

# Solar Homes Bill SB 1

## Facilitating SHARP™'s Solar Energy Market Domination

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EEP 142

# Overview of Solar Homes Bill SB 1

- Background
  - Co-authored by State Senator Kevin Murray (D-Los Angeles) and Senator John Campbell (R-Irvine)
  - Relates to Gov. Schwarzenegger's goal of installing one million solar systems over the next ten years
  - Endorsed by the governor, the building industry, and the environmental community
  - Passed its first policy committee, Senate Energy Committee, on April 26th by a 10-0 vote margin
    - The bill now heads to Senate Appropriations in May and then on to the Senate Floor and finally, the State Assembly

# Overview of Solar Homes Bill: SB 1

- Policy Specifics

1. Requires all builders of large single-family home to offer solar power as an option (or make standard) to meet quota of 50% per year
  - Quota is largest area of contention in bill
2. Institutes a secure rebate fund of \$100 million per year
3. Mandates that solar rebates decline by 7% each year to help ensure a self-sufficient solar market by 2015
4. Mandates that utilities buy back excess electricity generated by solar systems up to 5% of peak demand
5. Provides support for incorporating solar into affordable housing

# Residential Solar Electric Systems

- Permitting
  - Permitting fees and schedules vary by city
  - Electricity, sewage, and/or building permit
- Installation
  - For maximum efficiency, panels must be south facing and have unobstructed access to the sun
  - A system able to meet the needs of a typical household uses between 300 to 600 sq feet (100 sq feet of PV panels produces about one kilowatt of electricity)
- Maintenance & Warranty
  - After 10-15 years, the inverter must be replaced, costing approximately \$1,500

# Residential Solar Electric Systems

- Connecting PV System to the Grid
  - Interconnection Agreement with local utility allows households to bank their unused electricity generated by the PV panels and use an equal amount of electricity from the utility without being charged
- Rebates & Tax Credits
  - \$2,800 per kilowatt rebate ( $\approx 37\%$ ) issued by the California Energy Commission (CEC) for installing renewable energy (drops 8% or more June 2005)
    - Does not apply to PV systems greater than 30-kW in size
  - CA Clean Energy Tax Credit of 7.5% (ends December 2005)

# PV Affordability

- The economic case for PV - when compared to kerosene, diesel generators, and grid extensions- has already been established
- The capital investment required is still very high
- Ability and willingness to pay are often in conflict
  - ⇒ Sustainable markets can be obtained through subsidies or financing

# PV Affordability

- The best financing plans offered in the US are 30-year home mortgage loans....
  - SB1 calls for 50% of all new homes built each year to include solar energy....
- ⇒ SHARP™ is currently forming long-term contracts with home builders
- SHARP™ PV Systems will be exclusively featured as an add-on (similar to marble countertops) or bundled with the home
  - Roofers will become licensed SHARP™ PV System Installers

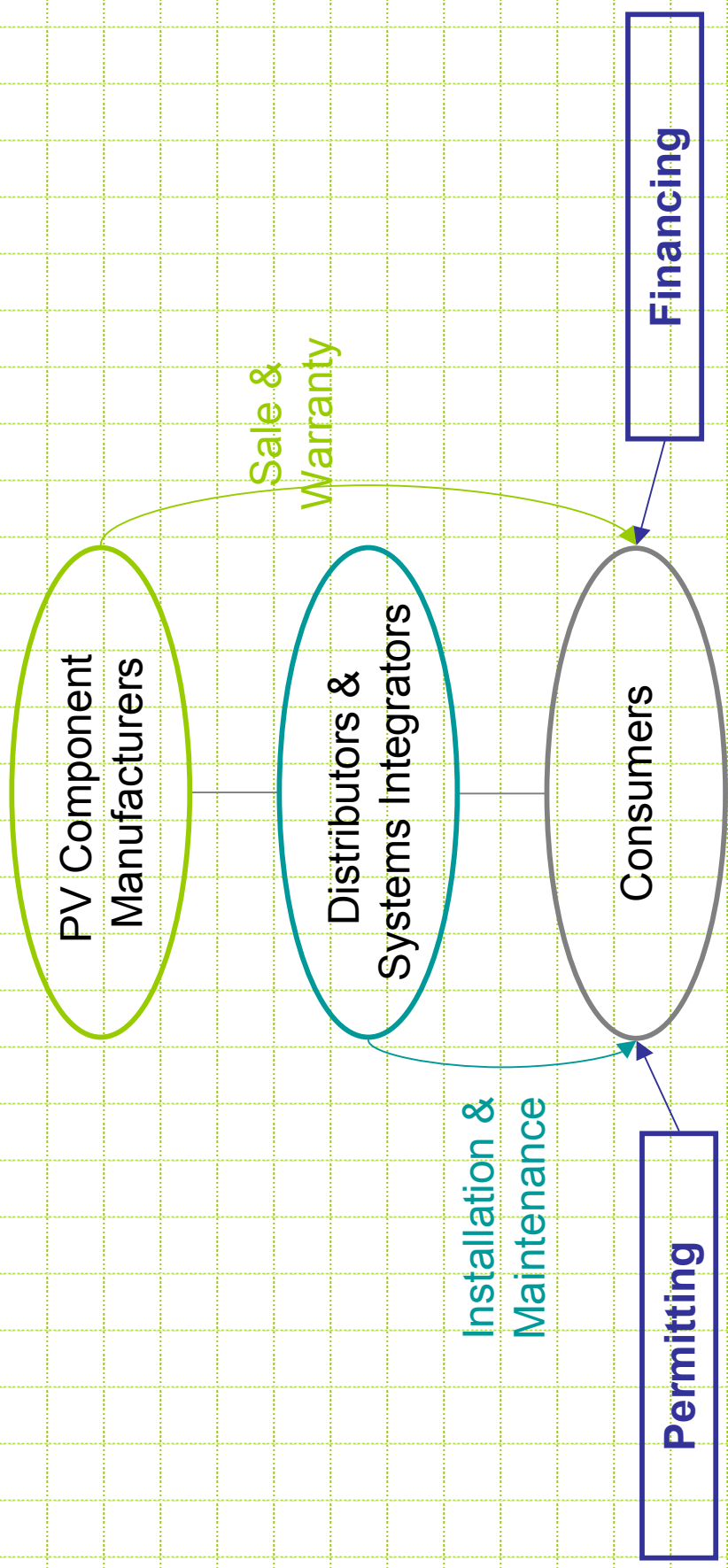
# SHARP™

- World's leading producer of solar modules
  - Accounted for 32% of the total global demand of solar energy systems
- 45 years of R&D has led to numerous innovations in the PV industry
  - Introduced triangular solar modules and PV shingles
  - Sharp-manufactured & branded UL approved inverter
- The only manufacturer to produce both solar modules and inverters
  - Only complete residential system offered
- Production recently moved to US to reduce transportation costs

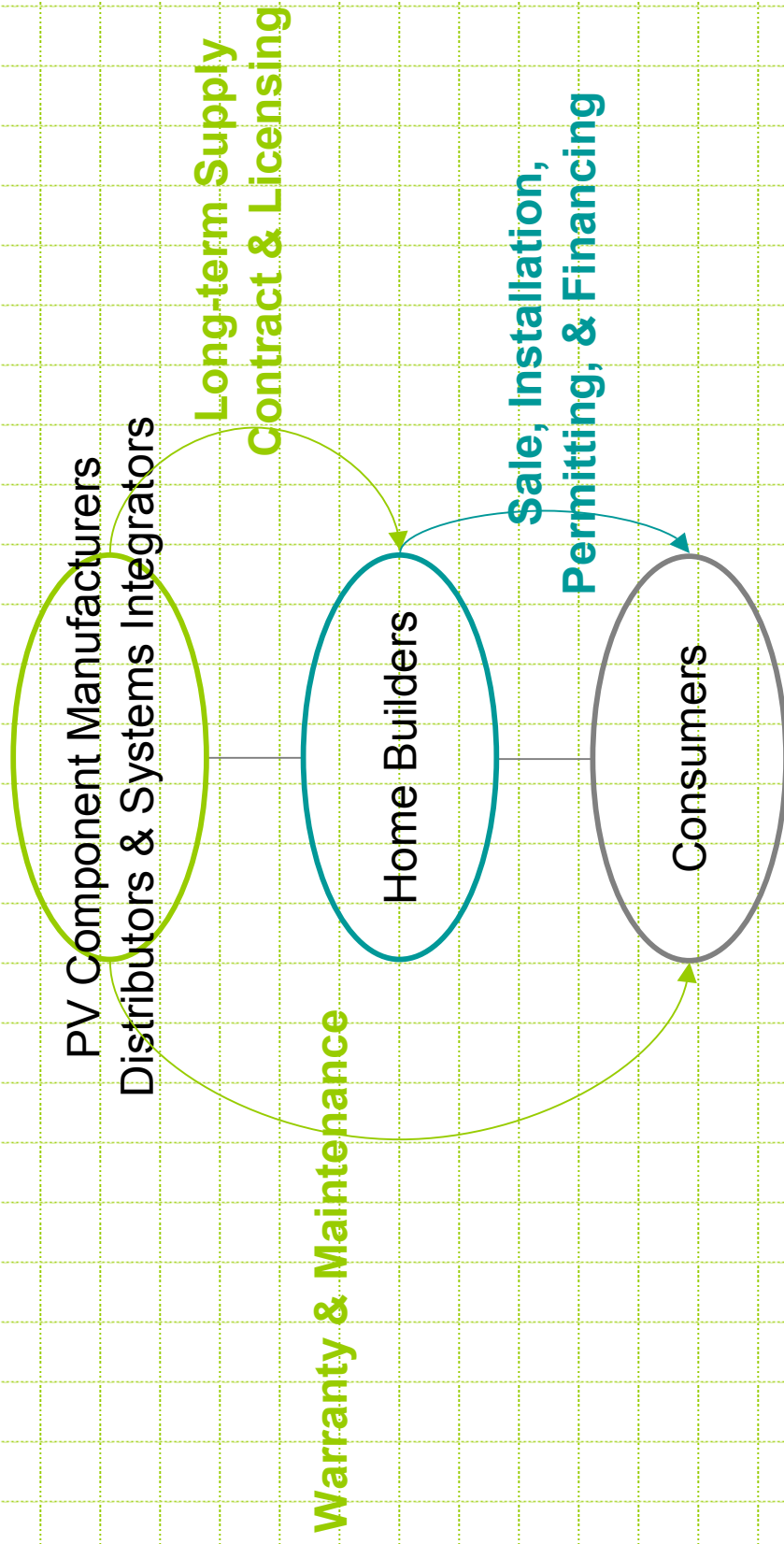
# PV and Home Building

- Financing
- Streamlining of labor and installation costs
- Streamlining of permitting and design reviews
- Ability to design home to ensure maximum sun exposure for the PV panels
- Warranty on PV system set to match length of mortgage

# Common PV Producer Profile



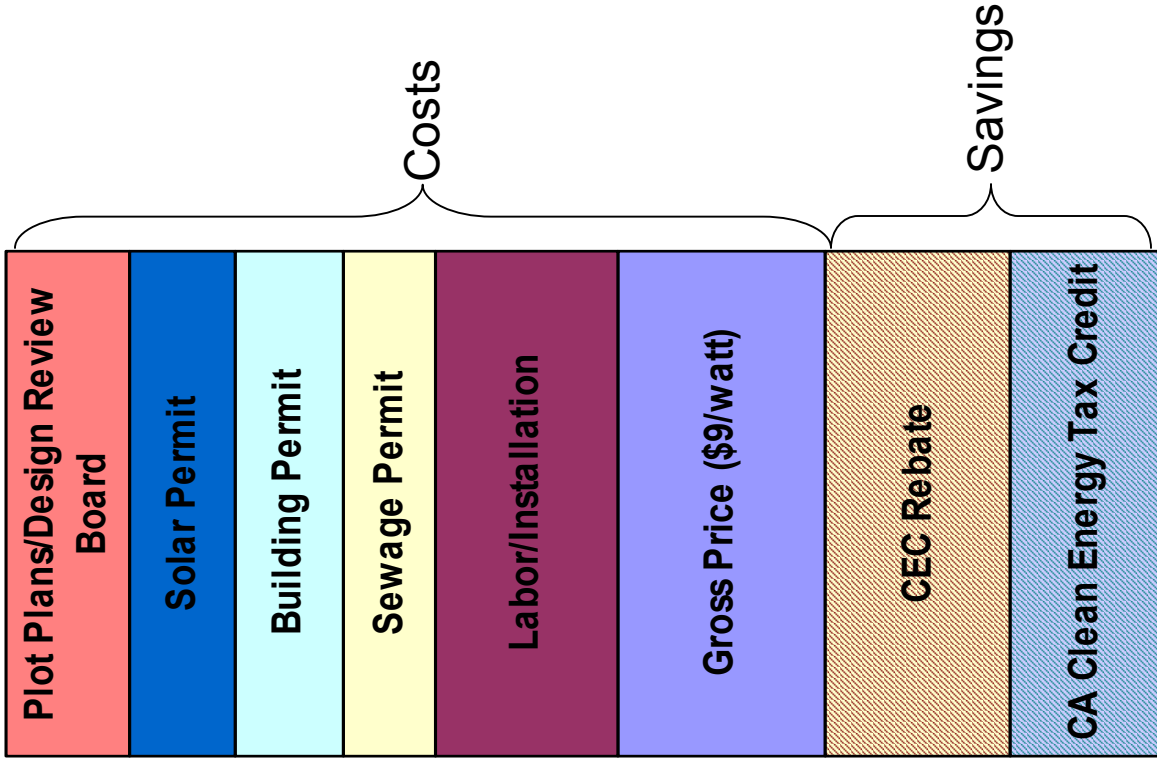
# SHARP™ Profile



### 3 k-W System

	Without SL	With SL
Gross Price (\$9/watt)	\$27,000.00	\$27,000.00
Labor/Installation	\$8,100.00	\$0.00
Sewage Permit (if ground mounted)	\$100.00	\$0.00
Building Permit	\$200.00	\$0.00
Solar Permit	\$171.00	\$171.00
Plot Plans/Design Review Application	\$400.00	\$0.00
	<b>\$35,971.00</b>	<b>\$27,171.00</b>
CEC Rebate (\$2,800/kilowatt)	<b>(\$8,400.00)</b>	<b>(\$8,400.00)</b>
CA Clean Energy Tax Credit	\$27,571.00	\$18,771.00
	<b>(\$1,395.00)</b>	<b>(\$1,395.00)</b>
Roofing Savings	\$26,176.00	\$17,376.00
	<b>(\$0.00)</b>	<b>(\$600.00)</b>
<b>Net Cost</b>	<b>\$26,176.00</b>	<b>\$16,776.00</b>
<b>Financing</b>		
	PV MTI	KB Home Mortgage
Rate/Length	7.50%	5.50%
Length	10 yr	30 yr
<b>Monthly Payment</b>	<b>\$234.49</b>	<b>\$50.92</b>

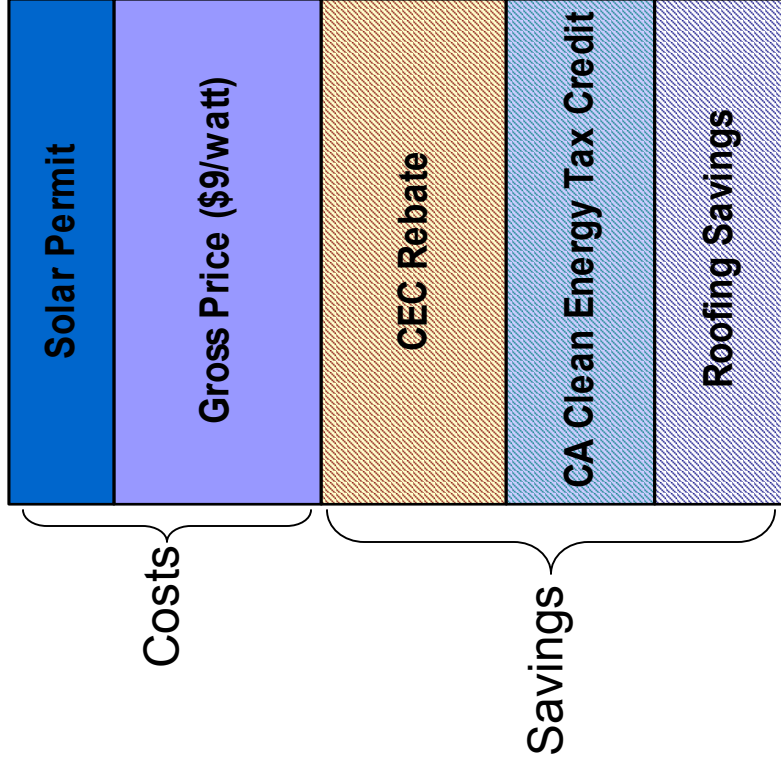
## WITHOUT STREAMLINING



Notes:

- While the rebate and tax credit remain unchanged, the consumer experiences additional savings with reduced roofing costs.

## WITH STREAMLINING



# Conclusions

- SHARP™, through integration with home builders, has lowered the effective price faced by consumers without having to substantially lower their selling price
  - For every doubling of installed systems, the total cost should fall 18%
    - SHARP™ installed 100,00 systems in 2004
  - Effect of SB 1
    - 200,00 new homes were built in CA last year (≈120,000 new solar homes in 2006)
- ⇒ Quantity should more than double, TC should fall by more than 18%