



SOLAR WEST

ALBERTA'S RESIDENTIAL AND COMMERCIAL SOLAR PROGRAM

May 9-11, 2017 | Edmonton, Alberta

PHILIPPE DUNSKY

President



DUNSKY OVERVIEW



CLIENTELE

- ▶ Governments
- ▶ Utilities
- ▶ Private firms
- ▶ Non-profits

EXPERTISE

- ▶ **Energy Efficiency** & Demand Management
- ▶ **Renewable Energy** & Distributed Resources
- ▶ **Clean Mobility**

SERVICES

- ▶ **ASSESS** clean energy opportunities
- ▶ **DESIGN** policies, plans, programs and strategies
- ▶ **EVALUATE** performance

DUNSKY'S SOLAR PRACTICE



TECHNICAL

- RESOURCE ASSESSMENTS
- COST-BENEFIT ANALYSIS
- MARKET FORECASTS
- VALUE OF SOLAR

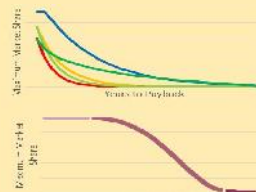
STRATEGIC

- PROGRAM DESIGN
- POLICY DESIGN
- BUSINESS MODELS
- OTHER SERVICES

SOLAR ADOPTION MODEL (SAM)



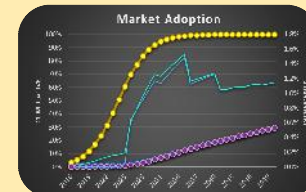
TECHNICAL



ECONOMIC



DEMAND



ADOPTION



SCOPE OF WORK



**ALBERTA RESIDENTIAL AND
COMMERCIAL SOLAR PROGRAM
DESIGN
FINAL REPORT**

PREPARED BY:
DUNSKY ENERGY CONSULTING

Submitted to: Steven Ottoni, Senior Policy Analyst
Alberta Climate Change Office

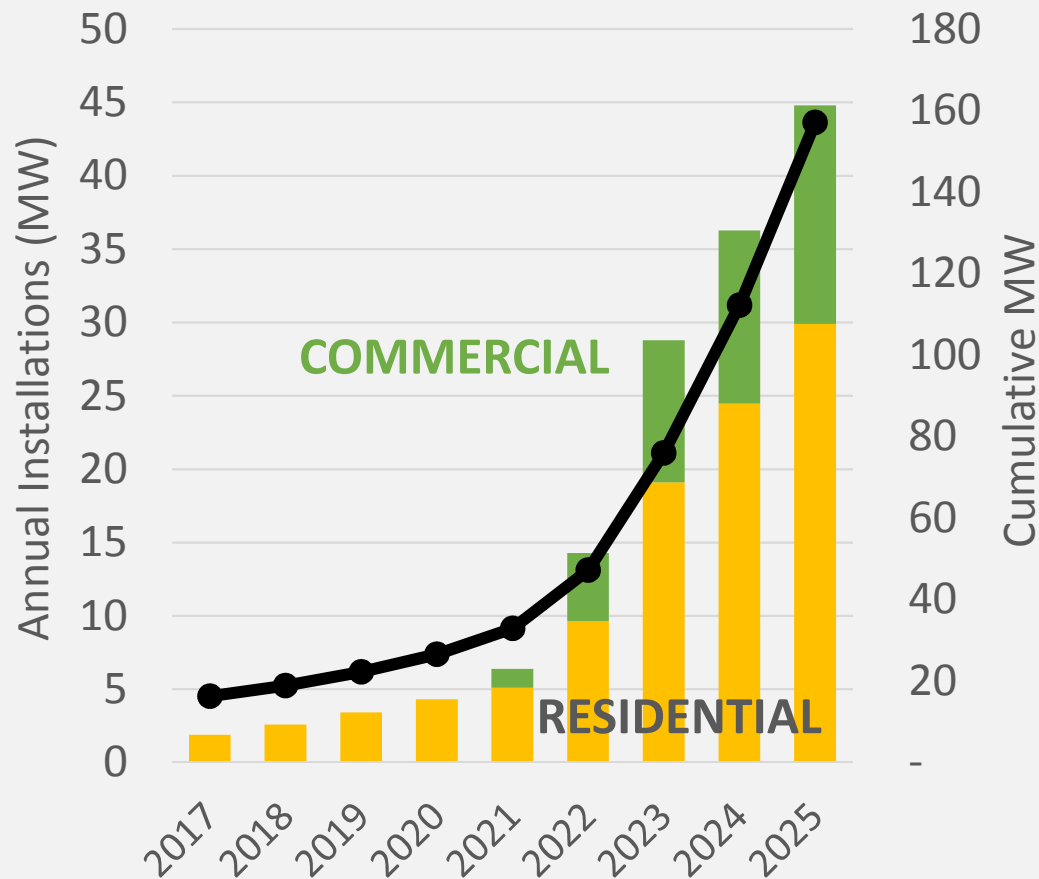
April 2017

דאנסקי אנרגי קאנסולטינג | אינפארמאציע | 1-800-387-4444 | www.dunsky.com

- Baseline adoption
- Options to accelerate adoption
- Consult government and stakeholders
- Design incentive program (targets, costs and other impacts)
- Accelerated adoption forecast

NOTE: CUSTOMER-SITED SOLAR ONLY
(Community and Utility solar excluded for now)

BASELINE DEMAND | 2017-2025

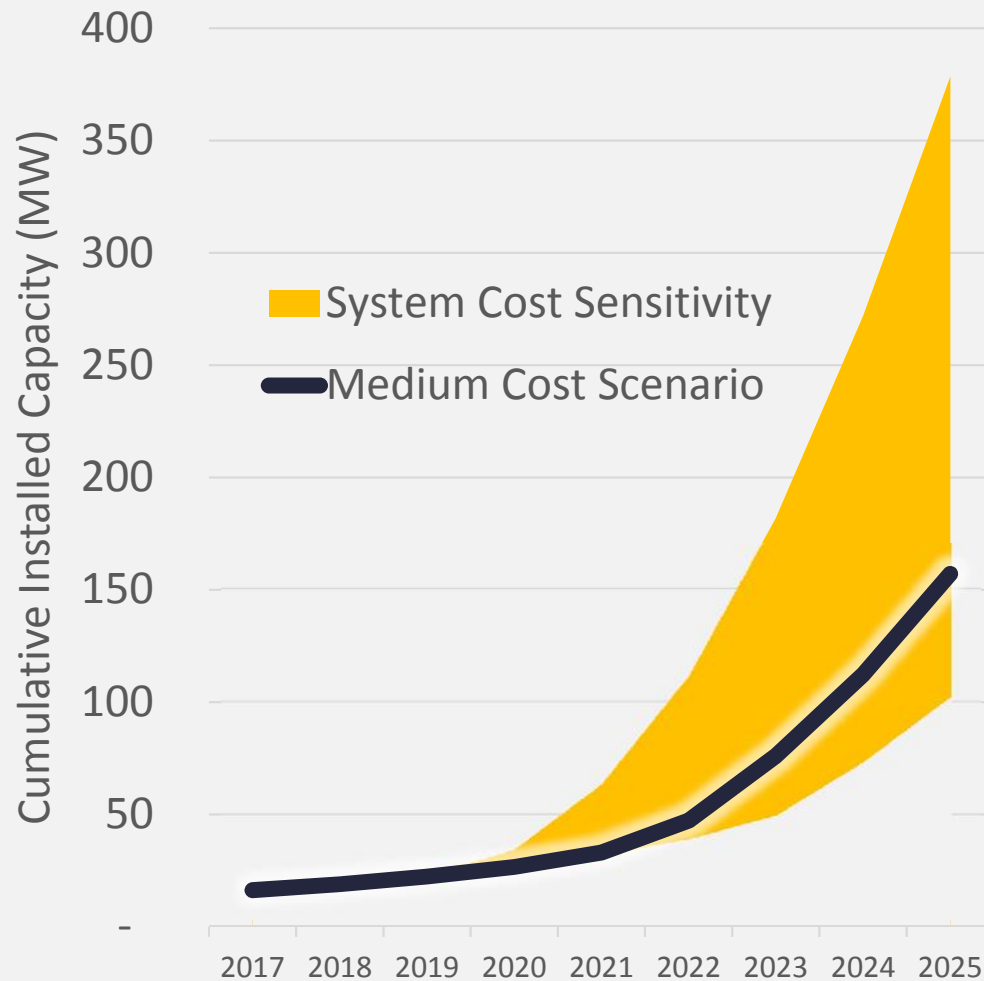


■ **160 MW by 2025**

■ **Residential-driven**

- ▶ **Residential:** less price-sensitive
- ▶ **Commercial:** early adopters already leveraged through CCEMC and Growing Forward program

BASELINE DEMAND | SENSITIVITY



- Strong sensitivity to PV system costs
- Significant sensitivity to availability of leasing
 - ▶ Baseline assumes no solar leasing in Alberta (CCEMC support for ENMAX lease removed)
- Uncertainty re. future AB energy prices



Energy
Efficiency
Alberta

SOLAR PROGRAM



■ CONSTRAINTS

- ▶ Budget
- ▶ Timeframe (2yrs)
- ▶ Complement other programs (farms, munis, indig. comm's)

■ PRINCIPLES

- ▶ Accelerate early adopters
- ▶ Smooth landing post-program
- ▶ Align with microgen and NM regs
- ▶ Administrative simplicity / speed

■ SCENARIO ANALYSIS

- ▶ Incentive levels (10¢/W to \$1/W) & Duration (1 to 5 years)
- ▶ Incentive structures (stepped-down vs. steady)
- ▶ Iterative approach to different program permutations

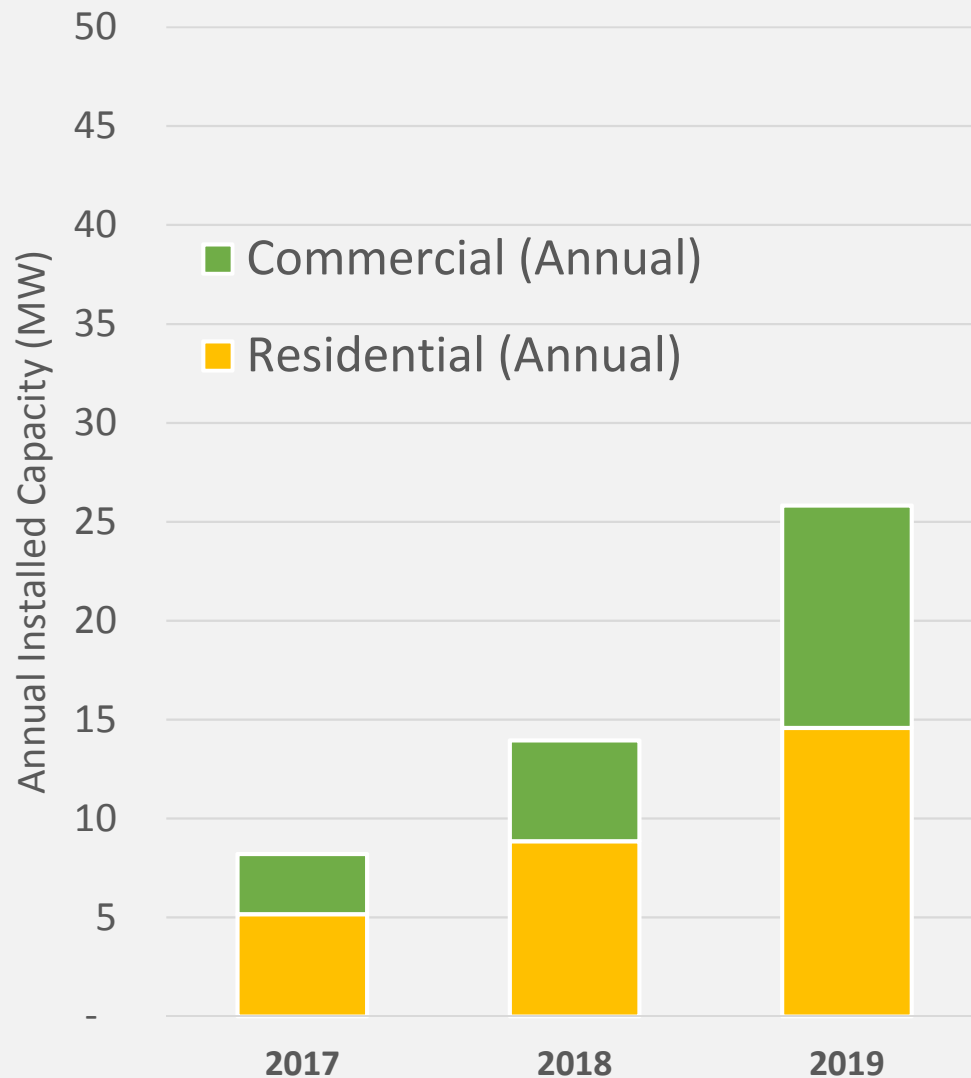
DESIGN | FINAL PROGRAM



- **Two-year program | \$36M** in incentives
- **\$0.75/W incentive** across the board*
- **Caps**
 - ▶ Residential: Lesser of \$10,000 or 30% of eligible costs
 - ▶ Commercial: Lesser of \$500,000 or 25% of eligible costs
- **Second phase to follow**
(incentives TBD based on market conditions)

* **Residential and Commercial customer incentive levels were reached independently.** While counterintuitive, they account for unique market characteristics including historic, sector-level activity in Alberta.

DESIGN | PROJECTED UPTAKE



48 MW



5-10k systems

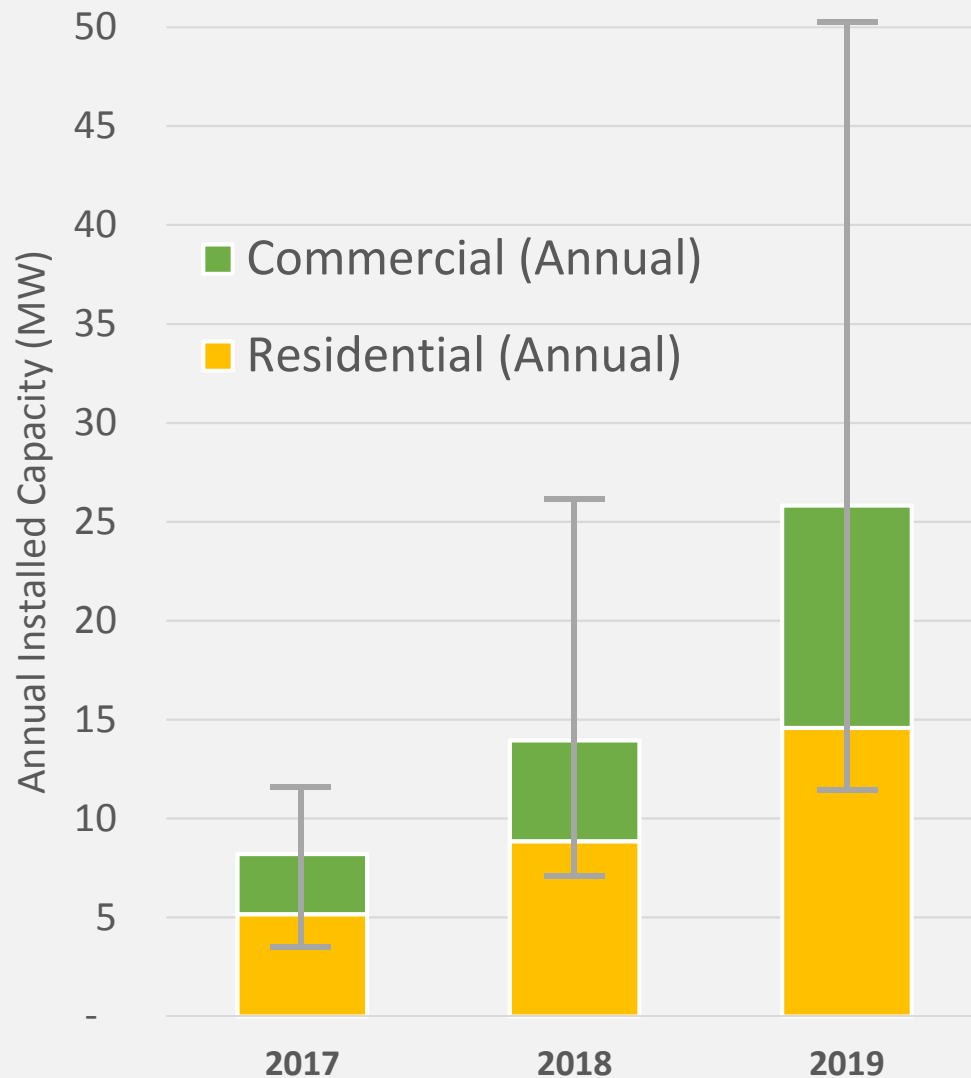


900 FTEs



500 kt CO₂-eq

DESIGN | PROJECTED UPTAKE



48 MW



5-10k systems



900 FTEs



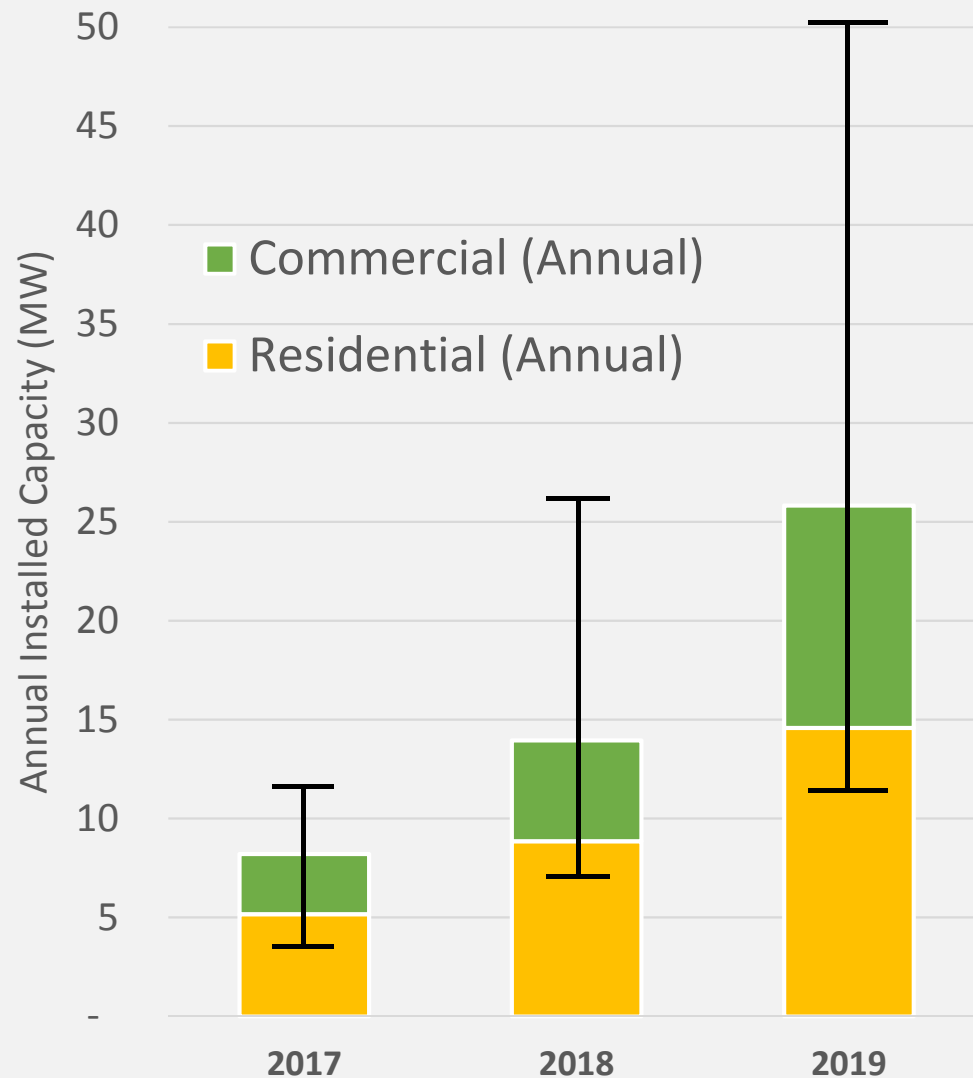
500 kt CO₂-eq



Sensitivities

- Cost
- Leasing

DESIGN | PROJECTED UPTAKE

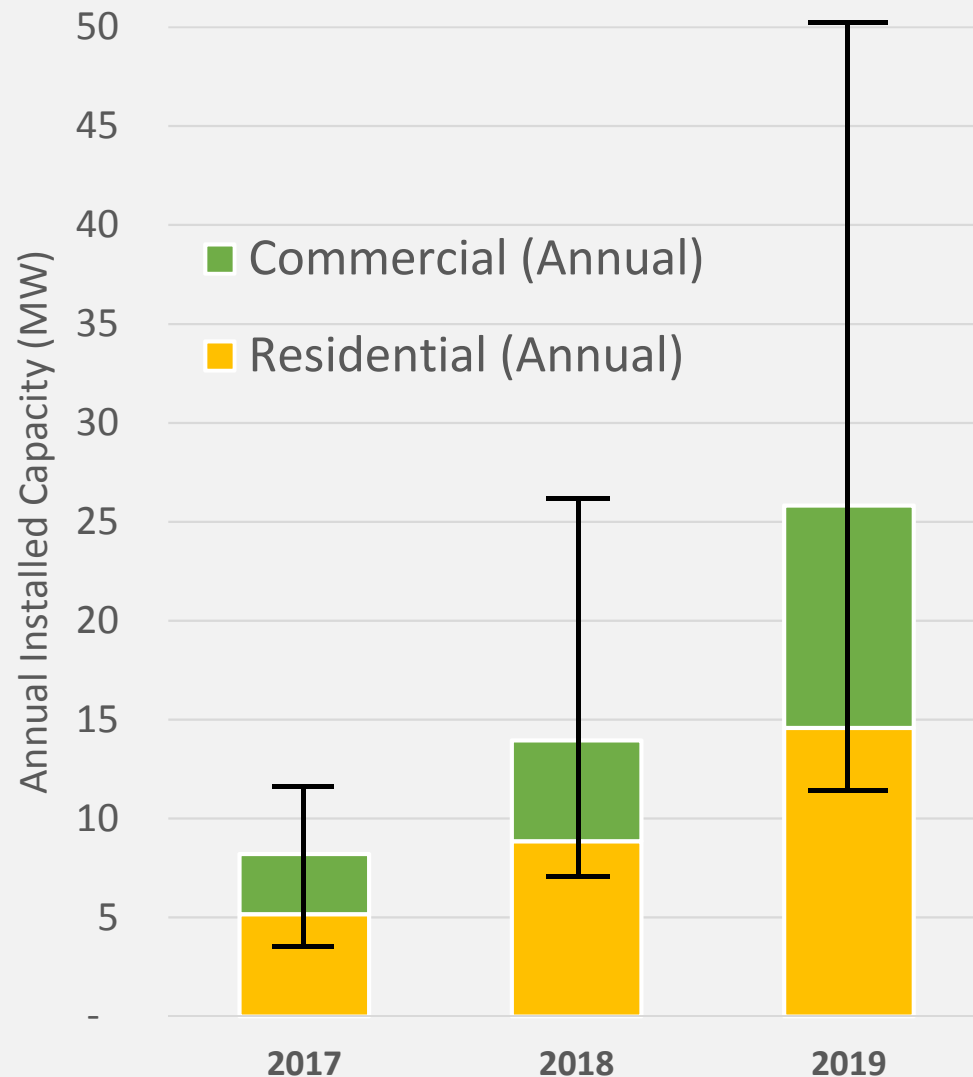


RISK & MITIGATION

PRICE: +40MW | -18MW

LEASING: +0MW | -18MW

DESIGN | PROJECTED UPTAKE



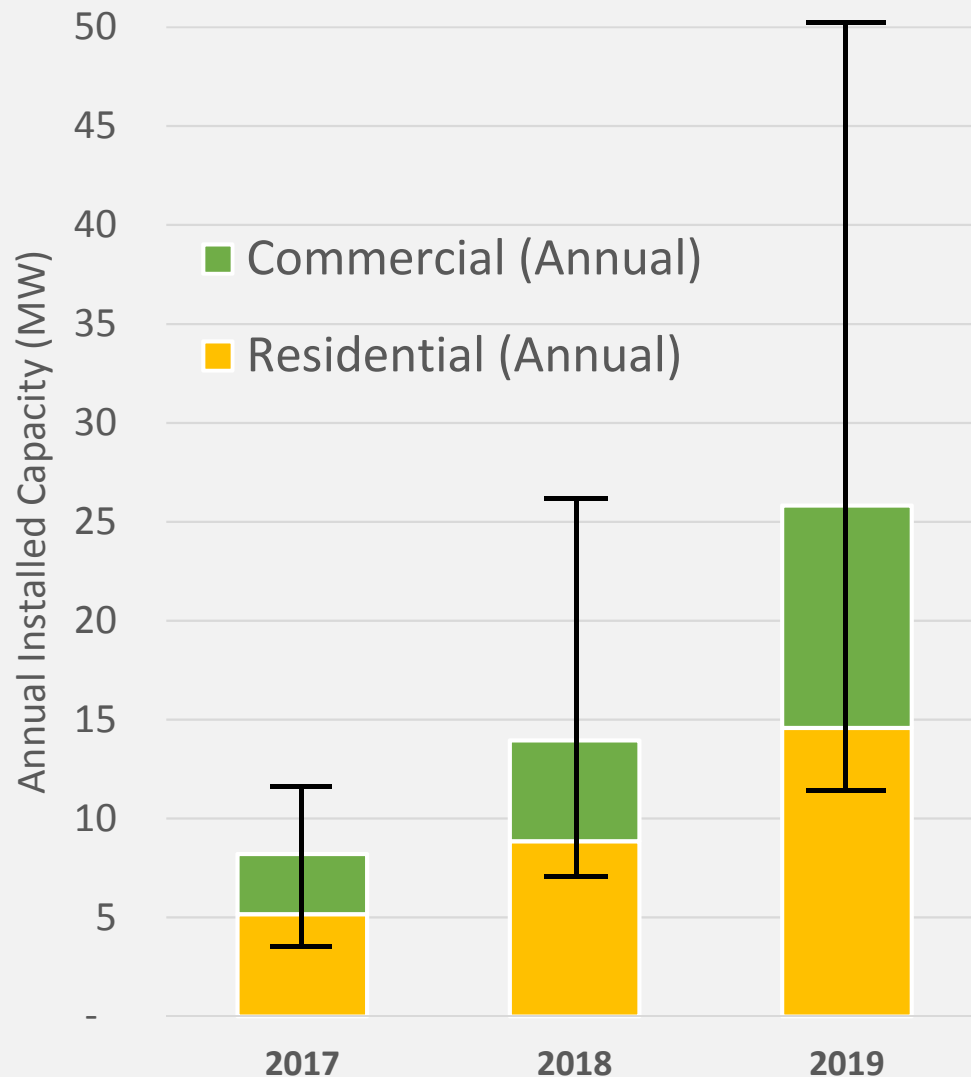
RISK & MITIGATION

PRICE: +40MW | -18MW

- ▶ Monitor and track system prices
- ▶ Revisit incentives after 2 years
- ▶ Cap incentives (/customer, /yr)

LEASING: +0MW | -18MW

DESIGN | PROJECTED UPTAKE



RISK & MITIGATION

PRICE: +40MW | -18MW

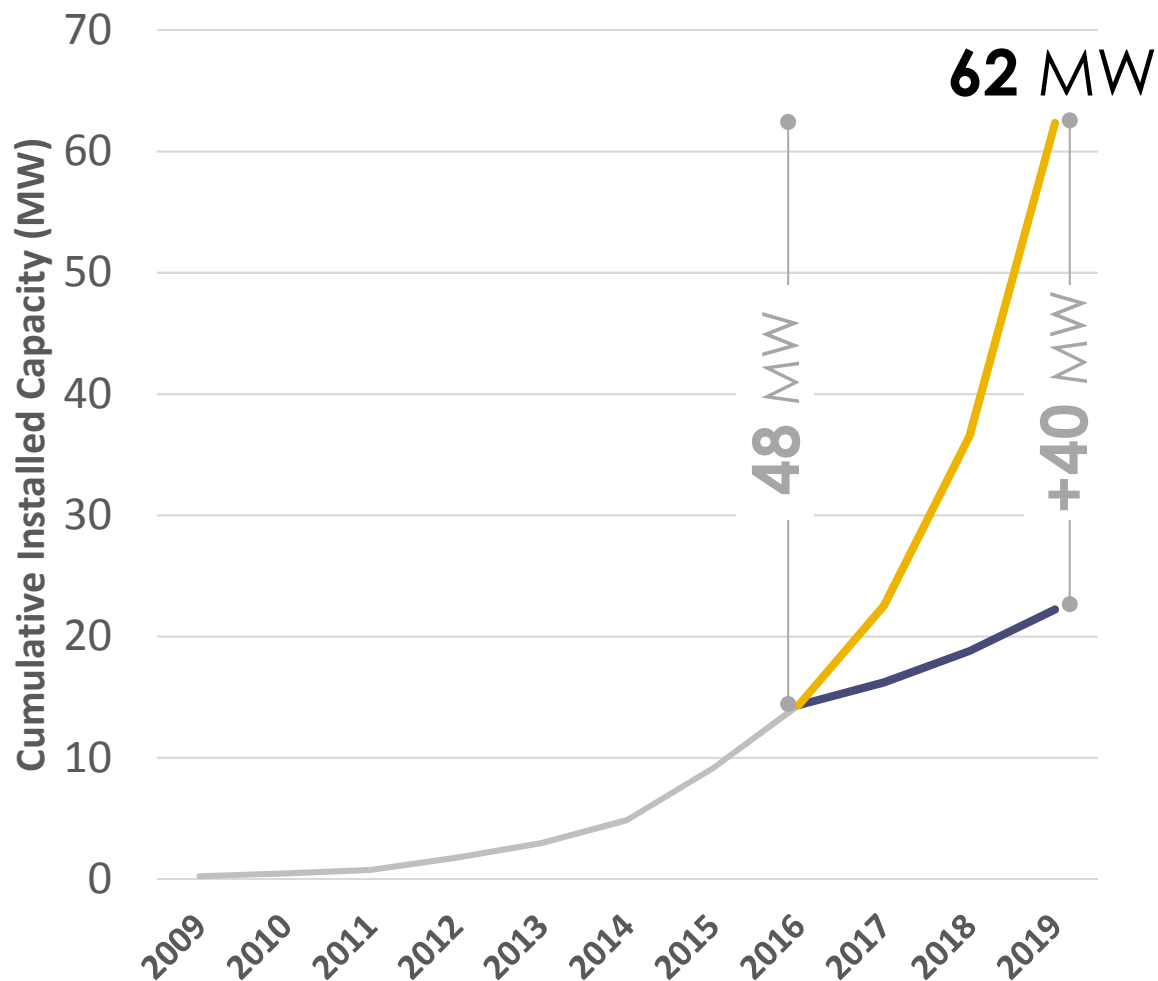
LEASING: +0MW | -18MW

- ▶ Allow leased systems to participate
- ▶ Explore streamlined process to allow incentive to offset down-payment and/or reduce monthly lease payments

Note: Third-party ownership models popular in CA and other solar-friendly regions, especially at initial ramp-up

GOING FORWARD

GOING FORWARD | TO 2019



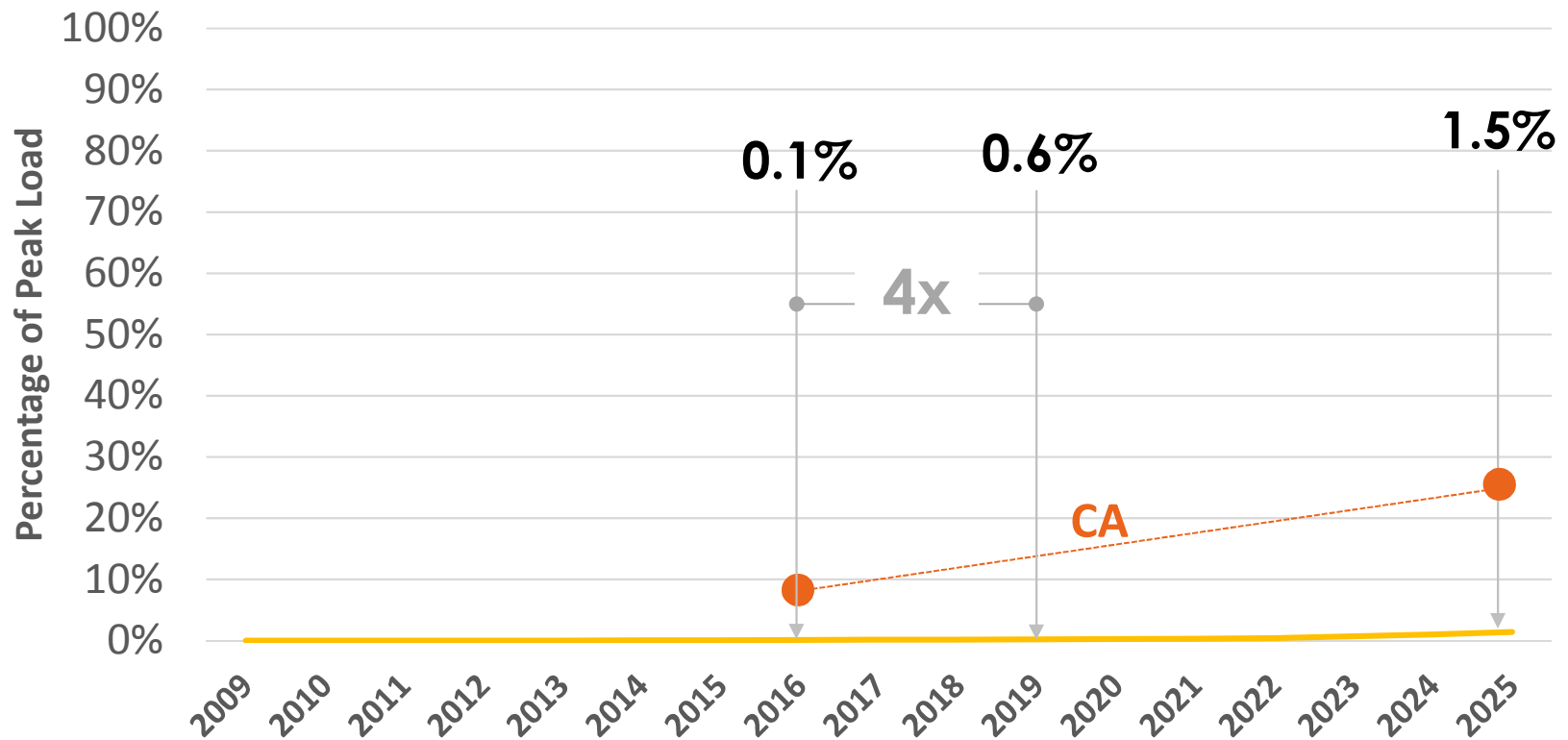
**4X growth by
2019 (to 62 MW)**

**7X more than
baseline**

GOING FORWARD | ENOUGH?



- Program will more than quadruple existing capacity by 2019, yet **substantive penetration will require more.**





CUSTOMER-SITED: FINE-TUNE PROGRAM

- ▶ Encourage solar leasing
- ▶ Track PV and energy prices, and adjust incentives if needed
- ▶ Prepare for the next phase... well in advance!

LARGER-SCALE: DESIGN NEW STRATEGIES

- ▶ **Community Solar:** Dunsky working with Gov (VNM, technical, financial and legal support)
- ▶ **Utility Solar:** Next stage...

QUESTIONS ?

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