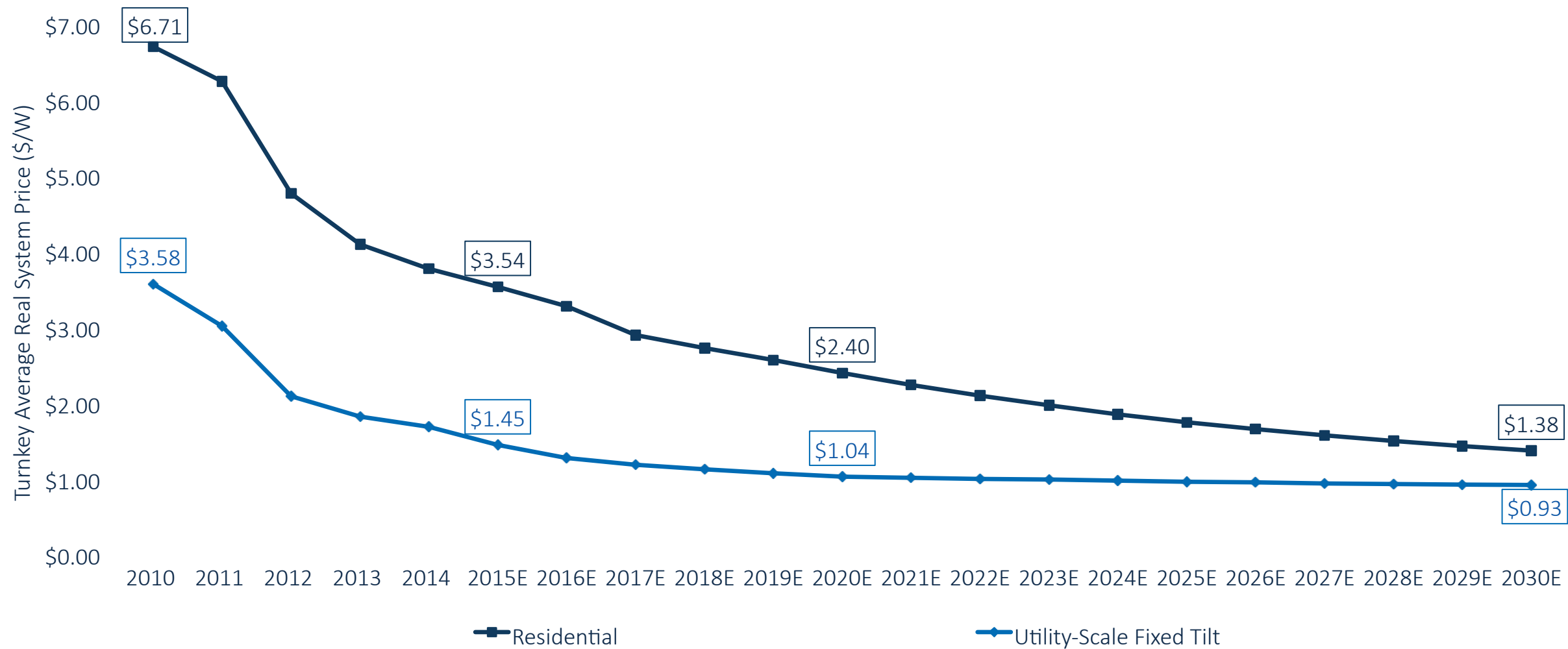
# The Tailwinds

# Electricity Prices Will Probably Continue to Rise



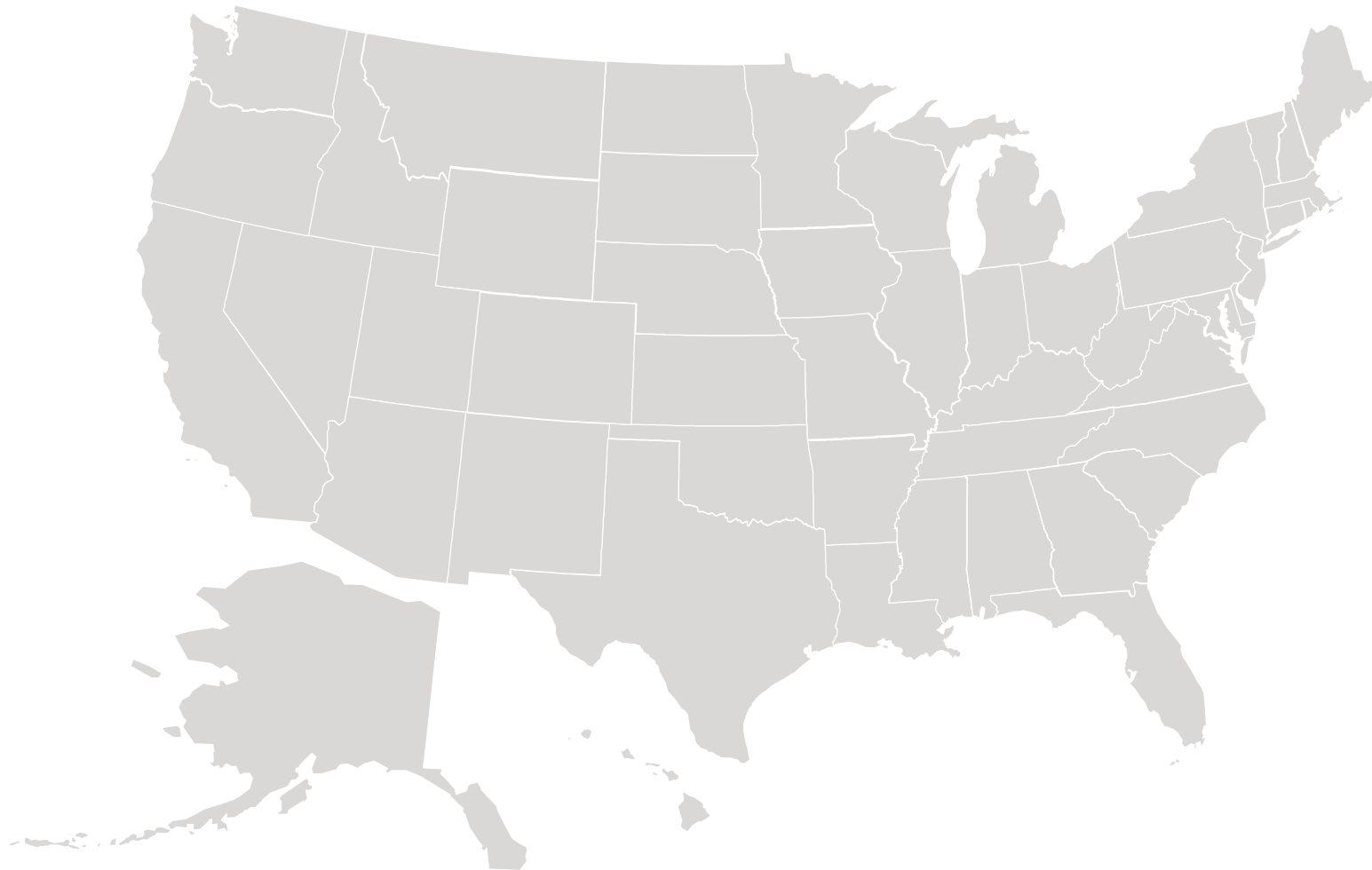
Source: EIA, GTM Research

# Solar Prices Will Probably Continue To Fall



Source: GTM Research. Note: pricing includes developer margin

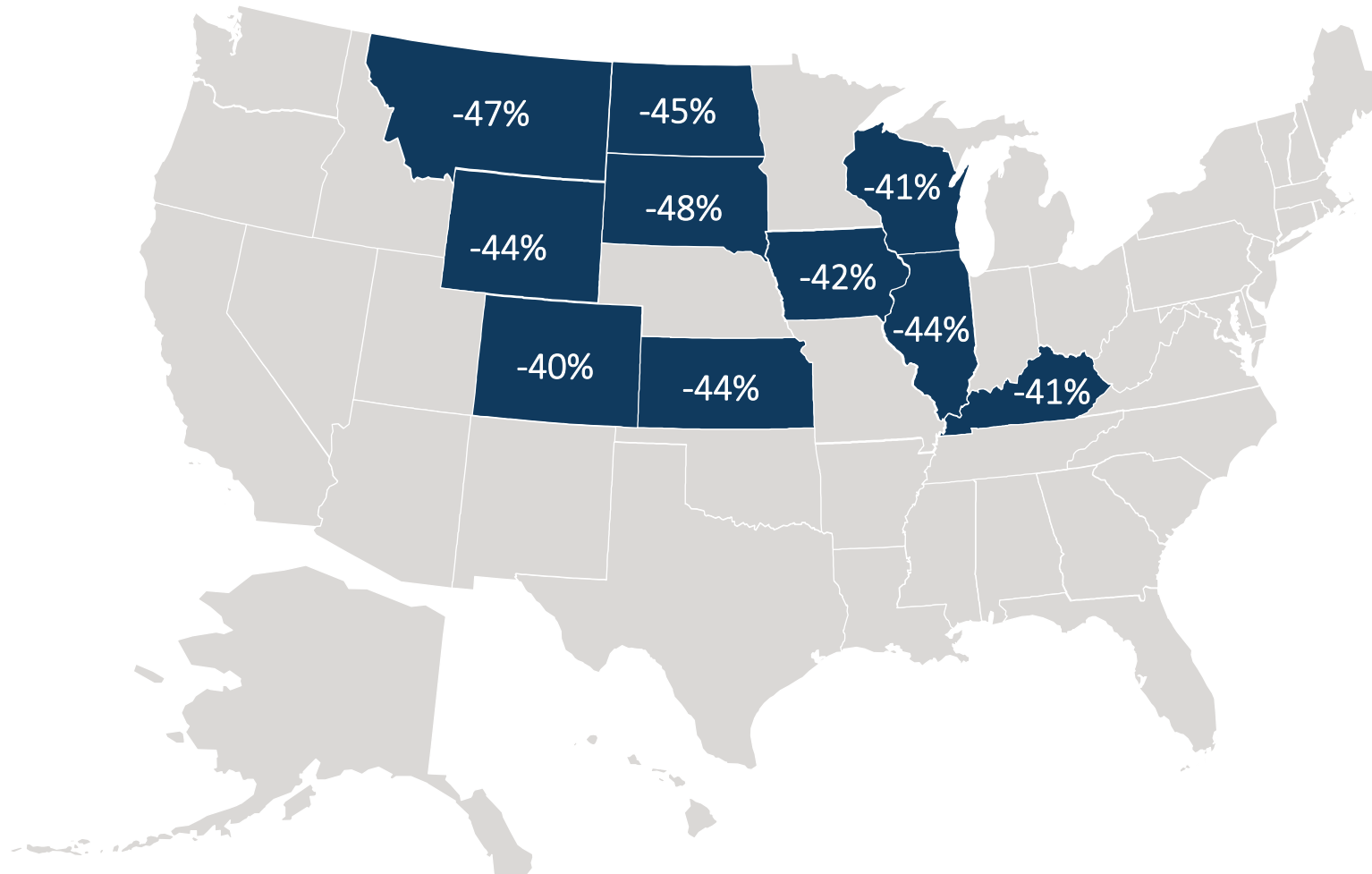
# The Clean Power Plan Could Open Up New Markets



Source: GTM Research, E&E Publishing

# The Clean Power Plan Could Open Up New Markets

## States With Largest GHG Reduction Targets Under The Clean Power Plan



Source: GTM Research, E&E Publishing

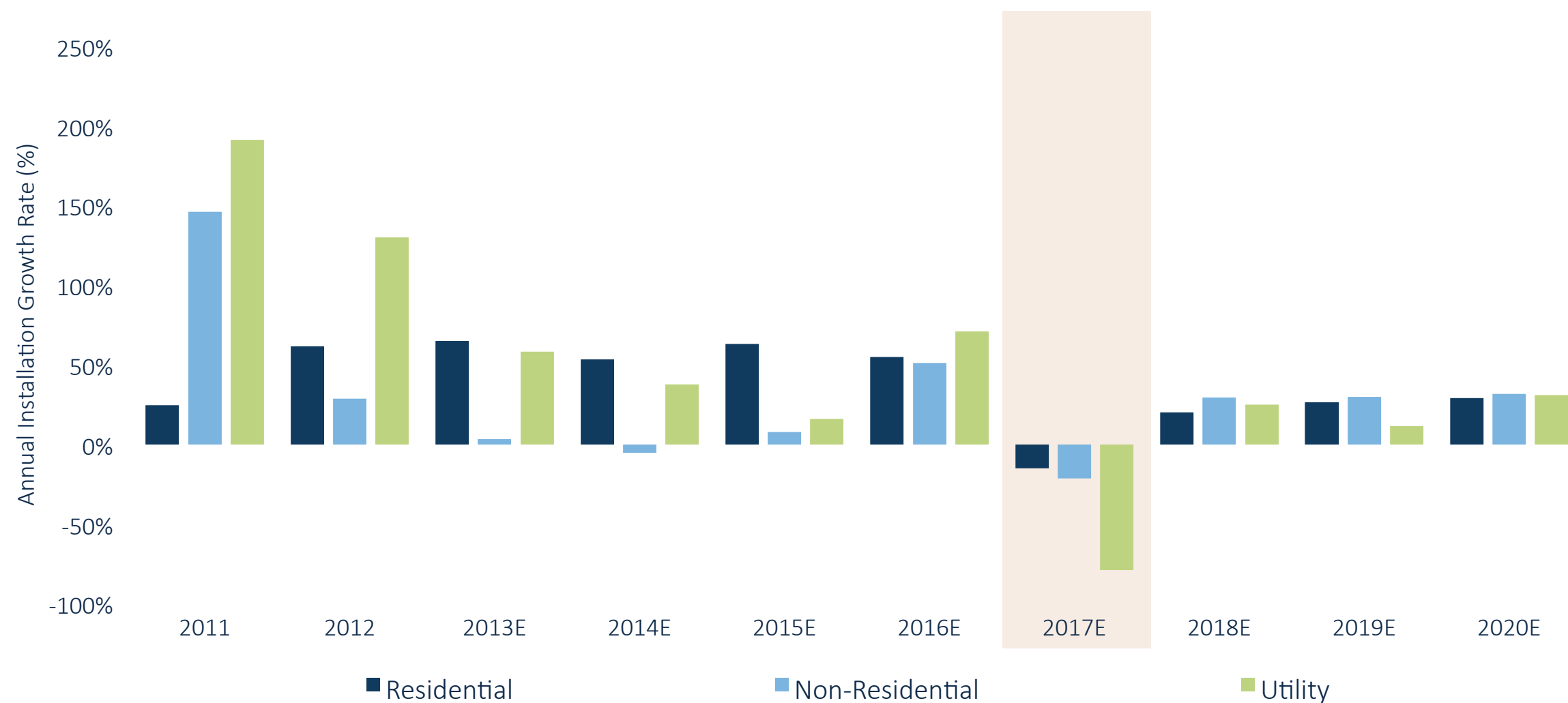
# Market Reinvention May Open Up New Revenue Streams

## Near-Term Opportunities for DER Participation in ISO Markets



# The Headwinds

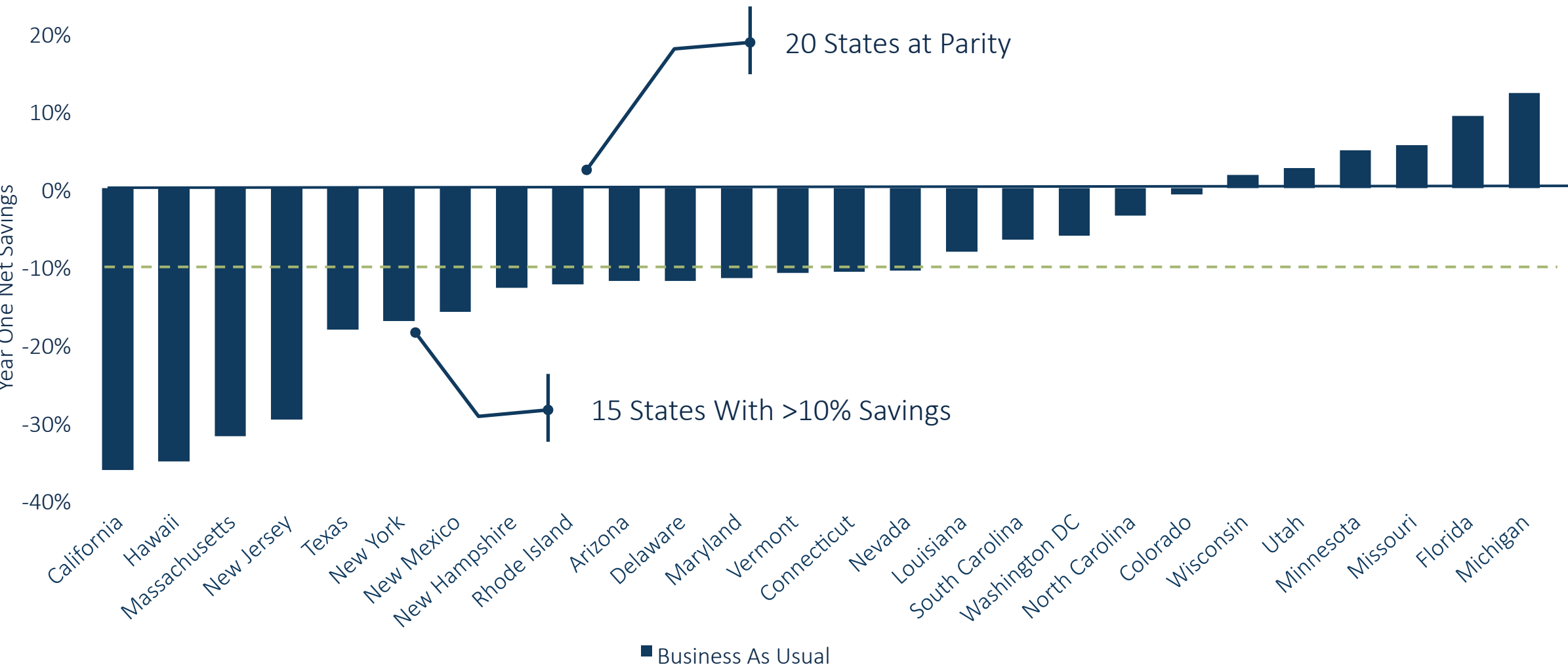
# ITC Expiration Could Create The First Down Year In Recent History



Source: GTM Research

# Rate And NEM Reform Could Still Erode Distributed Solar Economics

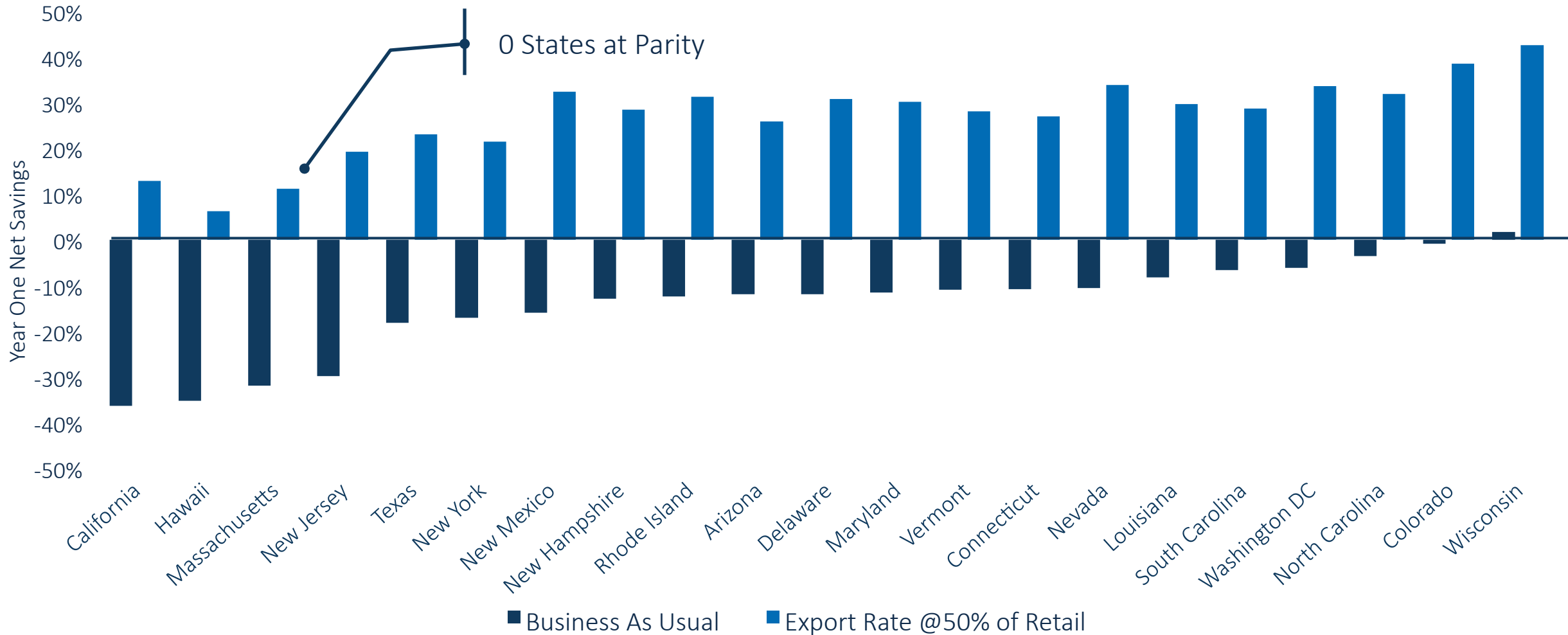
## Today's Residential Solar Value Proposition



Source: GTM Research *U.S. Residential Solar Grid Parity Monitor* (forthcoming)

# Rate And NEM Reform Could Still Erode Distributed Solar Economics

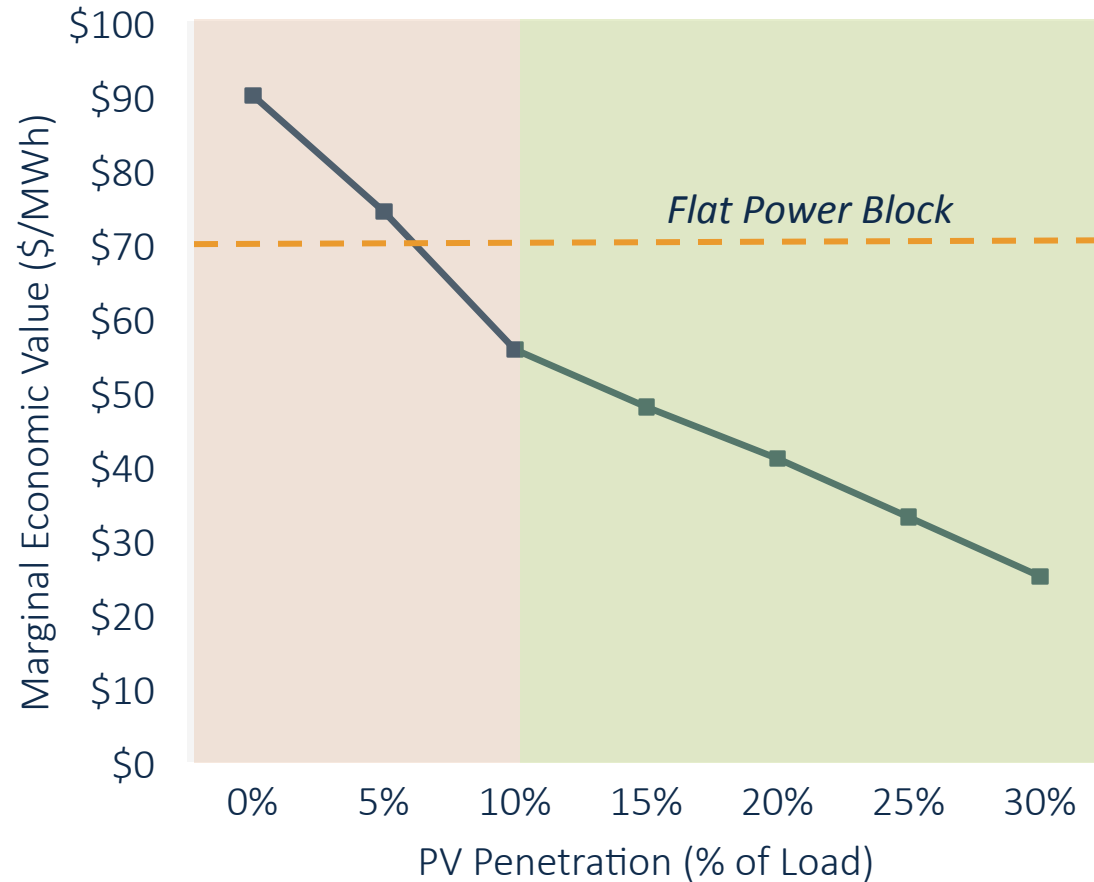
## What Happens With A Lower Export Rate?



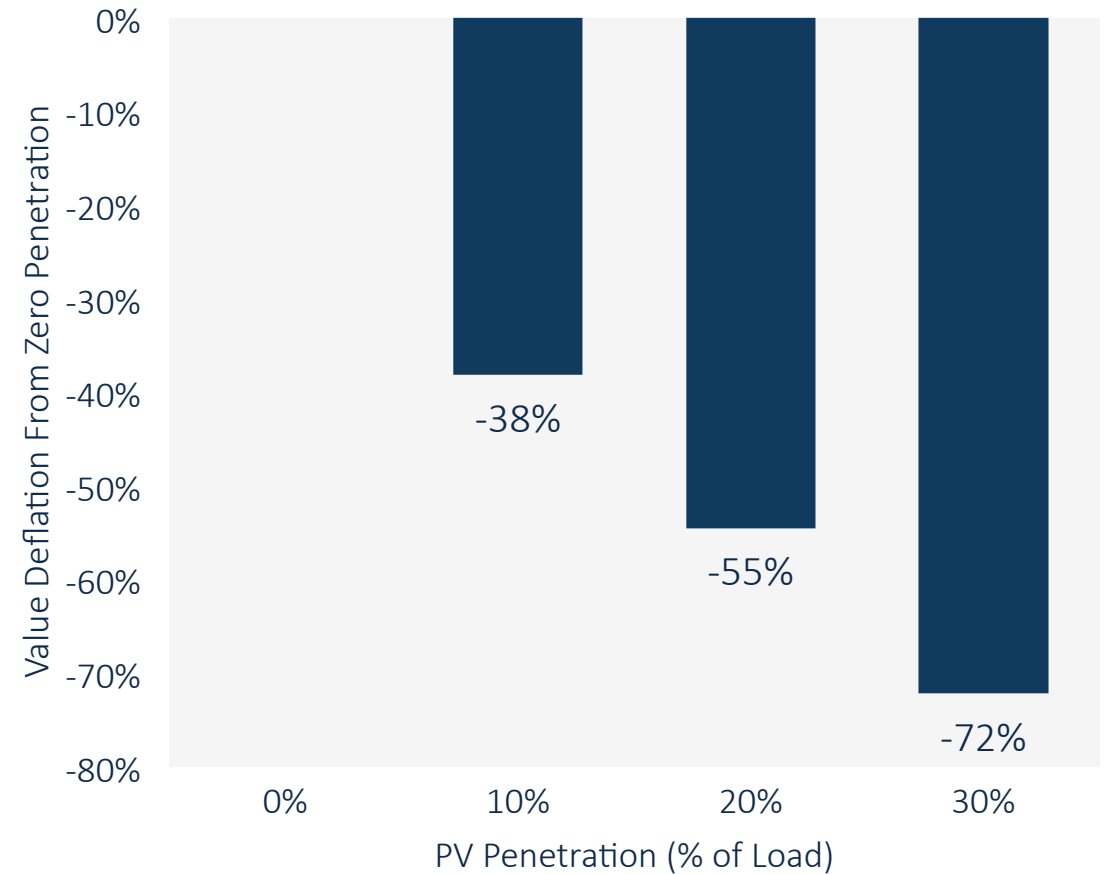
Source: GTM Research *U.S. Residential Solar Grid Parity Monitor* (forthcoming)

# As Solar Penetration Grows, Its Value To The Grid Shrinks

## Marginal Value of Solar - California



## Value Deflation Effect - California

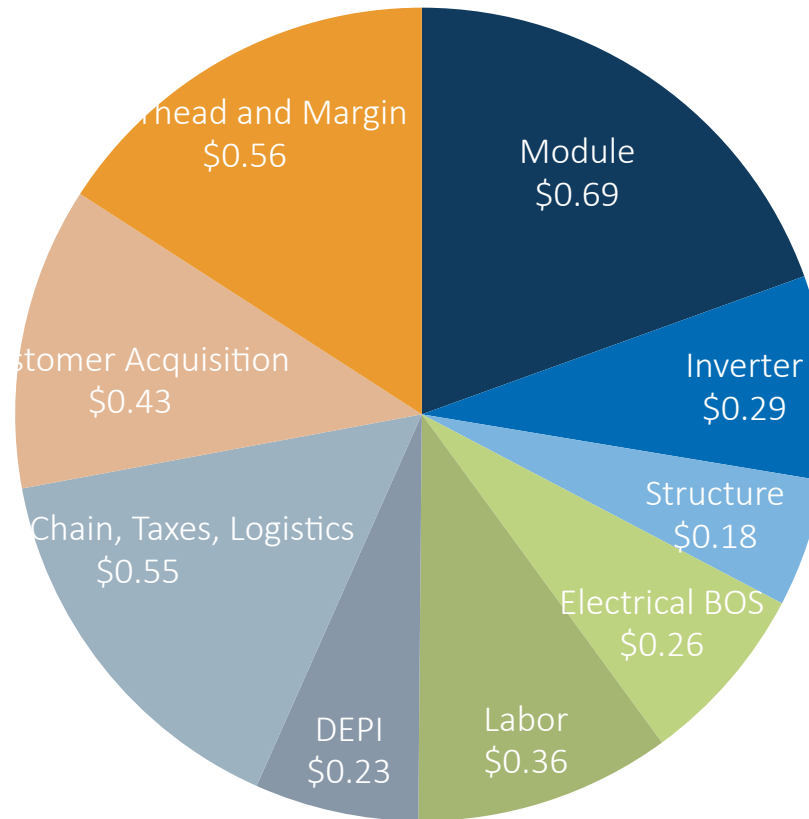


Source: GTM Research and Sivaram, V. based on Mills and Wiser, Lawrence Berkeley National Labs

# Ensuring The Solar Future

# Redouble Investment in Cost Reduction With A Long-Term View

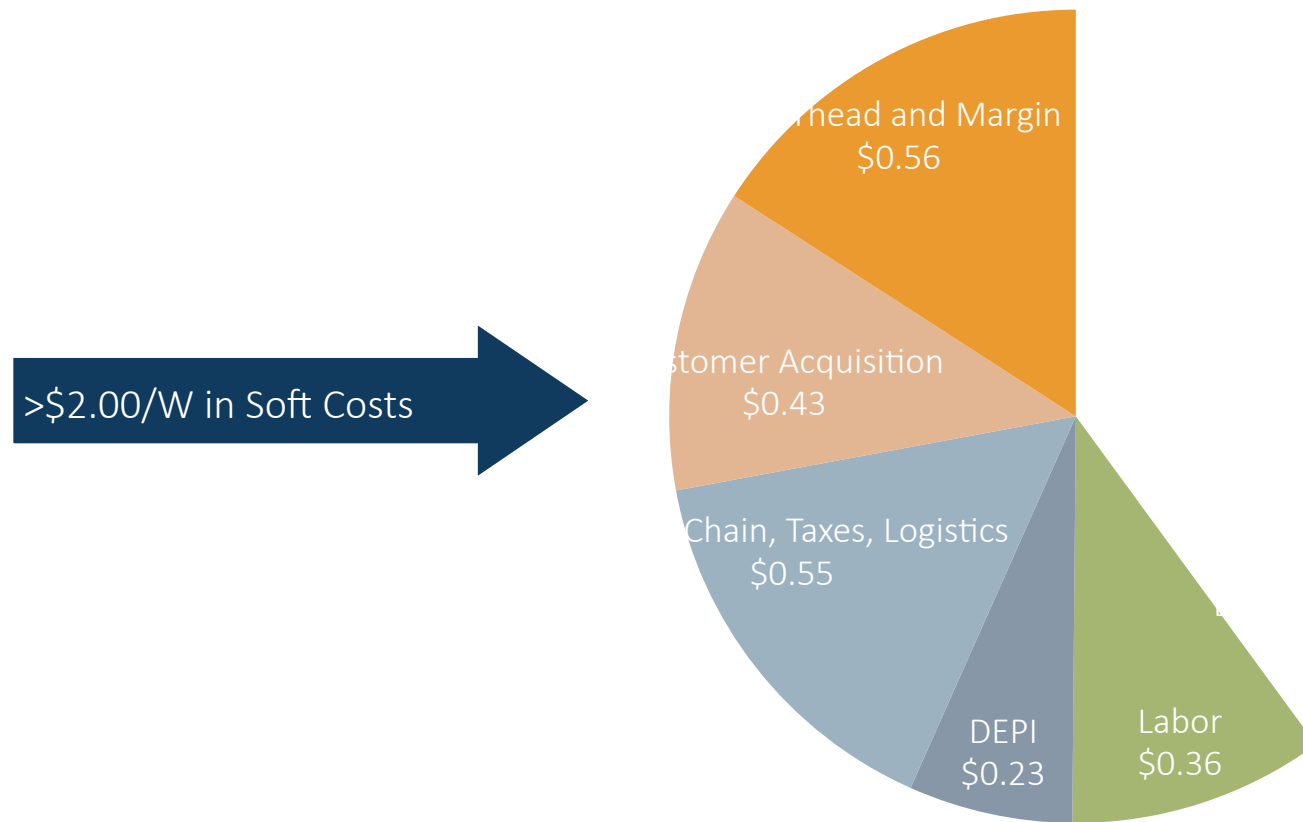
Average Residential PV System Cost Breakdown - Today



Source: GTM Research

# Redouble Investment in Cost Reduction With A Long-Term View

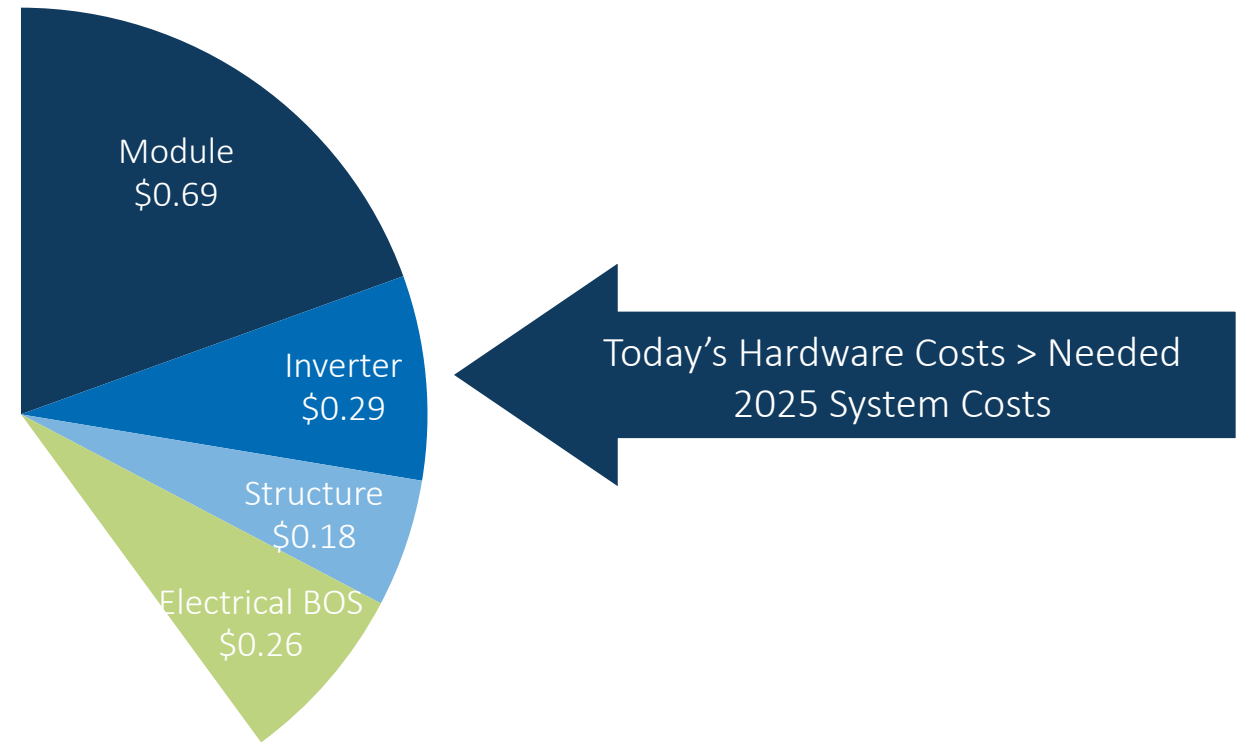
Average Residential PV System Cost Breakdown - Today



Source: GTM Research

# Redouble Investment in Cost Reduction With A Long-Term View

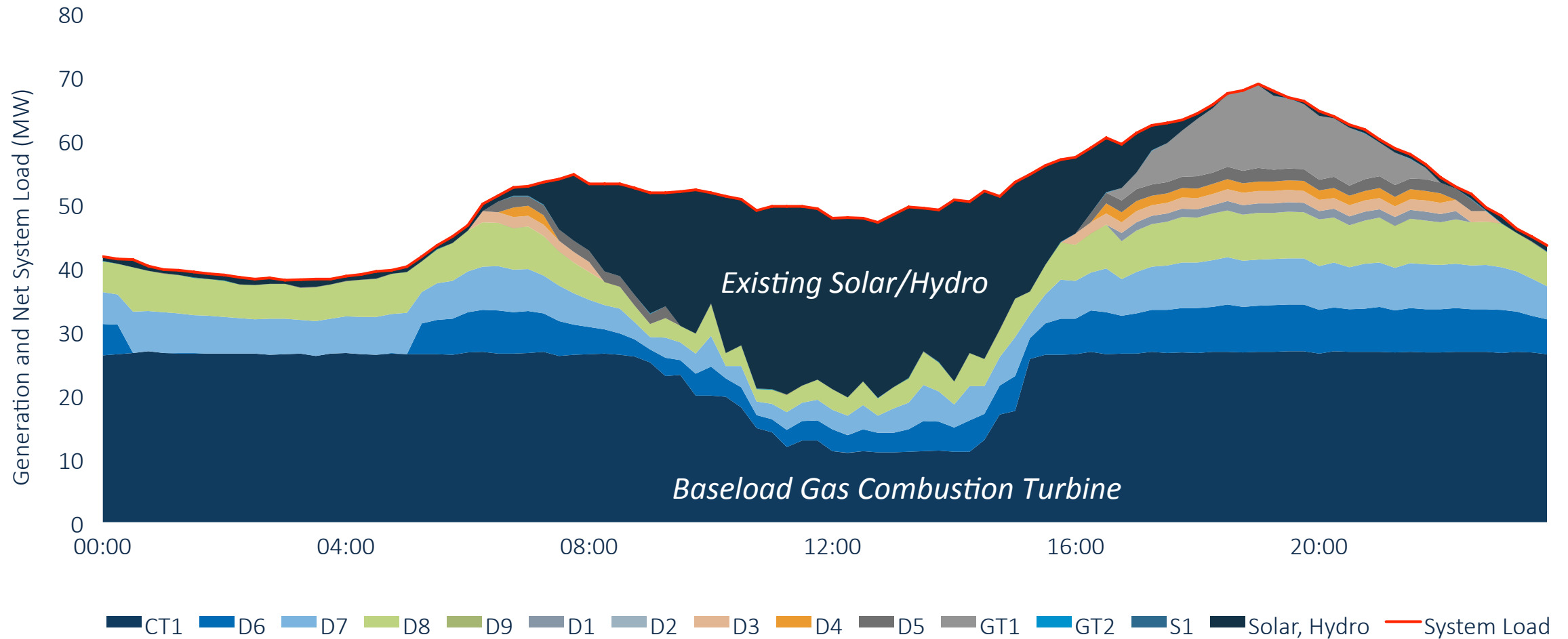
Average Residential PV System Cost Breakdown - Today



Source: GTM Research

# Energy Storage Can Make Solar A Better Long-Term Citizen Of The Grid

Example: Kauai Island Electric Cooperative (KIUC) - Today

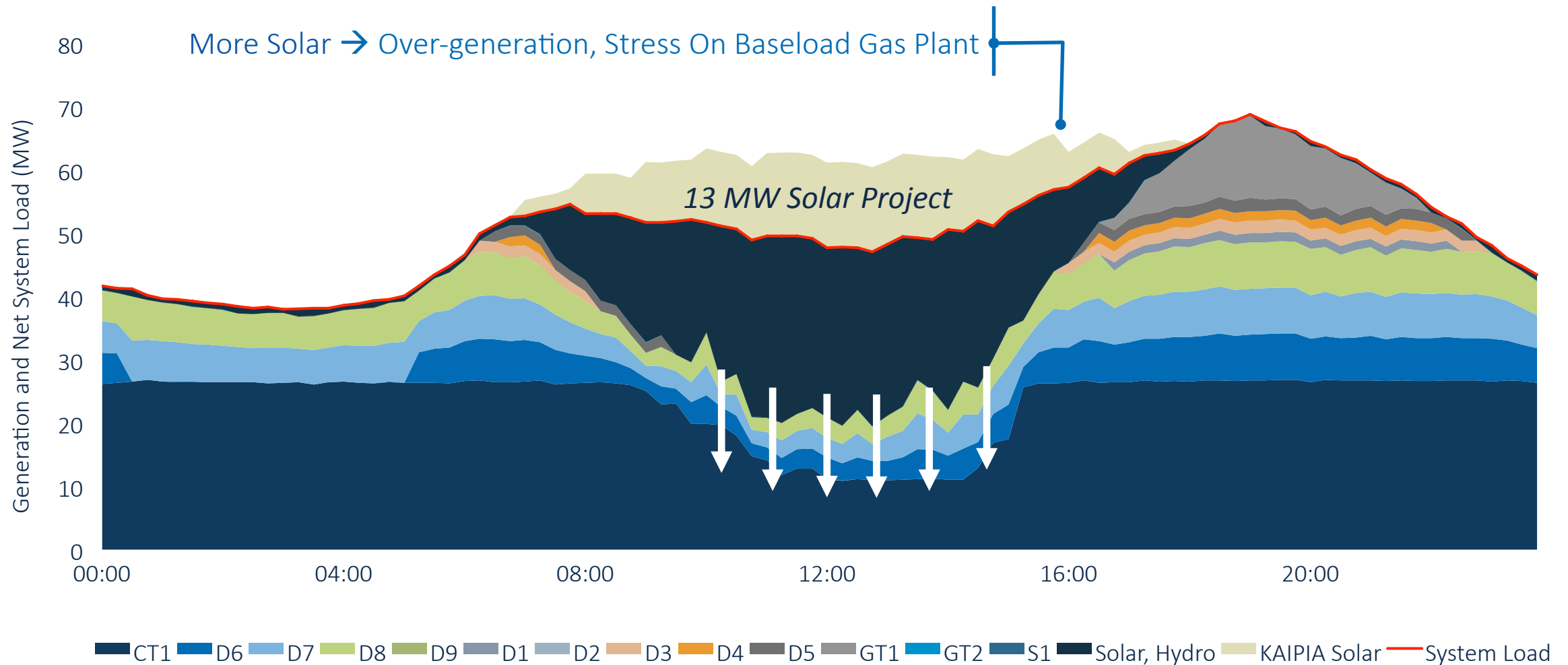


Source: KIUC based on October 14, 2015 load/generation. CT=Combustion Turbine. D=Diesel. GT=Gas Turbine. S=Solar.

Note: System load is net load after distributed solar (~21 MW operating in KIUC)

# Energy Storage Can Make Solar A Better Long-Term Citizen Of The Grid

Example: Kauai Island Electric Cooperative (KIUC) – With New 13 MWac Solar Project

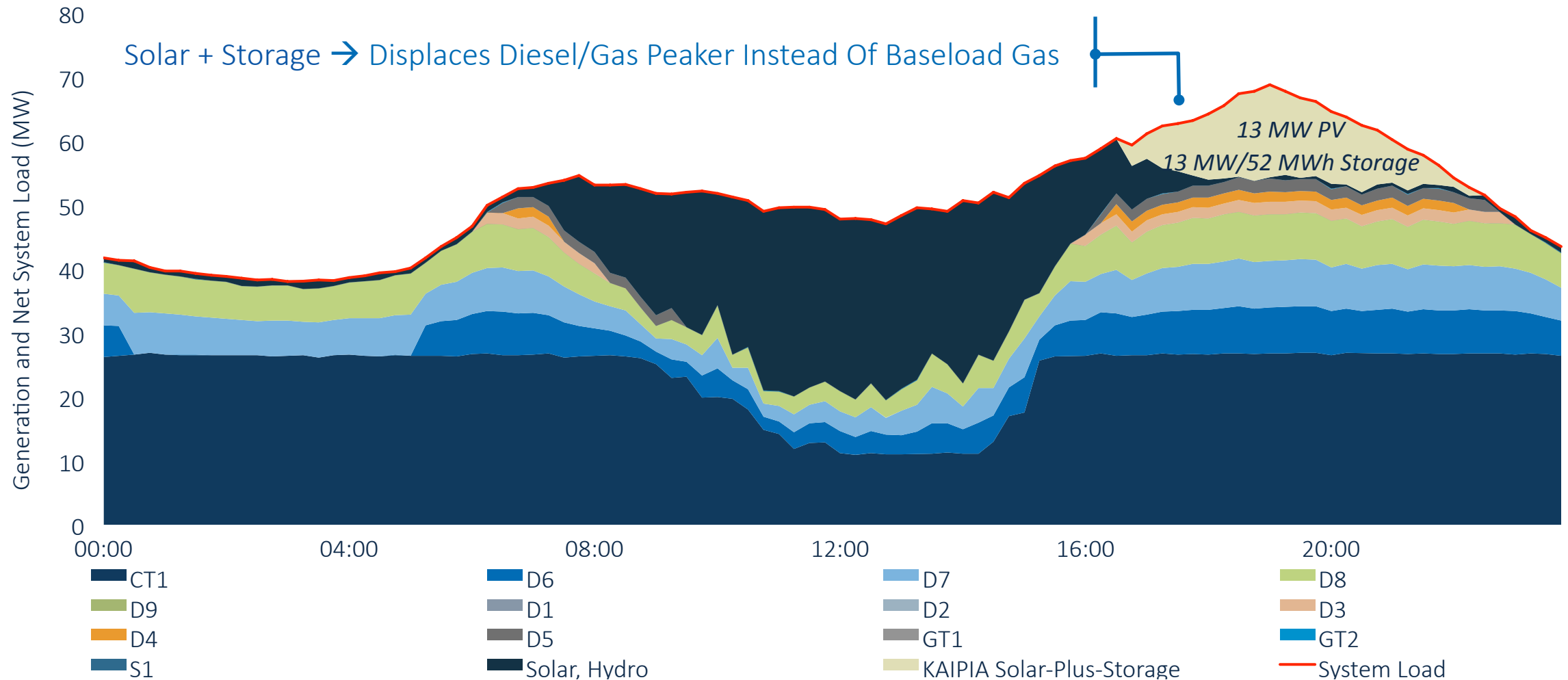


Source: KIUC, GTM Research, NREL SAM. CT=Combustion Turbine. D=Diesel. GT=Gas Turbine. S=Solar

Note: System load is net load after distributed solar (~21 MW operating in KIUC)

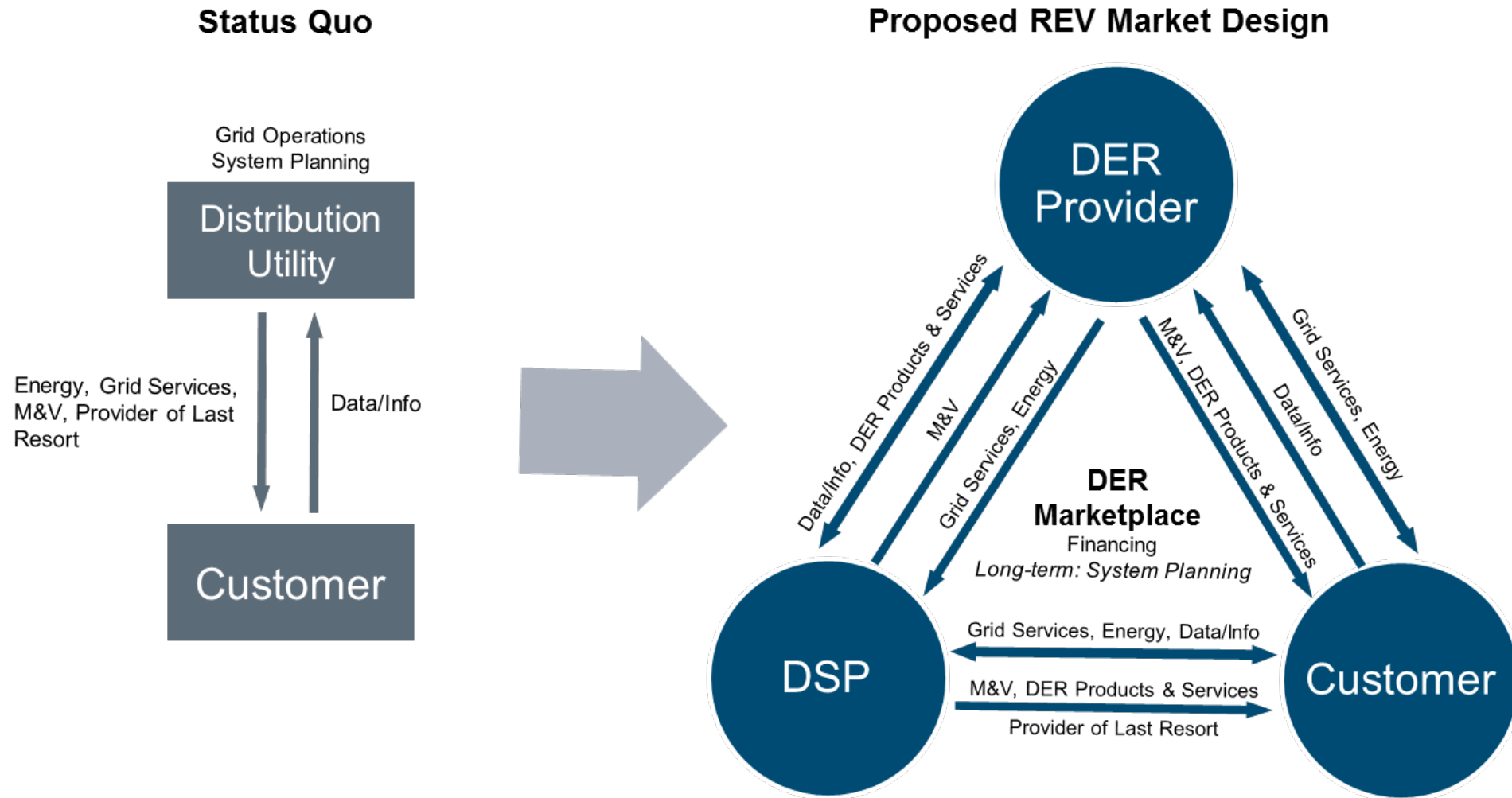
# Energy Storage Can Make Solar A Better Long-Term Citizen Of The Grid

Example: Kauai Island Electric Cooperative (KIUC) – With Planned SolarCity Solar-Plus-Storage Project



Source: KIUC, GTM Research, NREL SAM. CT=Combustion Turbine. D=Diesel. GT=Gas Turbine. S=Solar

# Pay Attention to, and Participate in, Market Reinvention



Source: Guarini Center, NYU Law, GTM Research

# Thank You!