



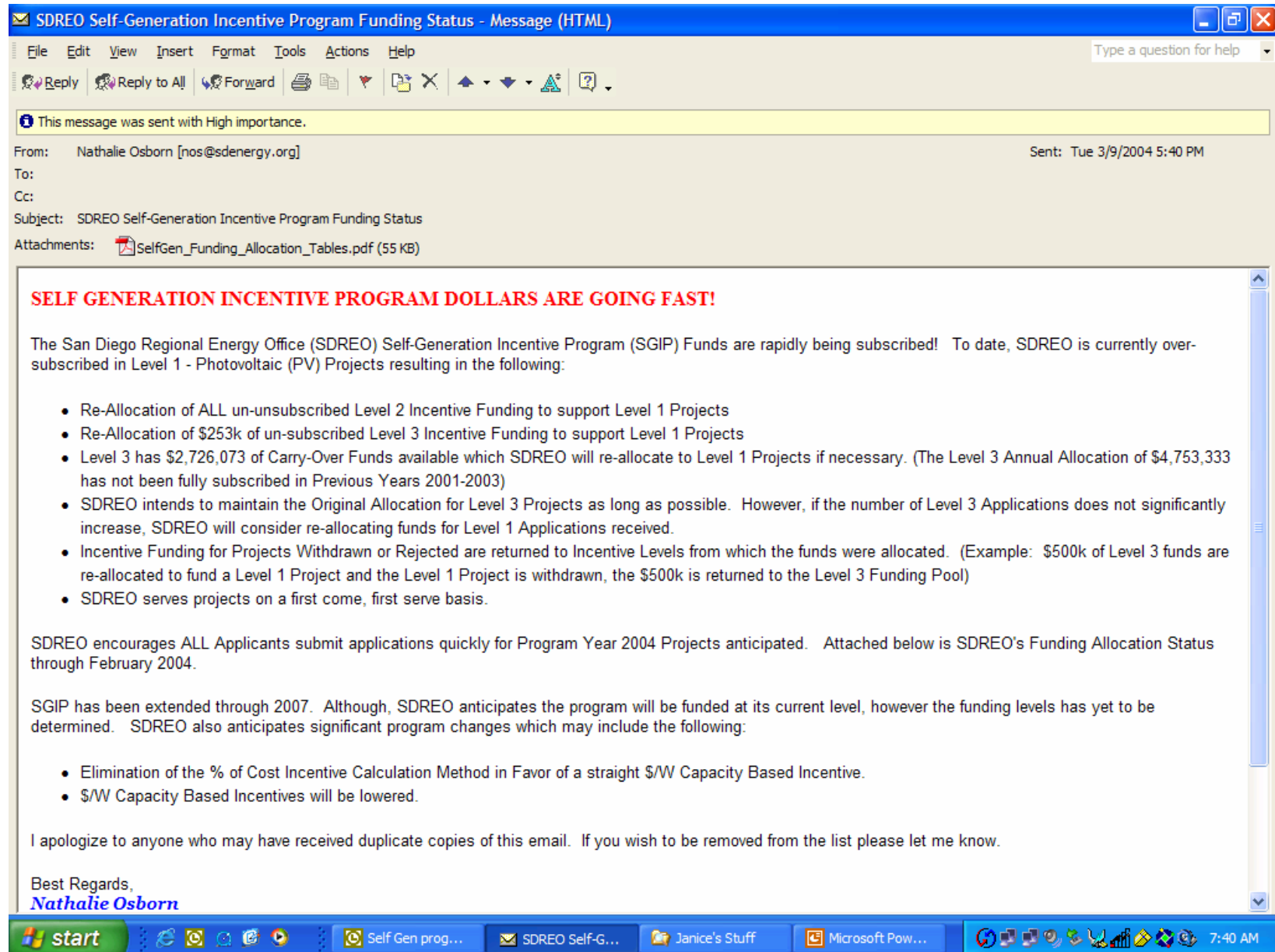
**CSC Solar Forum – San Francisco
May 5, 2004**

Balancing Supply and Demand for Limited SGIP Funds

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March 2004: "SGIP Dollars are Going Fast!"



SDREO Self-Generation Incentive Program Funding Status - Message (HTML)

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From: Nathalie Osborn [nos@sdenergy.org] Sent: Tue 3/9/2004 5:40 PM
To:
Cc:
Subject: SDREO Self-Generation Incentive Program Funding Status
Attachments: SelfGen_Funding_Allocation_Tables.pdf (55 KB)

SELF GENERATION INCENTIVE PROGRAM DOLLARS ARE GOING FAST!

The San Diego Regional Energy Office (SDREO) Self-Generation Incentive Program (SGIP) Funds are rapidly being subscribed! To date, SDREO is currently over-subscribed in Level 1 - Photovoltaic (PV) Projects resulting in the following:

- Re-Allocation of ALL un-subscribed Level 2 Incentive Funding to support Level 1 Projects
- Re-Allocation of \$253k of un-subscribed Level 3 Incentive Funding to support Level 1 Projects
- Level 3 has \$2,726,073 of Carry-Over Funds available which SDREO will re-allocate to Level 1 Projects if necessary. (The Level 3 Annual Allocation of \$4,753,333 has not been fully subscribed in Previous Years 2001-2003)
- SDREO intends to maintain the Original Allocation for Level 3 Projects as long as possible. However, if the number of Level 3 Applications does not significantly increase, SDREO will consider re-allocating funds for Level 1 Applications received.
- Incentive Funding for Projects Withdrawn or Rejected are returned to Incentive Levels from which the funds were allocated. (Example: \$500k of Level 3 funds are re-allocated to fund a Level 1 Project and the Level 1 Project is withdrawn, the \$500k is returned to the Level 3 Funding Pool)
- SDREO serves projects on a first come, first serve basis.

SDREO encourages ALL Applicants submit applications quickly for Program Year 2004 Projects anticipated. Attached below is SDREO's Funding Allocation Status through February 2004.

SGIP has been extended through 2007. Although, SDREO anticipates the program will be funded at its current level, however the funding levels has yet to be determined. SDREO also anticipates significant program changes which may include the following:

- Elimination of the % of Cost Incentive Calculation Method in Favor of a straight \$/W Capacity Based Incentive.
- \$/W Capacity Based Incentives will be lowered.

I apologize to anyone who may have received duplicate copies of this email. If you wish to be removed from the list please let me know.

Best Regards,
Nathalie Osborn

start Self Gen prog... SDREO Self-G... Janice's Stuff Microsoft Pow... 7:40 AM

Proposed solutions to balancing demand and supply

Proposed Solution	Rationale
Drop the \$/W rebate level, possibly to mirror CEC program (\$3.20/W)	<ul style="list-style-type: none">• Large systems are already more cost effective/unit• Large systems benefit from tax benefits
Eliminate the 50% cap	<ul style="list-style-type: none">• Prevent artificial 'inflation' of system price• Simplify program administration

Challenge: How to smooth demand with out squashing it

Rebate levels for Level 1 should not be set at CEC levels

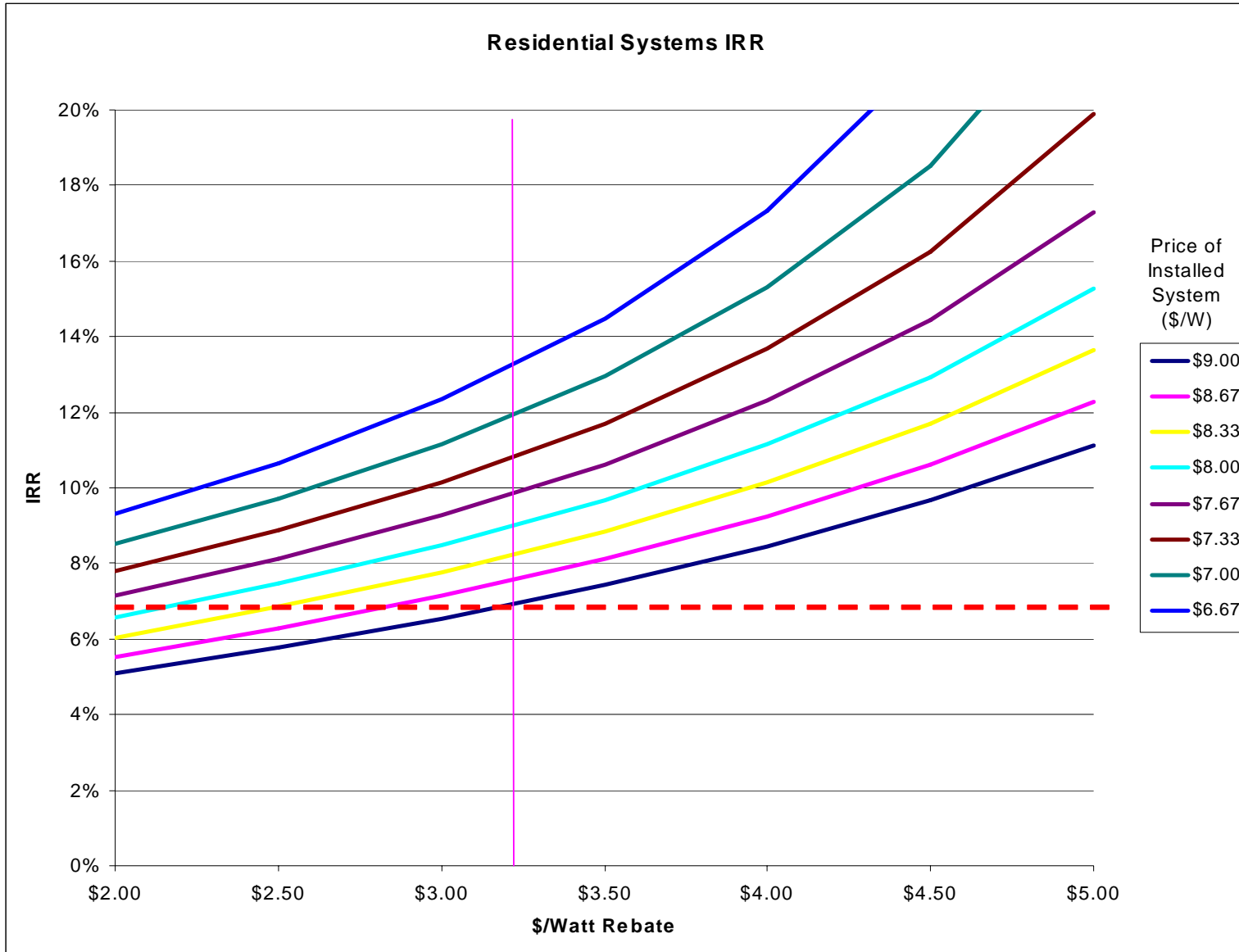
SGIP and CEC programs service fundamentally different markets with different investment perspectives

Customer Type	Investment Decision	Key Variables
SGIP:		
Commercial/private Government/public	After Tax IRR > 10% Payback < 6-8 yrs	Low avoided energy cost Limited access to LT debt Fed & state tax benefits
CEC:		
Residential	Cash Flow Positive	High avoided energy cost Access to low cost LT debt State tax benefits

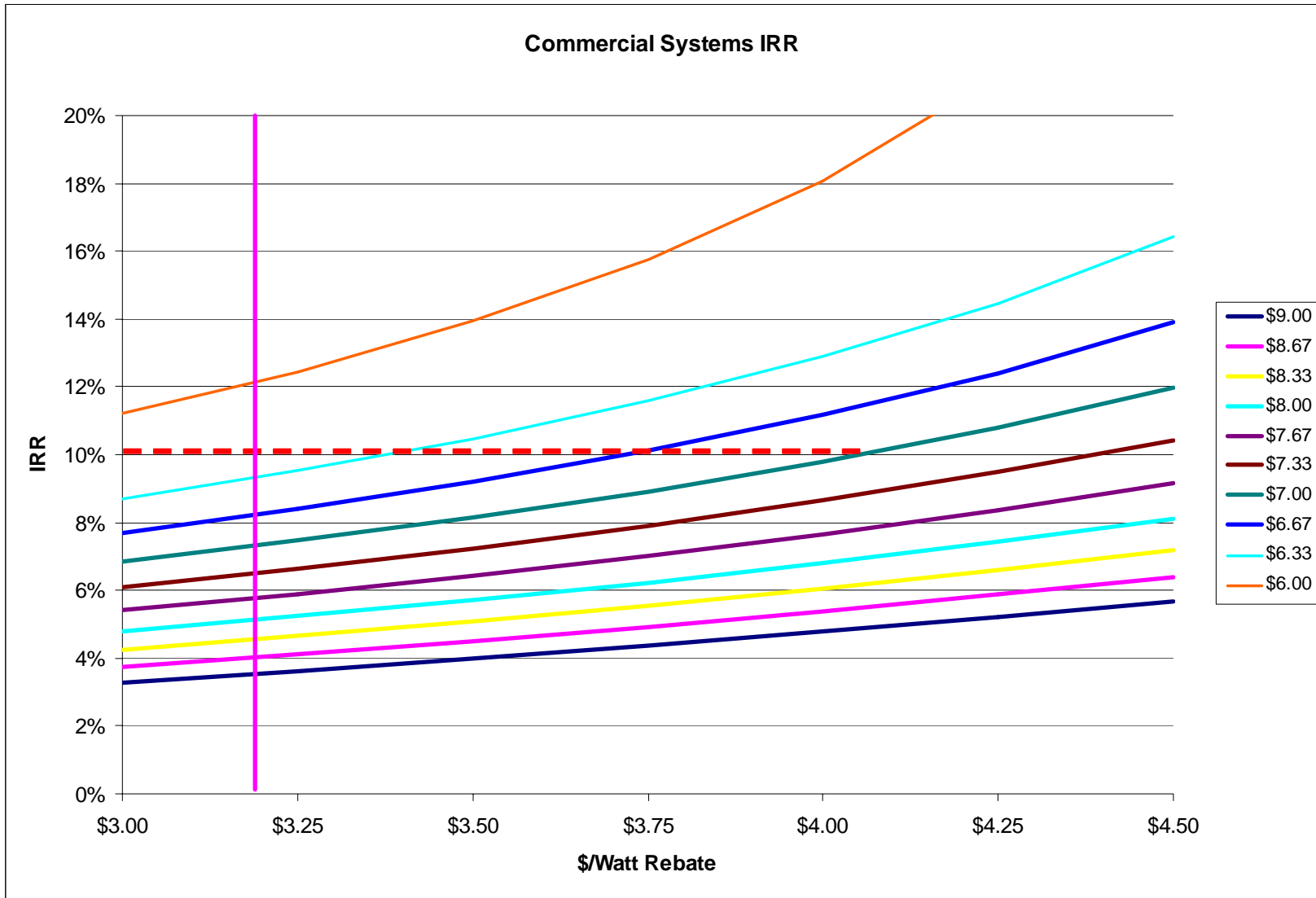
To illustrate the fundamental differences between commercial and residential, we modeled their investment decisions

Key Assumption	250 kW commercial system	5 kW residential system
Installed cost/Watt	Various	Various
Avoided Energy Cost	\$0.13	\$0.20
Tax benefits	+ 10% Federal ITC + 7.5% State ITC + Depreciation (-) Tax on savings	7.5% State tax credit
Capacity factor	17%	17%
Annual inflation	3%	3%
Annual elec price incr	1.5%	1.5%
Term and cost of borrowing	7 years 6.5%	30 years 6.5%
\$/watt rebate level	Various	Various

At a \$3.20/watt rebate level, all residential systems < \$9/W deliver a return greater than the customer's borrowing cost

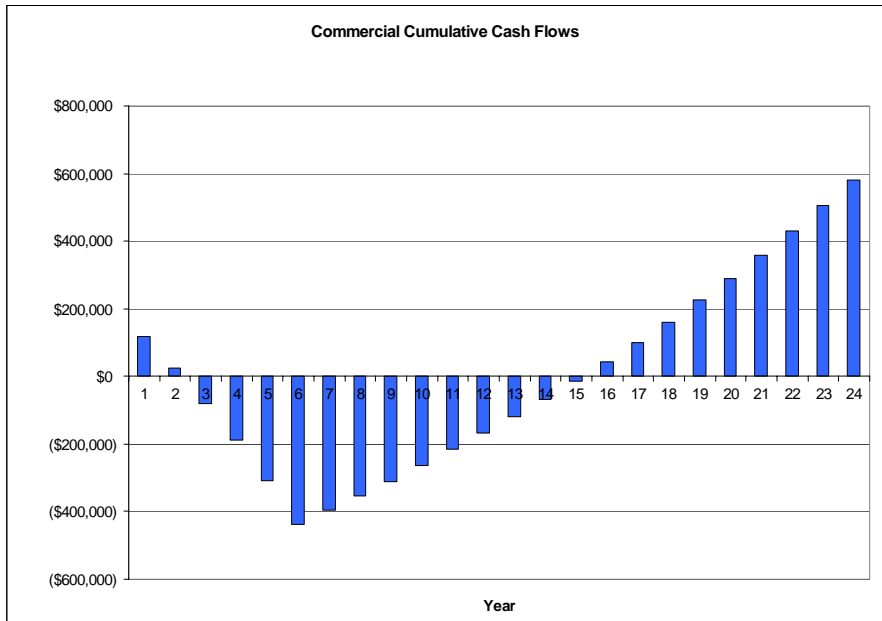


At a \$3.20/watt rebate level, only commercial systems < \$6/W deliver > 10% IRR

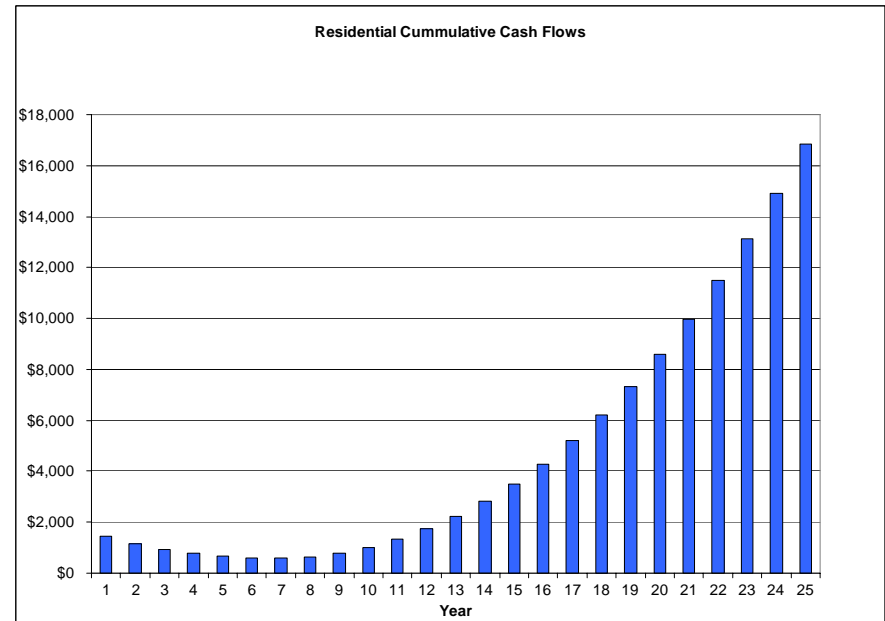


At a \$3.20/W rebate level, only residential customers are cash flow positive

Commercial Cumulative Cash Flows



Residential Cumulative Cash Flows

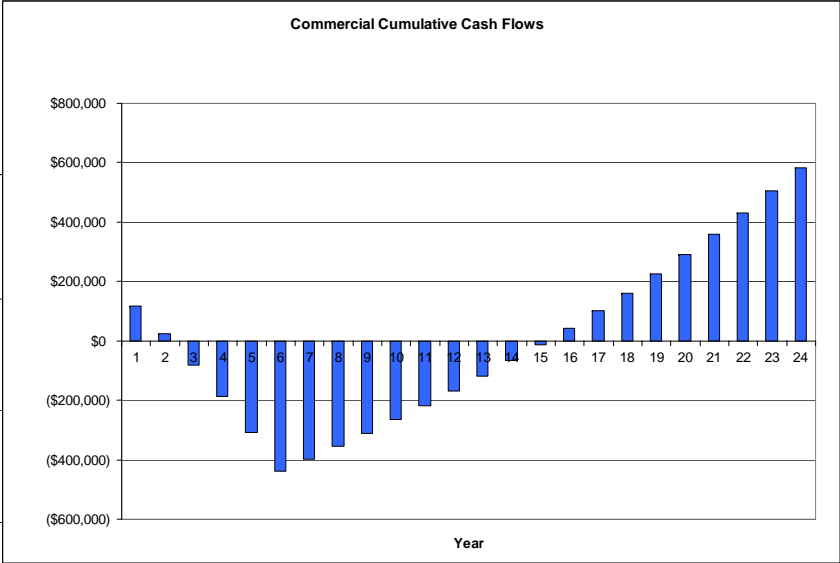
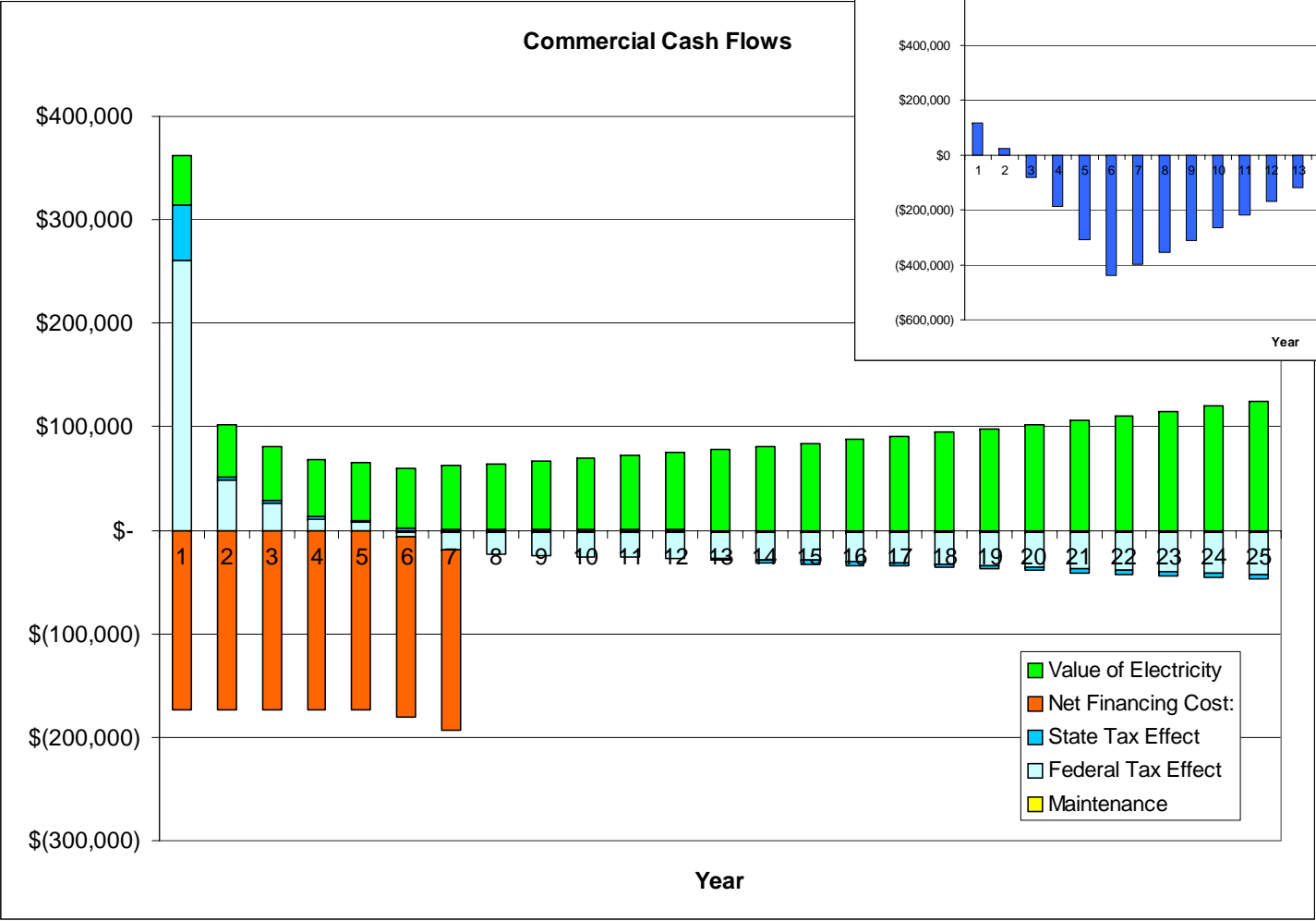


Key Assumption	250 kW Commercial	5kW Residential
Installed cost/Wso	\$7.00	\$8.00
Avoided energy cost/kWh	\$0.13	\$0.20
Annual maintenance cost	0.15% of total installed cost	0.15% of total installed cost
Term and cost of debt	7 years at 6.5%	30 years at 6.5%
Rebate \$/Wso (no caps)	\$3.20	\$3.20

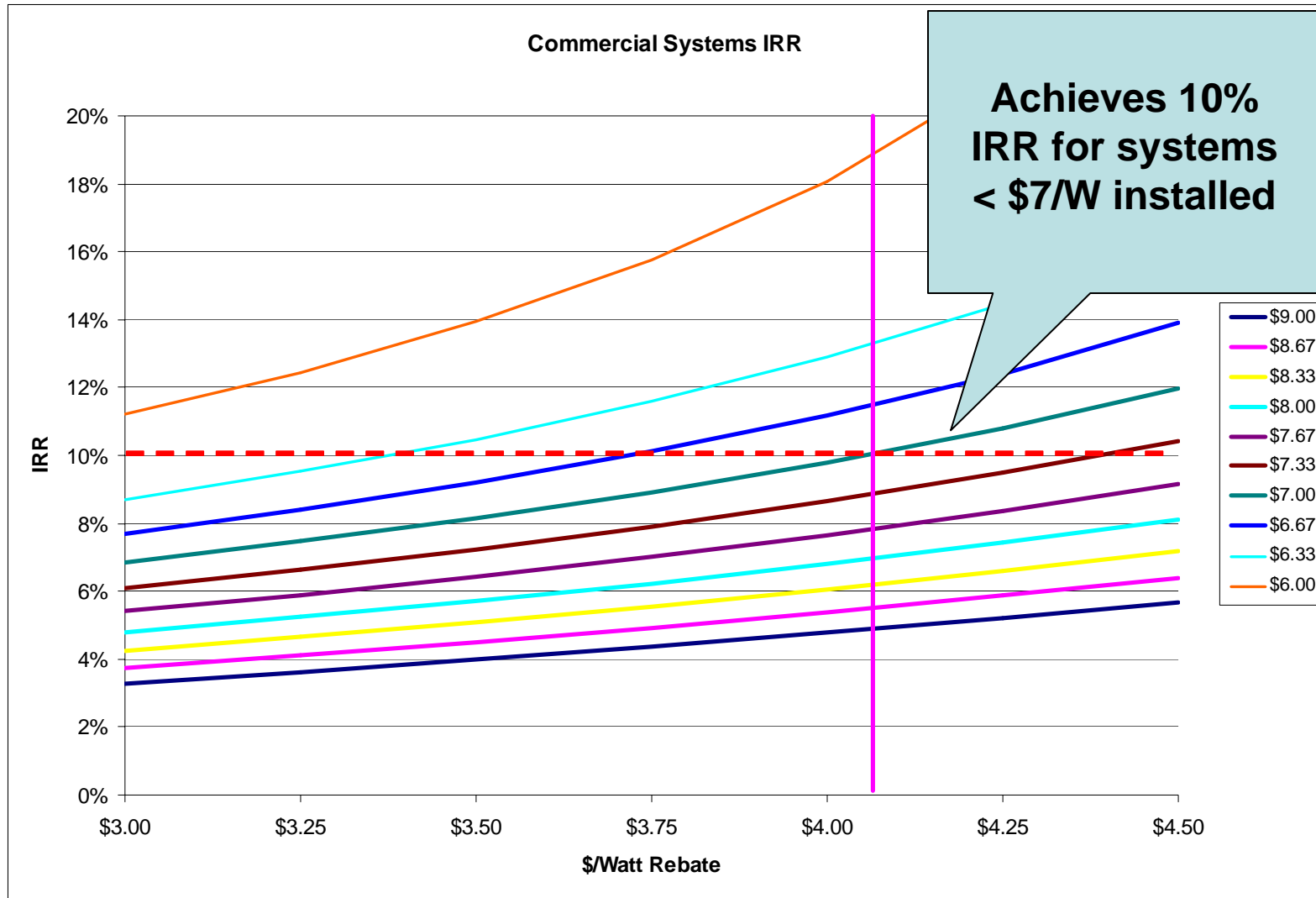
Why are the end user economics so different between residential and commercial customers?

1. Commercial customers have much lower avoided energy cost, and less favorable rate structure for PV
2. Commercial customers do not have access to low cost, 30 year debt
3. Commercial customers receive tax benefits, but are also taxed on their savings -- reducing net overall benefit
4. Commercial customers require higher investment returns (min IRR of 10%)

Net tax benefits for commercial customers are lower than they appear



To smooth demand and maintain market momentum the SGIP \$/Watt should be reduced to ~\$4.05/W



This will still be a stretch goal for most installations - average cost for all completed systems to date is > \$7/W (1)

LEVEL 1 (Photovoltaics)		Statewide SELFGEN Projects to Date										
		Total # Projects	Total kW	System Size				\$/Watt Installed				
System Size	Status			Low	Avg	High	St. Dev.	Low	Avg	Median	High	St. Dev.
≤ 50	Complete	68	2434	30	38	48	5.82	\$ 4.71	\$ 8.95	\$ 9.05	\$ 12.25	\$ 1.84
	Active	130	4779	26	37	50	6.78	\$ 4.93	\$ 8.86	\$ 9.00	\$ 13.52	\$ 1.20
51 - 100	Complete	32	2433	52	78	100	16.74	\$ 4.93	\$ 8.95	\$ 8.99	\$ 16.21	\$ 1.71
	Active	108	7574	51	71	100	13.84	\$ 4.54	\$ 9.09	\$ 8.99	\$ 20.00	\$ 1.89
101 - 200	Complete	28	3820	101	136	200	38.56	\$ 4.73	\$ 7.71	\$ 7.93	\$ 10.62	\$ 1.69
	Active	88	12660	100	149	200	36.40	\$ 6.06	\$ 9.04	\$ 8.99	\$ 19.84	\$ 1.89
201 - 500	Complete	17	5163	201	304	469	91.85	\$ 4.64	\$ 7.25	\$ 7.69	\$ 9.03	\$ 1.42
	Active	63	21065	204	335	500	83.54	\$ 6.40	\$ 8.27	\$ 8.40	\$ 10.62	\$ 0.95
501 +	Complete	8	4889	521	781	1100	250.48	\$ 4.51	\$ 7.48	\$ 7.66	\$ 10.00	\$ 2.36
	Active	22	18468	500	839	1008	201.55	\$ 5.99	\$ 8.04	\$ 7.80	\$ 10.98	\$ 1.24
Total Completed		151	18539									
Total Active		409	64547									
Total Programs		560	83086									

(1) source: "Statewide SGIP Program Statistics 4/15/04 SDREO

There seems to be consensus that choosing the RIGHT \$/W level will be difficult due to the wide range of PV applications

- Crystalline vs. amorphous
- Roof mounted vs. ground mounted
- Fixed tilt vs. tracking



Choosing a market appropriate single \$/W incentive level is virtually impossible

1. Establishing multiple \$/W fixed incentives for each application will be highly contentious and will increase program complexity
2. Market fundamentals change all the time, examples:
 - PV component and installed system cost
 - Avoided energy costs
 - Underlying tax benefits
3. A single \$/W rebate level with no cap will have unintended consequences
 - Too low – squash demand
 - Too high – turbo charge demand for particular applications

Guiding principles for SGIP rebate levels/structure

1. Maintain healthy program momentum - balance between demand and supply even as market fundamentals change
2. Pass test of fairness to ratepayers and all stakeholders
3. Encourage host customer and contractor accountability
4. Stay technology agnostic – let the market choose the right application
5. Keep program administration as simple as possible

Keeping the 50% cap serves as an 'insurance mechanism' and meets guiding principles

1. Ratepayers should not pay more than 50% of system cost
2. Optimal \$/W rebate is a moving target
3. Forcing host customers to pay a minimum of 50% ensures greater accountability for system quality and performance
4. Ensures program is technology agnostic
5. Informally, Working Group members indicate that determining eligible costs for Level 1 is far easier than Levels 2 and 3

Establishing healthy supply: demand balance
Summary Recommendations:

Proposed Recommendation	Rationale
Immediately reduce \$/W rebate level to ~\$4.05	<ul style="list-style-type: none">• Achieves min required customer IRR• Target installed cost < historic average
Keep the 50% cap for Level 1 technologies	<ul style="list-style-type: none">• ‘Insurance mechanism’• Ensures fairness• Ensures accountability• Keeps program technology agnostic



Thank you for being a great audience!

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