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
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.
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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