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Power Purchase Agreements – Lessons from the Public Sector

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Current Trends, Recent Public PPAs

Starting Price per kWh	Annual Escalation	Contract Period
12 – 18 cents	3 – 4% (mostly 3%)	20 yrs
10.8 cents	3%	25 yrs

PG&E service territory; $0.15 PBI incentive; complex application; does not include Utility scale PPA

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Trends, cont'd

- Current incentives very low (approaching $0.05)
  – favor 25 year contracts and higher buyouts for reduced PPA rates.
- Minimum PPA System Size: 250kW + (tied to fixed costs)
- PPA rates highly dependent on:
  - Incentives
  - Utility Rate structure
  - Customer load profile
  - System Type (Ground mount, carport)
  - System Size, number of subarrays
  - Client Requirements (tight control)

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What Clients Like

- Acquiring asset benefits with other people's money (no Capital outlay)
- Net Utility savings – reduced operation costs (and Budget)
- Buyouts – owning for less
- Green Image, satisfying mandates

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Client Concerns

- Contractor PV and PPA competence/experience
- Transparency in pricing (no hidden costs in contracts)
- Complex Contracts (hidden mine fields – shifting liability)
- Risk Sharing
- Exit opportunities, attractive buyouts (win-win)
- Equipment and workmanship warranties
- “Lease” vs. “License” (real property interest vs. subordination)

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For the Clients in the Audience -
A Better Way to Evaluate PPA Proposals

System Size	Starting PPA Price, $/kWh	PPA Annual Escalator
280 kW	0.105	3.00%
300 kW	0.097	4.00%
420 kW	0.085	5.00%

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Initial Proposal Comparison

System Size	Starting PPA Price	PPA Annual Escalator	Total PPA Energy Costs	Total PPA Energy Savings
280 kW	$0.105 / kWh	3.00%	$409,313	$103,526
300 kW	0.097	4.00	$494,818	$146,230
420 kW	0.085	5.00	$635,706	$261,761

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Example: 280 kW PPA Proposal, Net Present Worth over Contract Period

Year	Generation	Utility Cost	PPA Cost	Savings	NPW factor	NPW PPA Cost	NPW PPA Savings
1	348,190	$41,783	$36,560	$5,223	0.9524	$34,820	$4,974
2	346,449	$43,653	$37,468	$6,184	0.9070	$33,984	$5,609
3	344,717	$45,606	$38,400	$7,206	0.8638	$33,170	$6,225
4	342,993	$47,647	$39,354	$8,293	0.8227	$32,376	$6,823
5	341,278	$49,779	$40,332	$9,447	0.7835	$31,600	$7,402
6	339,572	$52,007	$41,334	$10,673	0.7462	$30,843	$7,964
7	337,874	$54,334	$42,361	$11,973	0.7107	$30,106	$8,509
8	336,185	$56,765	$43,414	$13,352	0.6768	$29,382	$9,036
9	334,504	$59,306	$44,493	$14,813	0.6446	$28,680	$9,549
10	332,831	$61,960	$45,598	$16,361	0.6139	$27,993	$10,044
Total	3,404,593	$512,839	$409,313	$103,526		$312,954	$76,135

Summary: Net Present Worth of All Proposals

Size	PPA Price	Escalator	NPW PPA Cost	NPW PPA Saving	NPW Cost/Size	NPW Save/Size
280 kW	$0.105	3.00%	$312,954	$76,135	$1,118 / kW $91.94/MWh	$272 / kW $22.36/MWH
300 kW	$0.097	4.00%	$376,863	$109,498	$1,256/kW $88.56/MWH	$365/kW $25.73/MWh
420 kW	$0.085	5.00%	$482,308	$198,598	$1,148/kW $80.95/MWh	$473/kW $33.33/MWh

(1) Where trackers or other generation multipliers are used, use MWH vs. kW as unit.
(2) Can NPW, also, to include Buyout in evaluation

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Thank You for Your Attention!

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