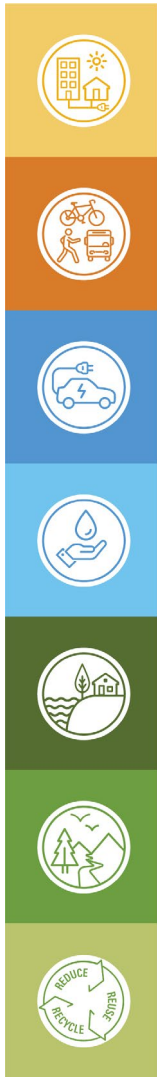




Ad Hoc Climate Action Committee Report Lessons Learned and Recommendations

September 27, 2022



- **Lessons Learned**
- Additional Questions
- Future Prospective Actions
- Recommendations for Council Direction



- Utility infrastructure and renewable capacity
- Healthy, rightsized, smart electric appliances
- EV charging - the transportation/building nexus
- Commercial building electrification
- Next goals – carbon neutrality and upstream/consumption based emissions



- State Grid Capacity

- State investments in infrastructure and storage
- High methane GHG impacts from generation and transmission – 85X worse than CO2 over 20 years



- City Grid

- Renewables are now cheap, getting cheaper, and available to meet growing demands.
- Significant current equipment supply issues
- Workforce shortages
 - PA needs to be competitive
 - Aggressive statewide workforce development is critical





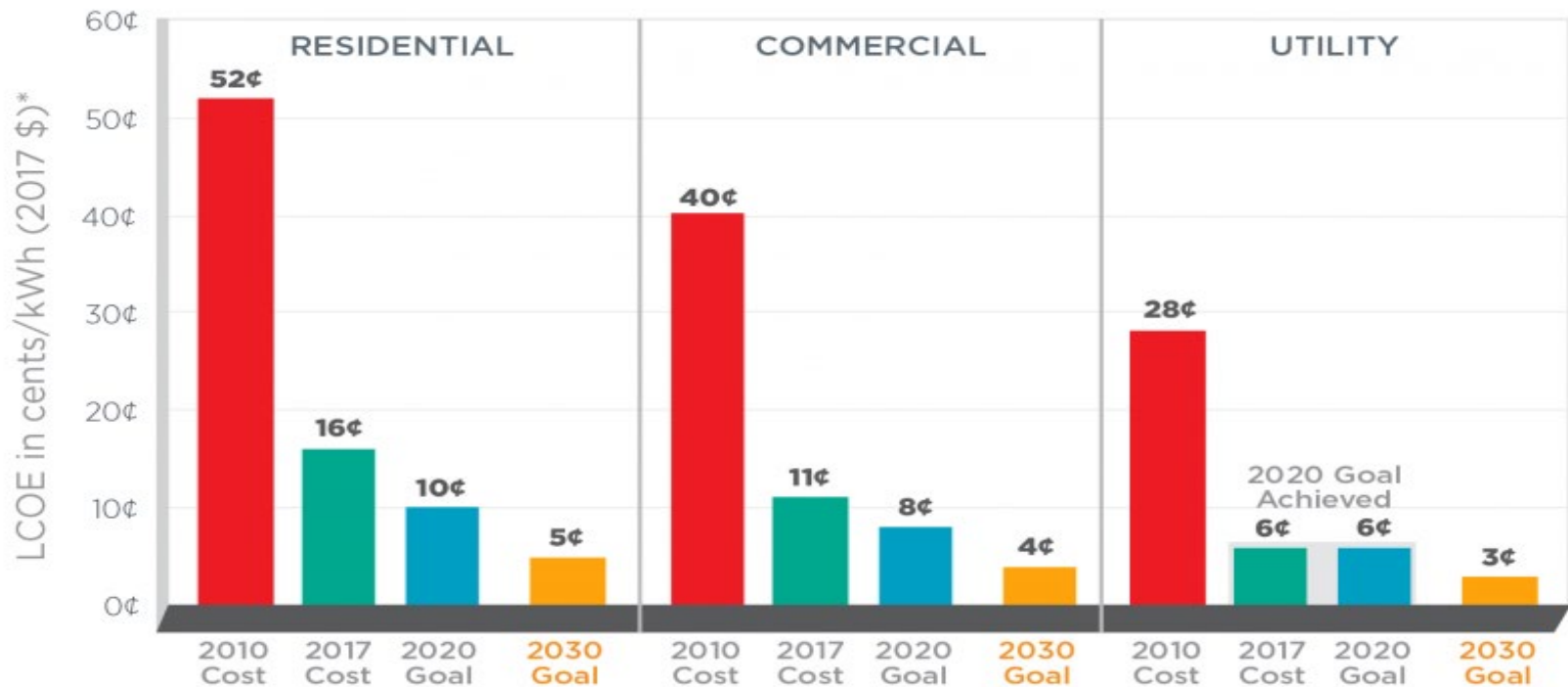
LA Times Op-Ed:

California's giant new batteries kept the lights on during the heat wave



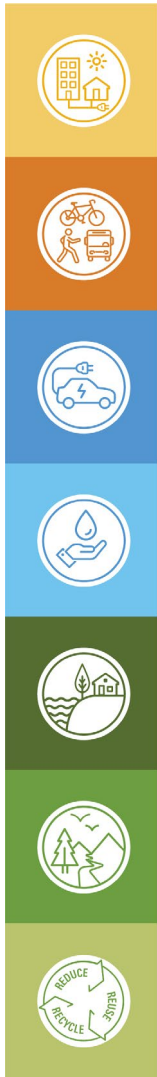
Solar is now the cheapest form of energy in California and its cost is declining

SunShot Progress and Goals



*Levelized cost of energy (LCOE) progress and targets are calculated based on average U.S. climate and without the ITC or state/local incentives. The residential and commercial goals have been adjusted for inflation from 2010-17.

<https://www.energy.gov/eere/solar/sunshot-2030#:~:text=2030%20Goals%20Detailed,contributing%20to%20greater%20energy%20affordability>



- Low-watt appliances
 - Reduce grid upgrade stresses
 - Reduce electrification costs to residents
- Healthier and more comfortable homes

Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking:

“children living in a home with gas cooking have a 42% increased risk of having current asthma, a 24% increased risk of lifetime asthma and an overall 32% increased risk of having current and lifetime asthma.”

<https://academic.oup.com/ije/article/42/6/1724/737113?login=false>

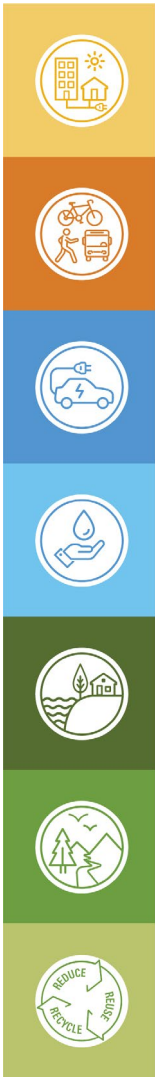
The transportation/building connection

- “Oversized” home EV chargers are stressing our utility in residential areas
 - Most homes are installing bigger chargers than are needed, driving panel and transformer upgrades.
- Future EVs will be a backbone of “distributed storage”
 - Reduce the scale of grid upgrades needed
 - Save consumers costs by charging when electricity is cheapest and greenest, and supplying power when electricity is most in demand and expensive



- Replacing methane-based rooftop “Gas Packs” upon End-of-Life (EOL) is efficient and provides healthier buildings for workers





- Palo Alto lacks a “Carbon-Neutrality” Goal
 - Leading cities and governments have adopted these goals as a key climate metric
 - CARB defines Carbon-Neutrality as carbon-reductions and offsets or sequestration
 - Palo Alto is already on a strong path to 2030 Carbon-Neutrality