

# Skating to Where the Local Energy Puck Will Be

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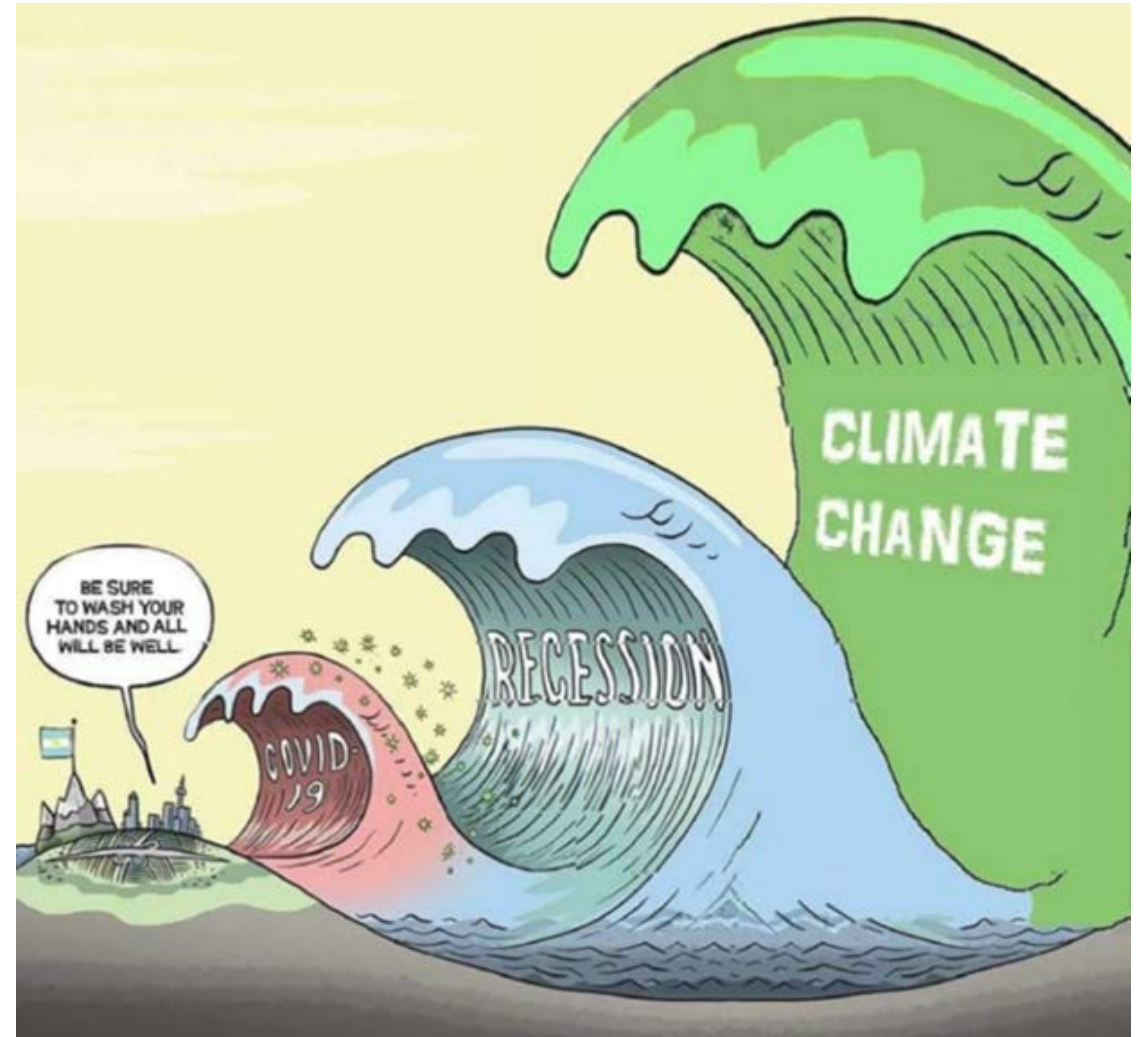
Cleantech Meetup – Future of the Grid

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# Energy Transitions

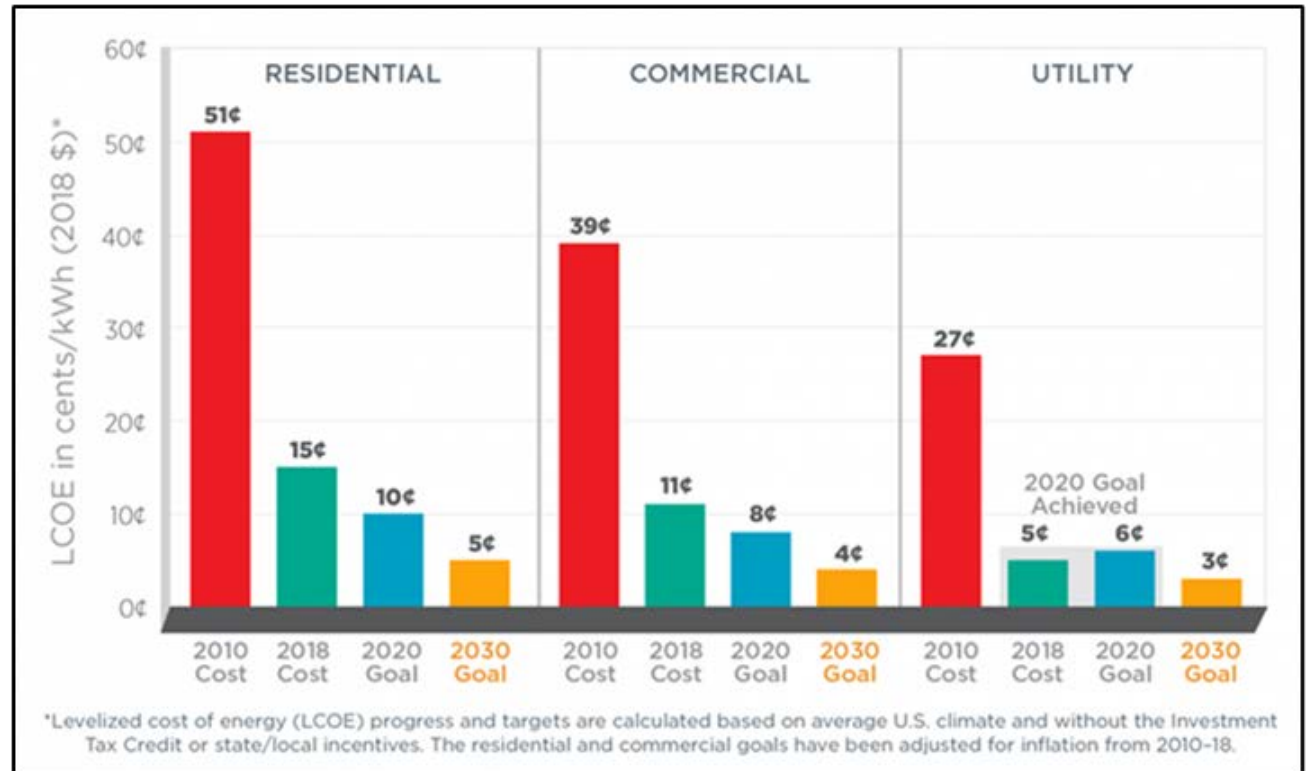
- Are we facing a sudden but persistent COVID recession, followed by an overdue cyclic recession, then followed by a long, deepening recession driven by climate change?
- Whatever the economic outcomes, decarbonization and energy resilience investments that deliver life cycle cost savings will drive local energy transitions...
- ...and local transitions will drive a global transition.
- On the front lines, product cost savings reduce customer acquisition costs; learning-driven cost reduction becomes feasible; business risks become manageable.



**Waves of Economic Disruption**

# Solar PV Trends

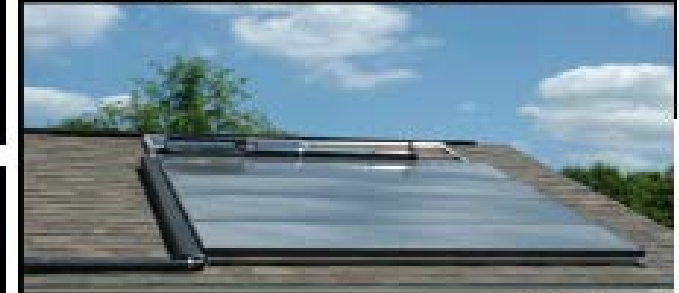
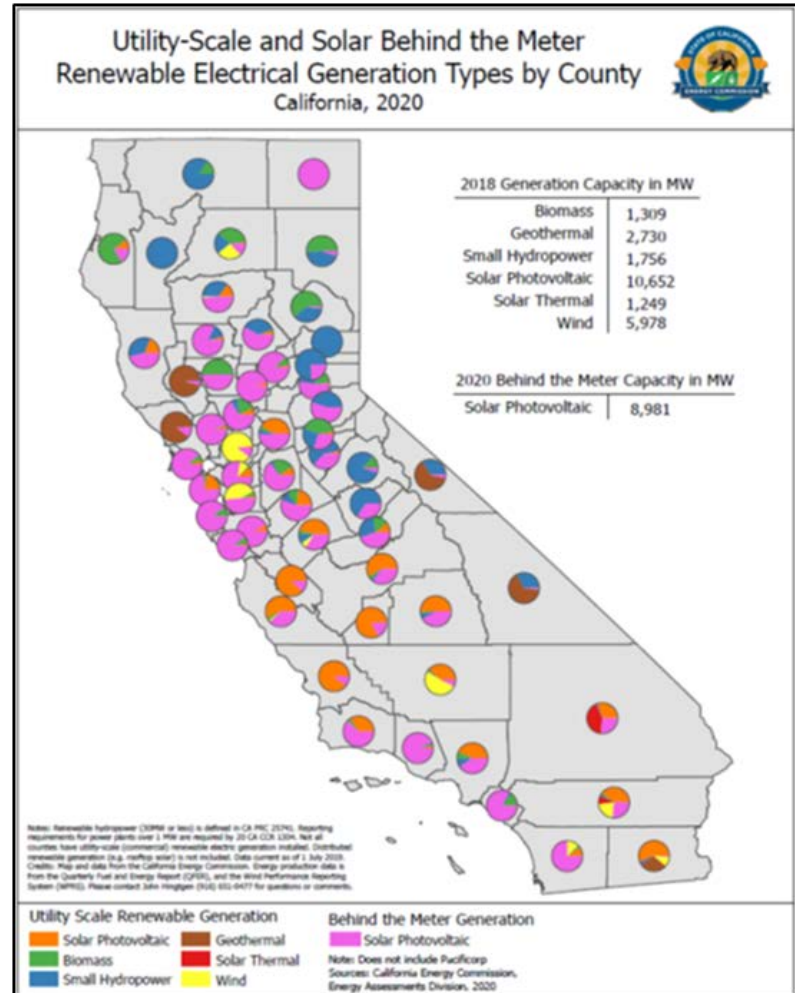
- For decades, energy policy favored large projects, while only small solar projects penciled.
- In the last decade, solar PV costs have shifted fast, enabling cost-effective projects across a five order of magnitude size range.
- Utility scale projects are now economically preferred in CA vs. other utility scale sources, while locally produced solar electricity now costs significantly less than grid electricity, while avoiding transmission costs and strengthening local economies.
- The spread between large and small project “bus bar” energy costs continues to shrink.\*



## Progress of Solar PV Cost Reduction in the US

*\*Note: Because LCOE comparisons hinge on assumptions, e.g. cost of capital and tax liability, that vary widely among market segments, they are only roughly valid within market segments where one financing method predominates, e.g. “utility”.*

# California's 1000 Piece Energy Puzzle



# 21<sup>st</sup> Century Least Cost Local Clean Energy Pathways

2020

2025

2030

Natural Gas

Renewable  
Natural Gas

Renewable  
Hydrogen

Nano and  
Giga  
Networks

Micro and  
Mini  
Networks

Smart Energy  
"Distribution"  
Networks

Nano and  
Giga Power  
Plants

Community  
Scale Power  
Plants

Integrated  
Vehicle/Bldg.  
Systems

# Thank You!

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For articles, blogs, reports, and slide decks on renewable integration and collaboration topics:

[www.iresn.org](http://www.iresn.org)

For a deeper dive on the topic of renewable energy transitions:

<https://www.iresn.org/news/2020/10/14/local-energy-transition-strategies>