

Stepping up to Commercial PV

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Topics



- The Opportunity
- Customers
- Challenges
- Profit Margins
- Incentives
- Project Timelines
- Marketing
- Sales Strategies
- Site Survey
- Commercial Rooftop PV
- Bidding & Negotiating
- Risk Assessment
- Contracts & Variances
- Change Order Process
- Staffing
- Out of State Projects

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The Opportunity



- Small & midsize commercial jobs are viable for residential installers
- Large installers avoid smaller projects due to problems
 - Varying incentives
 - Code/Permitting
 - Interconnection
 - Zoning



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- Small to midsize commercial jobs are viable for **properly prepared** PV installers
- Larger installers often have their hands full on big jobs making opportunity for smaller dealers!
- Typical prices: \$3/watt for equipment \$4/watt system installed price
- Commercial/Utility Scale Solar
 - Small Scale Commercial
 - Less than 1 million dollars (250 k=KW)
 - 30-200 kw project size (under 1-2 mW annually)
 - Medium Scale Commercial
 - 3-4 MW project tend to buy direct
 - Large Scale Commercial
 - Sun Edison does not bid jobs under 2 MW
 - used to focus on 200 kw to 1 MW, now 50+ MW is the norm
 - Utility solar (Determined by who is buying power)
 - NEC does not apply
 - No need to have UL listing
 - Non UL listed 1000 volt model (module wiring not yet rated to 1000 volts)
 - PC Wire rated at 1000 volt - modules are now being rated at 1000 volts
 - solarworld, astronergy, and CSI now have 1000 volt rated modules

Customers



- Commercial customers differ from residential customers
- Large construction projects require more players
 - Lawyers
 - Accountants
 - Agents
 - Assessors



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- Commercial customers differ from residential customers
 - Customer status, evaluation process, intentions, objective, perspectives
 - 15 kW commercial projects are different from 15 kW residential jobs
- commercial customers do more research on installer customers
 - word of mouth more important in residential
 - references in commercial very helpful, more important than residential
- hard to make transition since you need a first job somewhere
 - first commercial jobs often secured from friends or known business associate

Challenges



- Lumpy deal cycle
- Hard to staff
- Unpredictable incentives
- Financing
- Risk Management
- More people involved
- Unprepared contractors lose money



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- Easy to lose money on lowball bids or even at competitive price
 - ex. Government jobs require prevailing wage (union wage requirements)
 - Ex. Undiscovered risks are not addressed sufficiently in contract
- groSolar has the required experience and can help dealers understand the important elements of managing large install projects

Profit margins



- Profit dollars higher
- Profit margins lower
 - Lean operating strategies
- Growing your commercial business
 - Growing from 2-10 projects difficult
 - Labor pool can be challenge
- Commercial mistakes are expensive
 - groSolar partnering reduces potential for mistakes



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Commercial mistakes can be expensive

- Example, you bid project assuming 12 inch trenching to later learn that 36" will be required
 - The cost to address this issue on smaller commercial project (20-30 kW) is manageable, but MW scale projects would need this contingency addressed in the contract

Incentives



- Variable, complex, and limited
 - Understand application process
- Tax grant extension very important
 - Current grant program expires December 31 2011
 - Project start by mid to late 2nd quarter
 - Get groSolar involved ASAP
 - groSolar can help dealer close project within the 6-9 month window



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- Political navigation on state grants and local incentives can be tricky proposition
 - Programs often expire before applications are reviewed
 - Must know about programs before application process opens up
- Tricks to securing incentives:
 - Hire professional grant writer
 - Get on state list for rfp's
 - Customer letter of intent required for application
 - Larger commercial project companies have this process perfected
 - Midnight fax blitzes are norm in bidding projects
 - Find projects that do not need incentives ;)

Typical Project Timelines

	Close the Sale	Project Review	Permitting	Install	Total
5-10 kW Residential	1 week	1-2 weeks	1-3 months	2-4 days	2-6 weeks
40-50 kW Commercial	1-3 months	1-3 months	1-4 months	1-2 months	3-7 months
250kW - 1 MW Commercial	9-12 months	3-12 months	2-4 months	3-6 months	12-24 months

- Project review for 40-50 kW systems can extend to 6-12+ months
 - these projects are less desirable

Marketing



- Electrical contractors mine existing customer base
- Best leads from sales prospecting
- Large industry tradeshow/events
 - Solar Power International
 - Intersolar
 - PV America
 - Investor Conferences
- Professional website
- Real live human answering the phone



Finding profitable building owners is like finding a needle in the haystack

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- Advertising
 - Radio tends to provide poor return
 - Direct mailings (email and snailmail) are not very productive
 - Word of mouth networking is important
- Investor conferences attract project investors and venture capitalists
 - Commercial project managers may consider \$1000 conference fee acceptable if financiers attend
- Quality commercial prospects
 - Own building
 - Green motives helpful
 - Payback focus

Sales Strategies



- Manage accounts over long sales cycle using teamwork
 - Rapid customer response team
 - TRIAGE process helpful
- Customer communication patterns
 - Steady stream desired
 - Heavy toward end common
 - Waves of input are challenging



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- Manage accounts over long sales cycle using teamwork
 - Internal process important
 - Rapid customer response team
 - Readily accessible
 - All sales staff familiar with top projects
 - TRIAGE process helpful
- Customer communication patterns
 - Some clients require heavy input at the end of the sales process
 - Others need steady stream of input
 - Waves of input are challenging

Potential problems:

- Steep slopes
 - over 30 degrees
- Uneven rocky terrain
- Inaccessible with heavy machinery
 - Bobcat & cement truck access desired
- Heavy tree prep
- Tall skinny buildings
- Lightweight metal structures



- Inaccessible with heavy machinery
 - Small tractor bobcat access at minimum
 - Cement truck access desirable
- Tall skinny building (little useable roof space)
- Lightweight metal structures
 - Pre-engineered metal buildings often undesirable

Commercial Rooftop PV



- Roofing contractor
 - Roof assessment
 - Roofing warranty evaluation
- Roofing types vary widely
http://www.crca.org/crca_membership/commercial_info.htm
- Ballasted mounting racks
 - Thermal expansion
- Avoid questionable roofs



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- Roofing contractor should perform roof assessment
 - Roofing warranty evaluation
- Roofing types vary widely
http://www.crca.org/crca_membership/commercial_info.htm
 - Built up
 - Membrane (EPDM, TPO, PVC)
 - Rock ballasted (tar and gravel)
- Ballasted mounting racks require thermal expansion accommodation
- Questionable roofs should be avoided
 - if you are afraid you might fall thru roof, it might not be good job

Bidding and Negotiating



- Accurate estimating and risk assessment are keys to success
- Bonding
- Warranty
- Liquidated damages
- Satisfying customer needs while managing risk
- Cannot close sale until risks identified



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- Managing risk more challenging than customer needs
- Cannot close sale until risks identified and mitigation strategy formulated

Risk assessment - balancing act



- Unique combination of risks for each job
 - Develop good instincts for possible risks
- Cant invest too much time before job sold
 - Difficult to identify ALL problems in site survey
- Commission geological survey
 - Geotech data



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- Carefully evaluate unique combination of risks for each job
 - Develop good instincts of where risks may be
- Cannot invest too much time before you get the job or you lose money
 - Difficult to identify ALL problems in site survey
 - Ex. After securing job you discover rock at 5 feet depth when footings require 6 foot depth
 - Who pays?
- Commission geological survey
 - Geotech data
 - Ask owner to pay for study
- Dont try to get every job
- Get rid of bad jobs
- Lot of unknowns, must try to limit unknowns

Contract



- Should spell out “known” risks
- Top 3 risks for each customer is different
- Larger jobs have “Risk Managers”
- Larger customers have agents/advisors



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- Should spell out all “known” risks
 - Once risks are identified they become contract exhibits
- Top 3 risks for each customer is different
- Larger jobs have “Risk Managers”
 - Performs risk assessment and management
- Larger customers have agents/advisors with strong knowledge of pv tech, finance, and business

Variations and change orders



Clearly define:

- Variations in the contract
- Arbitration process for addressing unknown risks
- Change order process



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- Clearly define variations in the contract
 - Variations are unknown risks
- Clearly define the arbitration process for addressing unknown risks
 - How to identify something that is non-standard
 - How to mutually agree that it is different
 - How to navigate through process
- Clearly defined change order process

Staffing

- Tricks of the trade
 - Establish network of local subcontractors
 - QUALIFIED labor
 - How to scale vs. how to outsource
- 3rd parties that can support you when you need to



Out of state projects



- Harder - regulatory and logistical challenges
- groSolar can help dealers with out of state projects
- groSolar has installed Megawatt projects in 8 states



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Partner with groSolar



- Partner with groSolar to tackle commercial projects
- groSolar can provide assistance with:
 - PV system design
 - Equipment selection
 - Permitting issues
 - Interconnection guidance
 - Supply contract management
 - Staffing advice



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Example:

- Heavy equipment dealer wants to start commercial solar division
- Bidding 100 kW project, might win grant, need subcontractor, could be groSolar
- This customer would assume ground mount cost/risks
- groSolar would guide PV design, equipment

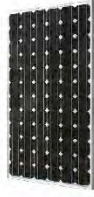
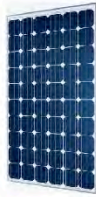
“gro” your solar business with



- Quality products you can trust
- Large inventory in Maryland & California
- Excellent customer service



We call our customers back!



Satcon



Rayport Racking

