Solar on New Homes
Western Million Solar Roofs Peer-to-Peer Workshop
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Renewable Energy Program

California Energy Commission

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Governor's
State of the State Speech

"I'm going to encourage builders to build homes using partial solar power … I intend to show the world that economic growth and the environment can coexist."

Solar Activities

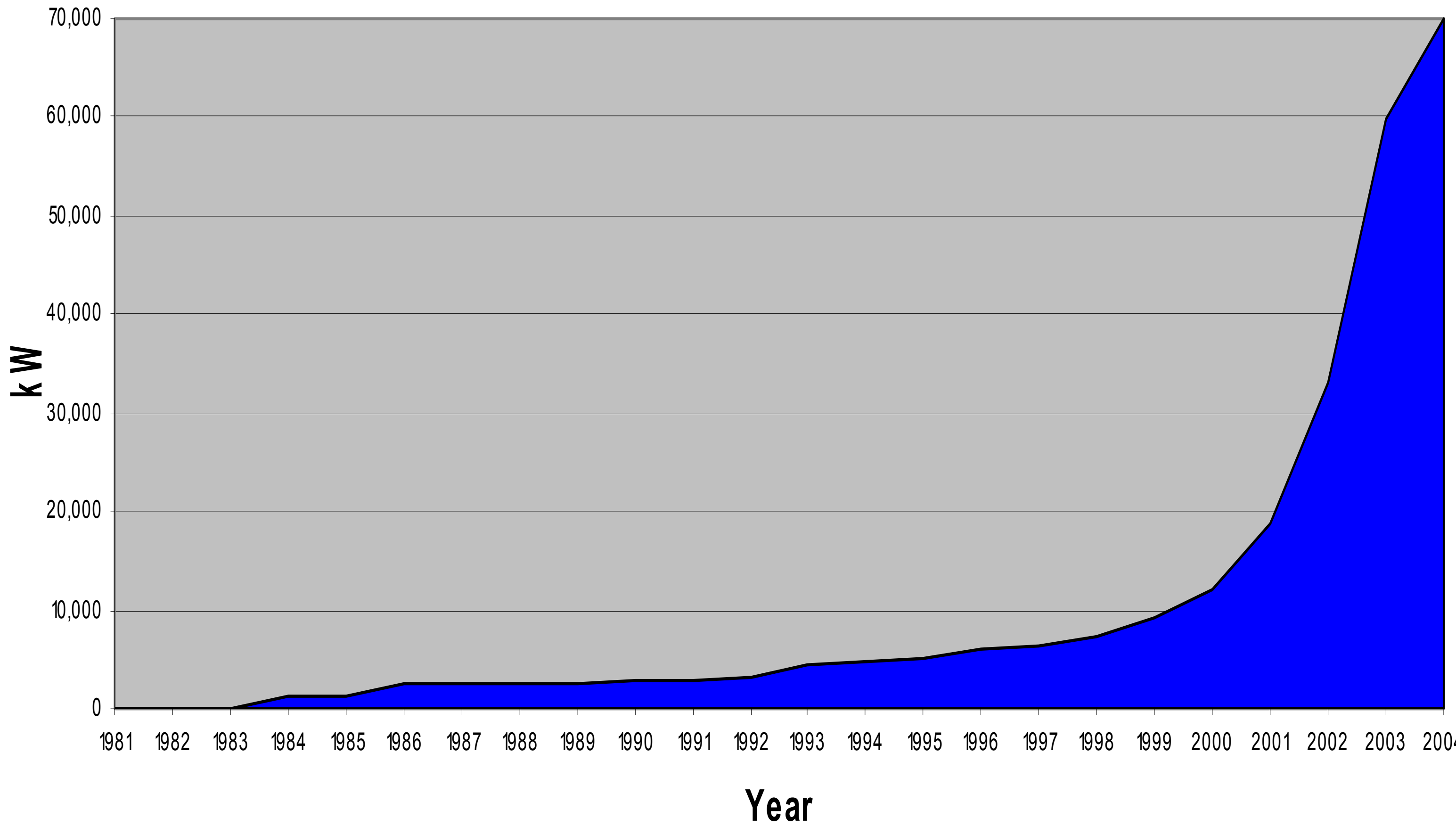
- Kema-Xenergy developed modeling tool used for evaluating solar policy options
- CEC working closely with the California Environmental Protection Agency, which has lead role on Governor's solar initiative
- California PV Initiative with Navigant Consulting
  - Create sustainable business model for residential sector
  - Tie-in with Zero Energy Homes
- PIER Zero Energy Homes Programmatic Solicitation

Retrofit Market

- Driver:
  - Tiered rate structure
  - Environmental commitment (distant second)
- Obstacles:
  - Capital cost/financing
  - Customer research and hassle factor
  - Fragmented market with quality issues
  - Possible site imperfections

Grid-Connected PV Capacity Installed in California

Cumulative



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New Home Market

- 130,000 new single-family homes per year in California
- To date, about 1000 new homes build with PV
- PV is one of many new features available to builders
- Builders concerned with reliability and warrantees
- Customers aren't demanding PV
- 50% penetration of PV on new homes = 100+ MW
  - All PV installed in CA in 2003 = 27 MW

New Housing Market

- PV Drivers:
  - Roll financing into mortgage - potential for positive cash flow
  - No hassle for customer - PV part of new home
  - Lower equipment and installation costs
- PV Obstacles:
  - Builder acceptance – PV system cost

Public Policy Drivers

- New homes located in Central Valley – air conditioning has impact on super peak load
  - IOU's short on super peak capacity/energy
  - Reducing peak load drops spot prices for all
  - Solar generation is well matched with super peak
- PV costs drop with substantial market penetration
  - Standardization of systems, installation and warrantees with demand
  - Transaction costs reduced by buying from manufacturer

Policy Conclusions

- Policy support needed for market penetration in the mass market sector
- Both builder and consumer incentives needed to achieve substantial PV penetration
- Many opportunities for leveraging public dollars
  - RECs purchases
  - Incentives to municipalities for PV homes
  - Favorable PV rates from lenders
- Selection of incentive depends on target, perceived value/public dollars and transaction costs

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Next Steps

- Continue coordination with Cal EPA on Governor's Solar Initiative
- Explore customer financing incentives with the lending community
- Explore incentive mechanisms with builders and local governments
- Explore how investor-owned utilities can deliver PV to their customers
- California PV Initiative with focus on residential new construction and achieving Zero Energy Homes

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