

Local Solar and Storage--Benefits to the Grid and Your Community



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Vision and Goals

- Local Economic Development and Job Creation
- Clean Air and Resilient Community
- Statewide Greenhouse Gas Emissions 40% below 1990 level by 2030
- 100 Percent Carbon-free Electricity by 2050 –
 - Need Clean Energy Everywhere
 - Smart and Flexible Grid
- 1.5 Million Electric Vehicles by 2025

Benefits to Electric Grid

- Local solar and storage saves CA ratepayers money by avoiding transmission upgrades
- CAISO determined Central Valley Power Connect project (70-to-100-mile transmission line) costing \$115 to \$145 million **may no longer be necessary** due to the forecasted increases in the development of distributed energy resources
- 2016 PG&E announced cancellation of 13 transmission projects due to energy efficiency and rooftop solar--\$192 million in transmission cost savings
- Local solar part of smart grid –reduce marginal impacts of peak conditions
- Storage is dynamic
 - Potential to export during ramping periods or absorb energy during over-generation
 - Capacity and ramping benefits

Benefits to Your Community

- Solar customers are investing in the build out of a cleaner grid of the future, reducing costs for all ratepayers
- Job creation – local solar supports over 100,000 California jobs
 - Perspective: Twice the number of jobs at the state’s five largest utilities combined (PG&E, SCE, LADWP, SDG&E, SMUD)
 - Growing: doubled in last two years
- Marginal cost to generate electricity is positively correlated with emissions
 - Battering store inexpensive energy and use it during times when costs are high
 - Significantly reduce emissions and strain on the grid
- Distribution line extensions to serve new housing development might be designed differently to account for the ZNE mandate

2019 Building Codes

- California Energy Commission developing – informal draft released and taking comments
- As drafted, 2019 Building Codes not true zero net energy homes
- CA very good at energy efficiency; largest source is plug loads
- Energy Efficiency and Solar and Storage all compliment each other
- Solar PV Cost-effective in all 15 climate zones
 - Draft: Require ~2.5 kW solar PV on new homes

CALSEIA and SEIA Recommendations

- The 2019 standards should take California all the way to Zero Net Energy for new homes—promoted for past decade.
- Holistic and flexible approach— maintain compliance credit for PV systems, as modified by a PV plus storage strategy
- Continued dialog on assumptions for cost of PV and storage systems, as well as efficiency measures

2019 California Building Codes—Storage

- 2025 California Demand Response Potential Study – need to shift customer usage to complement abundant day-time solar
- Allow storage to provide an overall energy design rating (EDR) credit value: storage paired with solar can dynamically and reliably reduce overall electric load at any time of day
- As storage prices continue to decrease, they will become cost-competitive with efficiency measures
- Add solar-plus-storage as additional compliance pathway gives builders flexibility at the lowest possible cost to the customer

What You Can Do for Your Community

- As drafted, 2019 Building Codes not true zero net energy homes
- Local stretch goal building codes and model ordinance
 - Local solar ordinance: San Mateo, Palo Alto, San Francisco, Fremont
 - Local solar new building requirements: Lancaster, Sebastopol, San Francisco, Santa Monica (plus ZNE reach goal)
- Work with your building officials, local utility and private sector to experiment with local solar and storage deployment
- Send proper price signals for local solar and storage deployment

Thank you!

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