

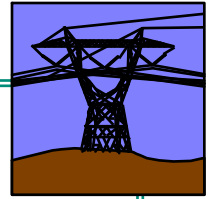
California Incentives For Renewable Markets

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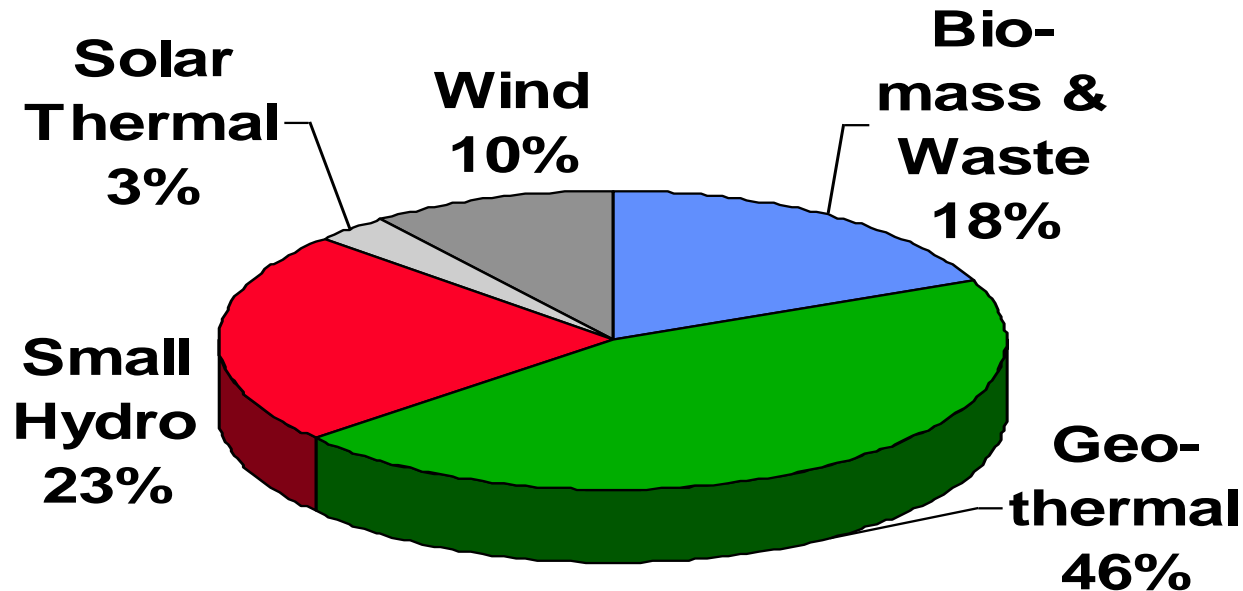
California Energy Commission, May, 1999





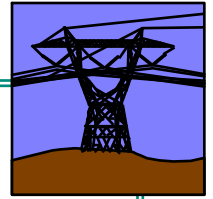
California Renewable Energy

27,500 GWh in 1998



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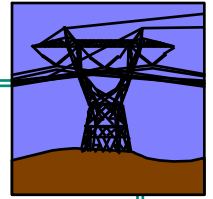
Background: Electricity Deregulation

- Key Elements of AB 1890
 - Established Power eXchange and Independent System Operator
 - Recovery of stranded costs over four-year transition period
 - Funds to Support Public Purpose Programs
 - Non-bypassable surcharge: System Benefit Charge
 - Four Programs Supported: Renewables, Energy Efficiency, Low Income, and Research & Development
 - Retail Competition
 - Customer Choice, Green Market, Consumer Education
 - 10% Residential Rate Decrease; No Shopping Credit



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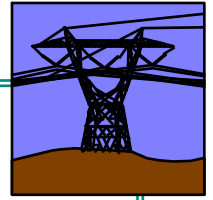
Renewable Portfolio Standard or System Benefit Charge?

- Straight RPS lets market players decide how and when to meet standard - cost is unknown
- RPS with price cap still lets market decide, but cost is capped and level of renewables is unknown
- SBC collects money for some kind of administrative allocation:
 - level of renewables is unknown
 - Can be made market-oriented - maximize reactivity with market decisions

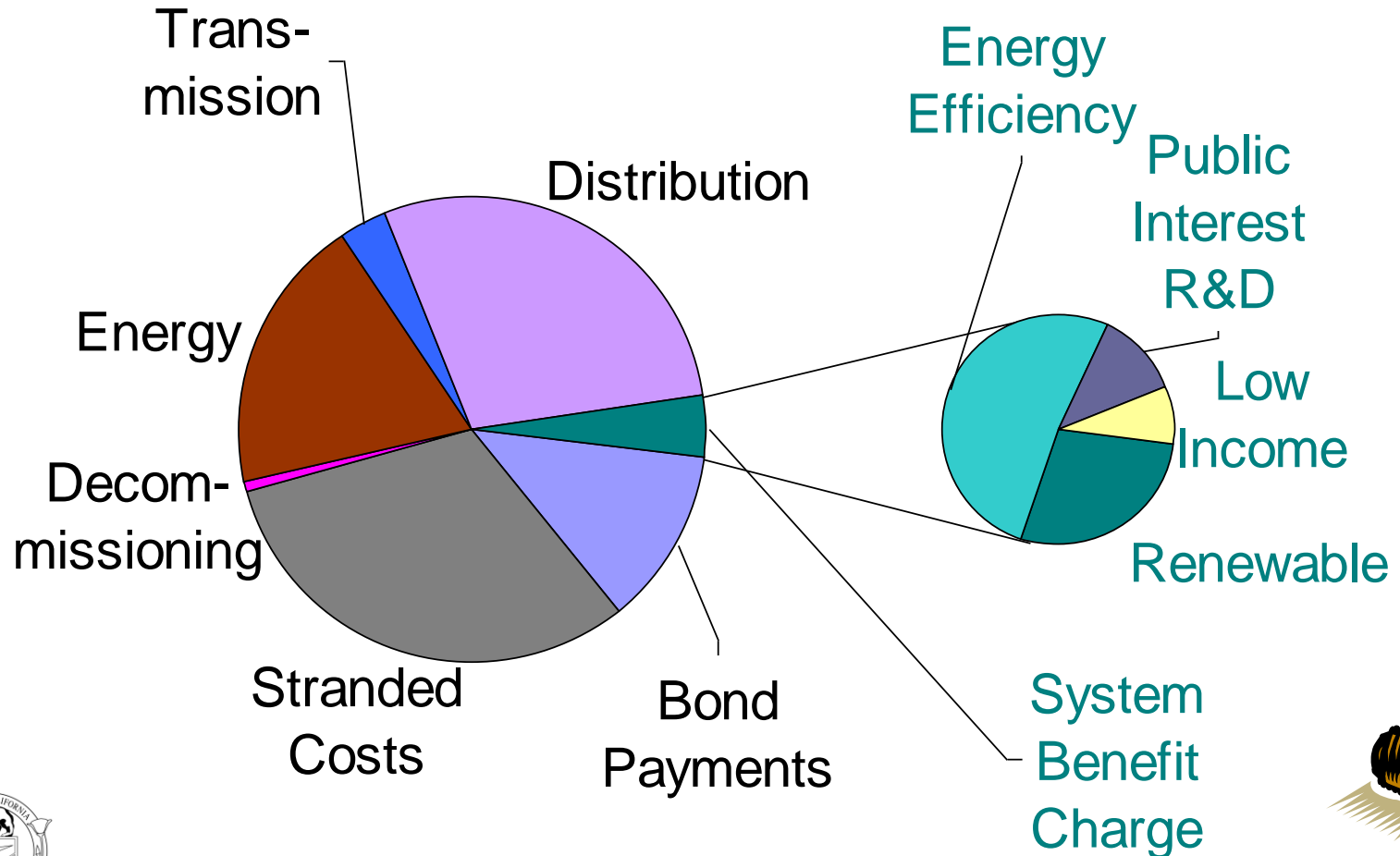


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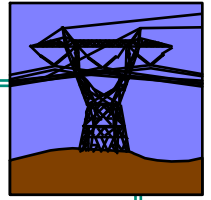


California Bill After Restructuring



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Renewables Program

- \$540 Million established to support New, Existing, and Emerging Renewable Technologies
- Funds Allocated to Four “Accounts”
 - Existing Technologies (\$243 Million)
 - New Technologies (\$162 Million)
 - Emerging Technologies (\$54 Million)
 - Customer-Side Purchases (\$81 Million)
 - \$76 Million to Consumer Credit Subaccount,
 - \$5 Million to Consumer Education Subaccount

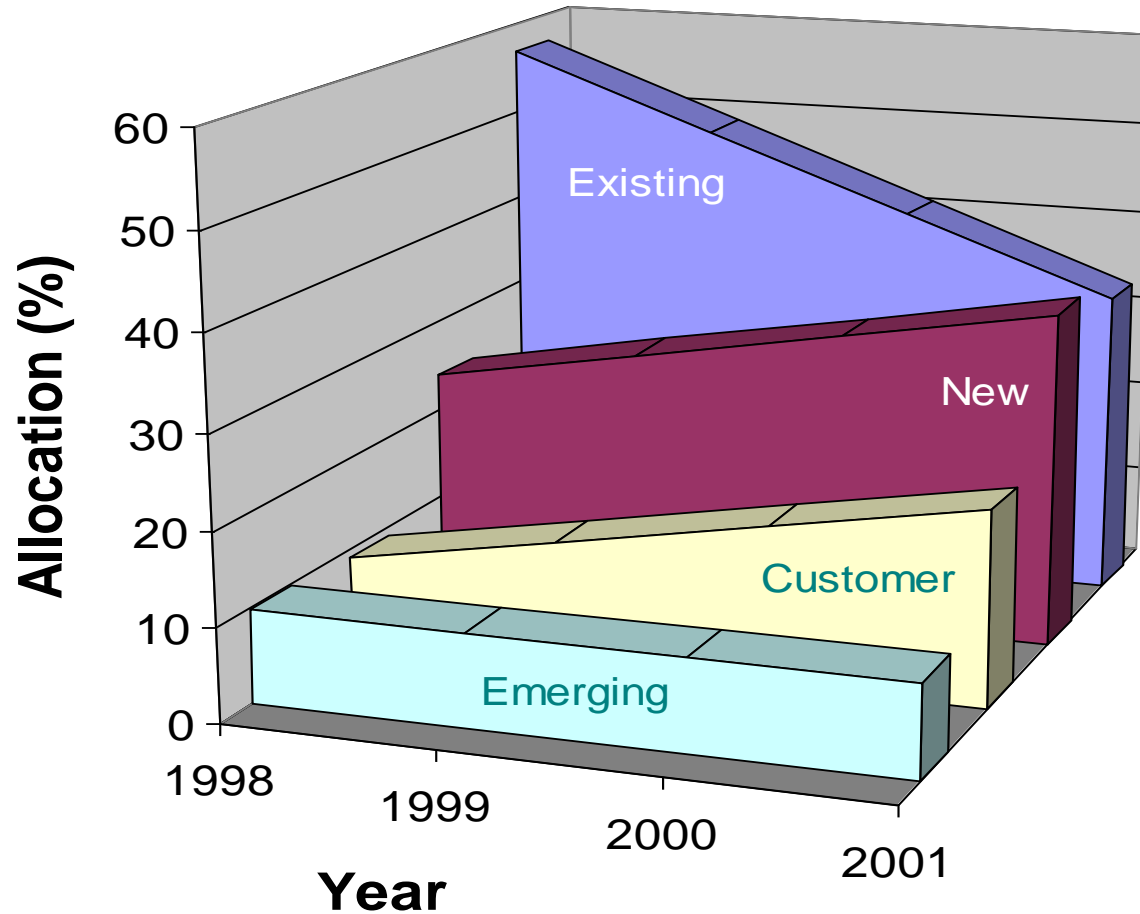


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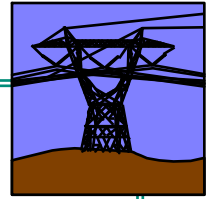


Ramping Allocations by Year



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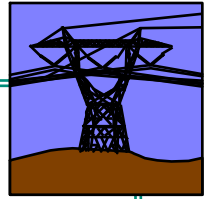




Assisting Green Market

	Demand	Supply
Green Market Over the Grid	Customer Credit SubAccount	<i>New Account</i> <i>Existing Account</i>
Green Market Installed At Site	Emerging Account	

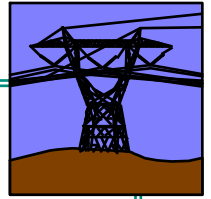




Over the Grid Supply: Market-Driven Payments

- Existing Account production incentives (cents/kWh) are the lesser of:
 - a payment cap (either 1 or 1.5 cents/kWh)
 - a target price minus the market electricity price
 - the available funds divided by the eligible generation
- New Account production incentives (cents/kWh) are:
 - the result of bidding in an auction
 - paid only for first five years of generation after startup





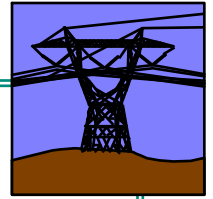
Over the Grid Supply: Results

- New Account:
 - auction induced 55 winning bids which laid claim to entire \$162 million available
 - 300 MW of wind, 157 MW of geothermal, 70 MW of landfill gas, 12 MW of biomass, 2 MW of digester gas, 1 MW of small hydro
 - Full amount of \$162 million allocated at an average incentive of 1.2 cents/kWh
 - all projects expected to pass Milestone #1 by this month
- Existing account:
 - \$55 million paid out, \$21 million rollover in 1998
 - nearly 50 facilities “off the cliff” but continue operating



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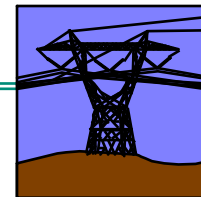




Assisting Green Market

	Demand	Supply
Green Market Over the Grid	<i>CUSTOMER CREDIT SUBACCOUNT</i>	New Account Existing Account
Green Market Installed At Site	Emerging Account	



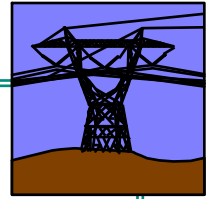


Now that's crisp, reliable, hassle-free toast, and at peak hours with no long waits! Who do you say is your electricity provider?



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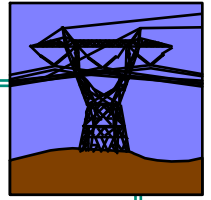
Over the Grid Demand: Market-Driven Payments

- Incentives constant at 1.5 cents/kWh for six month intervals at beginning, but starts “floating” as demand grows significantly
- Only direct access transactions eligible
- Administrative costs reduced by distributing funding through energy service providers
- Incentive \$ capped for large Commercial and Industrial customers (> 20 KW) at \$1,000/year
 - Cap removed if incentive stays at 1.5 cents/kwh in 1999



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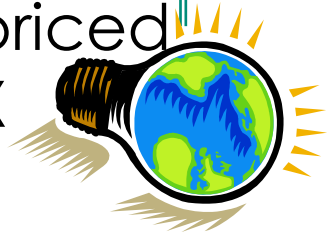


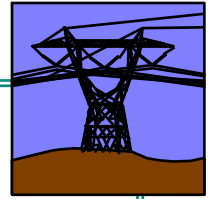
Over the Grid Demand: Results

- 14 marketers have registered as renewable providers offering 27 products containing a percentage of renewable energy
- Six marketers have submitted invoices covering up to 12 months for \$5 million
- Market expected to continue to grow rapidly in 1999
- Recent development: at least 3 products priced lower than conventional energy through PX

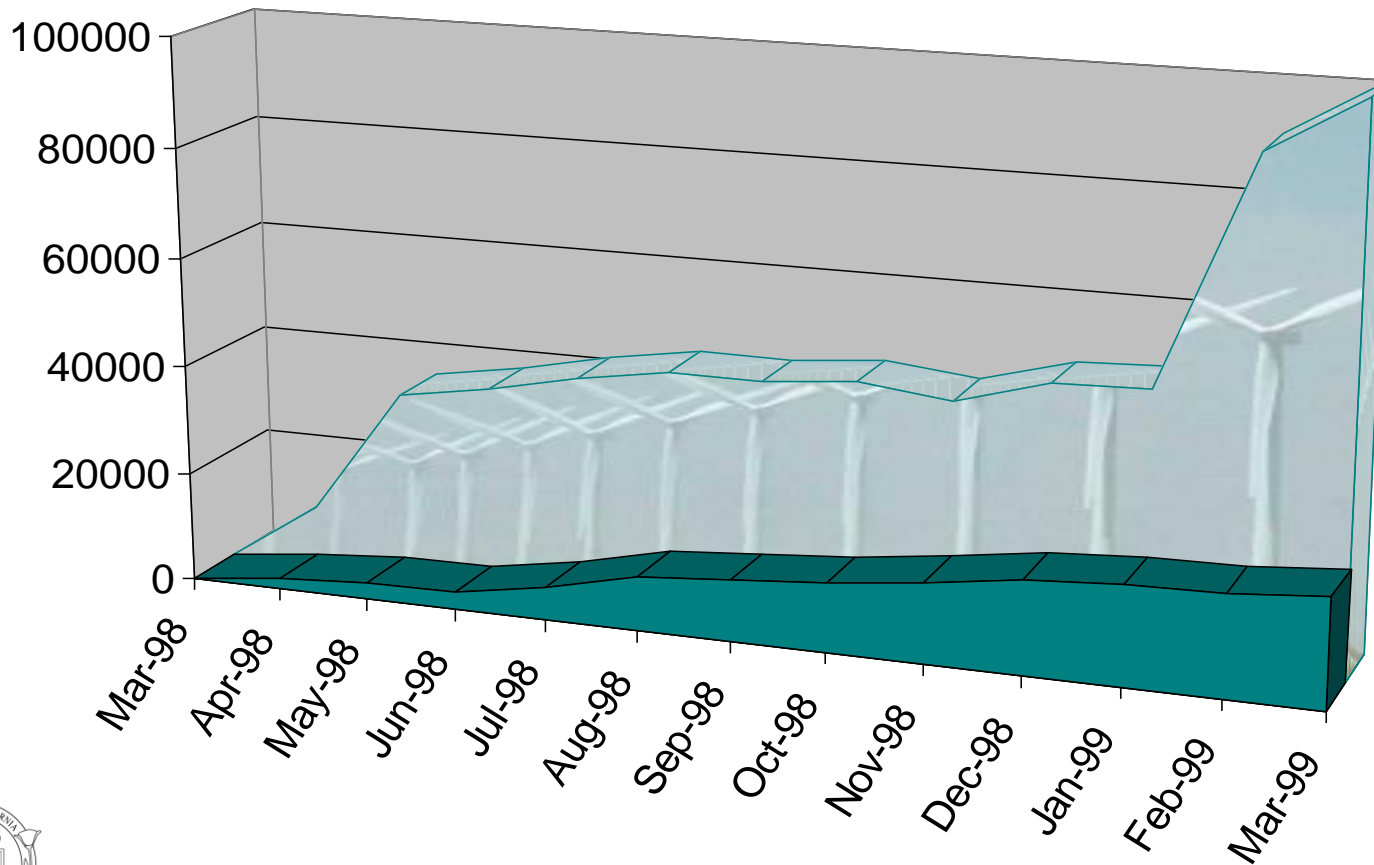


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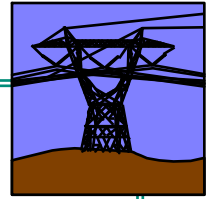


Participants in Customer Credit



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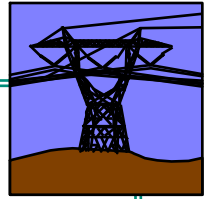
Assisting Green Market

	Demand	Supply
Green Market Over the Grid	Customer Credit SubAccount	New Account Existing Account
Green Market Installed At Site	<i>Emerging Account</i>	



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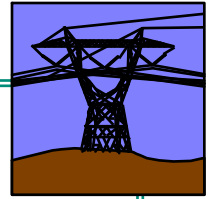




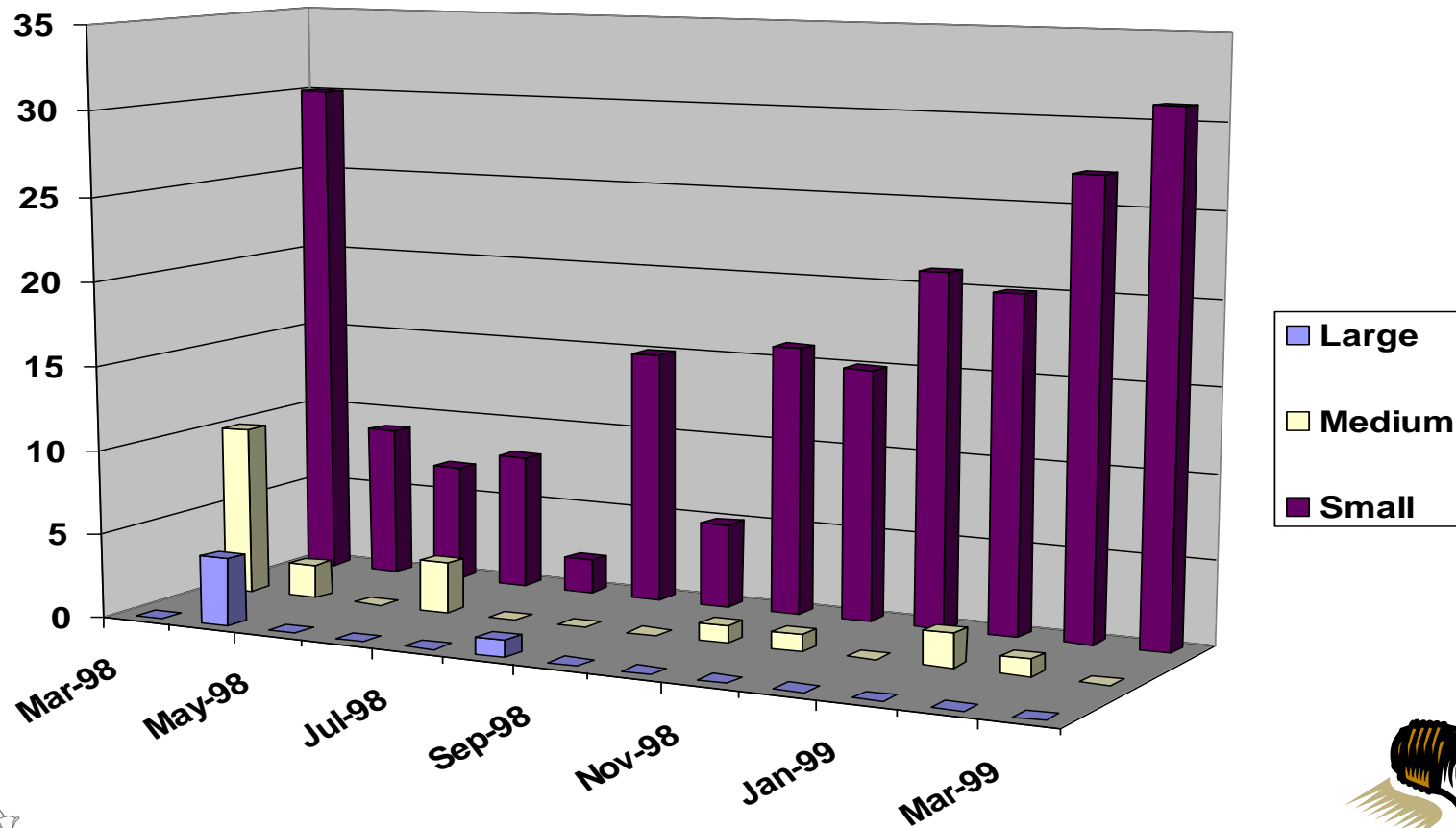
Installed at Site Demand/Supply: Market-Driven Payments

- Buydown incentives decrease over time:
foreshadowing decrease in technology costs
 - \$3.00, 2.50, 2.00, 1.50, 1.00 per watt, or
 - 50%, 40%, 30%, 25%, 15%, whichever is less
- Technology must be installed prior to payment
- Technology must be creditable:
 - Installation by licensed professional or do-it-yourself
 - 5-year warranty required on equipment/installation
 - UL Listing or 1 year demonstrated operation in market



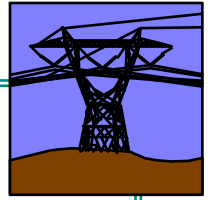


Installed at Site: Results



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In Conclusion

- Very Encouraged By Results So Far
- SBC Structure Seems Workable - Can Be Made Market-Oriented
- Next Piece of Puzzle To Get In Place -
 - Consumer Education Campaign
 - \$5.4 million to fund campaign
 - Opting For Stakeholder Coalition
 - Asking For Leveraging
- Questions:
 - Does Program Funding Continue Beyond Transition?
 - How To Structure Next Steps



California Energy Commission, May, 1999

