Check-in (15 minutes before listed start time)

Introductions

Marketing Overview

Break, Q & A, Networking

Marketing Promotion Strategies - Market Segments
  Lead Generation
  Marketing Tools with Existing Customers
  Customer Relationship Management

Sales Organizations
  Staffing
  Sales Costs

~12:00 Lunch, Q & A, Networking (~45 minutes)

Sales Process
  Connecting with Customers
  Working the Sales Funnel
  Proposals & Presentation

Break, Q & A, Networking

Sales Training
  Salesperson Solar Knowledge Needed
  Sales Training

Sales & Proposal Tools

~4:30 Formal Conclusion, Break, Q & A

Diligence:
  Heights by great men reached and kept were not obtained by sudden flight, but they, while
  their companions slept, were toiling upward in the night.
  - Henry Wadsworth Longfellow
“Sales & Marketing for Solar Salespeople & Companies”

Andy Black
Solar Financial Analyst
(408) 428 0808x1
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Abstract:
Andy Black, experienced salesperson and marketer of PV systems, shares his knowledge about creating and closing residential and small commercial solar sales. First covered, a marketing overview, and discuss effective and ineffective marketing strategies, with a deep look at lead generation. We then look at Sales Organizations, and the benefits, costs, and issues of sales staff, including sales structures & compensation. An in depth look at the sales cycle with interactive examples of the processes, interactions and systems Andy has developed and successfully used for several years. This section will include discussion and interactive examples of lead screening, site visits, proposal preparation and presentation, closing, documentation and writing up the sale.

Finally, the class will close with a discussion of the skills required to be a successful salesperson in the industry, and what hiring managers should look for, as well as some of the tools and new sales strategies that may be emerging. Interactive discussions and questions are encouraged.

Biography:
Andy Black is a Solar Financial Analyst and the owner of OnGrid Solar. OnGrid Solar provides financial analysis and sales education & software to solar installers to help them make a strong sales case for solar electricity to their customers. Andy has more than a dozen years of design, consulting, teaching, sales, and research experience in solar. He specializes in demonstrating the financial payback of solar electricity systems. He is a former NABCEP certified solar installer.

Andy Black is a recent member of the Board of Directors of the American Solar Energy Society and served as Chapters Representative. He is also a member of the Advisory Board of the Northern California Solar Energy Association.

Andy’s formal education includes a Bachelor’s in Electrical Engineering from Penn State University, a Master’s in Electrical Engineering from University of Southern California, and a Marketing Certificate at the University of California. His training in solar electricity includes Solar Energy International’s intensive photovoltaic coursework and more than a dozen specialty courses in solar electric and related fields. He presents regularly on the financial analysis of solar electricity to audiences nationwide.

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SALES & MARKETING FOR SOLAR SALESPEOPLE & COMPANIES

Andy Black

Presented at:
- ASES National Solar Conferences
- Solar Energy International
- Solar Living Institute
- PG&E’s Pacific Energy Center
- Colorado Solar Energy Industries Association
- California Center for Sustainable Energy
- Northeast Sustainable Energy Association
- North Carolina Solar Center

Updated: Fall 2011

Goals of the Day

- Overview of Marketing
  - Market Segments
  - Lead Generation
- Selling
  - Building a Sales Organization
  - Selling Angles
  - Selling Tools available

Audience Survey

Who’s Here? What’s your background?
- Dealer/Installers (owners)
  - Current
  - Future
- Solar Salespeople
  - Current
  - Future
- Residential / Commercial (small or large)
- Thermal / PV
- Marketers
- Others?
- Taken the OnGrid Solar Economics/Payback class?
- Intro to Finance with Leases & PPAs class?

Introductions / Networking

- Quickly Introduce Yourself
  - Name
  - What you do or want in your current/future role
  - (20 seconds or less please)
- Networking List?

Instructor Background

- M.S. Electrical Engineering
- SEI graduate
- NABCEP Certified Solar PV Installer Emeritus
- Involved with Solar since 1991
- Studying, writing, & presenting about Solar Financial Issues since 2000
- Solar Salesperson 2001-2006
- Now a Solar Financial Analyst & Creator of the “OnGrid Tool” solar sales software

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Handouts & Resources

- Slide Handouts
  - Acronyms
  - Feedback Form
- Resources available at www.ongrid.net
- Articles & papers on solar “Payback”
- Upcoming classes & events
  - PV Economics for Commercial & Residential (8hr)
  - Financing Solar Intro including PPAs & Leases (8hr)
- Slides from past classes
- Free Trials of the OnGrid Tool

Decorum

- Questions: Please focus on Marketing & Sales
  - Preferred at points marked:
- Good environment:
  - Cell phones to fun mode
  - Side conversations: Yes or No?
  - Questions & Comments or just Questions?
  - Please help each other

Main Points of Today

How to be successful in the Sales & Marketing of Solar
- Building & Training an Organization
- Developing Sales & Marketing Strategies that Work

Importance of Listening

- **Ignore the rest of the day**
- ?
- Better Listening (to your customer) is far more important than all the rest of what’s discussed today
- Customers will tell you everything you need to do to make them happy (i.e. buy from you)
- Be their “Solar Doctor” not their “Salesman”
  - Find out “Where it Hurts” WIIFM

What are we Listening For?

Agenda

- Overview of Marketing
  - Market Segments
  - Lead Generation
- Selling
  - Sales Organizations
  - Sales Process
  - Proposal & Presentation Options
  - Sales Training
- Selling Tools available
- Interactive Examples (if time)
Diligence

Heights by great men reached and kept were not obtained by sudden flight, but they, while their companions slept, were toiling upward in the night.

- Henry Wadsworth Longfellow

Marketing Overview

What is Marketing?

- “All the activities involved in the movement of goods to final customers”
  - Encyclopedia Britannica

- “The process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods and services to create exchanges that satisfy individual & organizational objectives.”
  - American Marketing Association

Marketing’s Function

- Central in a business
  - Defines product
  - Determines price
  - Protects - Legal
  - Plans for survival and growth - SWOT
    - Strengths, Weaknesses, Opportunities, Threats
  - Promotes & sells
- Dangers if not central: Engineers? Sales? Legal?
- Balances needs: Input from all, Direction to all

Marketing is Essential & Missing

- Marketing is Essential
  - Engineers Rejection
- Marketing is missing in many solar firms
  - No value given to it
  - Hippie days
  - Engineer driven
  - Contractor driven
Marketing is Essential

- Without it, no one knows you’re there
- You don’t know where you are
  - Customer / Market surveys
- You don’t know what to sell or to whom
- You don’t know what to charge

Topics in Marketing

- Marketing is more than advertising
  - Defining Products
  - Promotion Strategies
  - Making a Compelling Case

4 P’s of Marketing

- Product
- Price
- Placement (Distribution)
- Promotion

The Product

- Easy right?
- The “thingus” being sold:
  - Eg. 2 panel SDHW system or 1.25kW PV

The same system is actually 4 or more “products”

- Huh?

4+ Ways to look at Thermal or PV

= 4 “Products”
**Segmentation**

- 4+ groups, each see a different product
- Each group needs its own approach
- Each is a Market Segment
  - There are sub-segments

**Sub-Segments**

- Each Segment has sub-segments
- eg. The Independents might want:
  - Backup Water / Power
  - No foreign or out-of-state energy
  - No or lower electric or gas bill / No rate hikes
  - No utility

**Target Markets**

- Each Segment or sub-segment is a Target Market
  - Each with different needs & wants
  - Needs different messages that relate
- Messages focus on sub-segments
- This becomes Promotion

**Promotion**

- Promote each “Product”
  - Different message for each segment
  - Message tailored to target market

**Promotional By Group**

- Payback doesn’t work on tree huggers
- Tech “coolness” doesn’t work on accountants
- Some crossover, but usually one focus is dominant:

**Target Market Segments**

- Environmentalists – global warming, ...
- Financial – payback focused
- Techno – weenies & gadgeteers
- Libertarians - *$&@ the Utility
- Status Symbol – Am I hip?
One Message Does Not Fit All Audiences

- Trying to hit all at once will hit no one
- Focus on one target in each message
  - Keep target clear
  - Keep message clear for the target
  - OK to miss other targets
  - Go only for most important targets

One segment approach:

- To the Sierra Club member: “A solar system generates a positive cash flow and will increase your home equity”
- Where’s the environmental value?

How Could This Be Reconstructed?

- What’s the Sierra Club member looking for?
- What are the key words & phrases?

How about

- To the Sierra Club: “Solar systems are a great way to preserve the environment cleanly and quietly, and with rebates are at the lowest prices ever. Now your dream of really helping the planet is finally affordable...”

A second segment:

- To a banker looking for an investment:
  “A solar system generates clean quiet energy which helps preserve the environment.”
- Where’s the investment value?

How about

- To the banker: “A solar system generates a positive cash flow and will increase your home equity. Call Andy for a customized financial analysis...”
Sub-Segments Group Exercise

- List several sub-segment motivations in each of these areas (Independence, Enviro, Techno, Financial, Status):

  ______________________ | ______________________
  ______________________ | ______________________
  ______________________ | ______________________
  ______________________ | ______________________
  ______________________ | ______________________

WIIFM

- What’s In It For Me
  - Everyone thinks this way
  - Keep in mind for presentations, promotional material, conversations, etc

Independence Sub-Segments

- Backup Energy - No Blackouts
- No foreign or out-of-state energy in CA
- No bill / No rate hikes
- Save a lot on your bill
- No Utility
- U.S. Energy Independence
- No money to terrorist states for oil

Independence Sub-Segments

- Survivalist, End of World/Social Unrest
- Protection
- Don’t trust the utility
- Grid is weak/old
- Terrorism protection
- Cocooning in retirement (controlled costs)
- Self sufficient
- Electric Vehicle, Plug-in Hybrids
Independence Sub-Segments
- Government mandates – U.S. Bases
- Corporate mandates – franchises and branch offices
- Remote access for isolated off-grid customers
- Produce your own Power
- Have / Be in Control
- “Think Different”
- Early adopters (those who see themselves as)

Enviro Sub-Segments
- Grow your own
- Reduce your carbon footprint / CO2 emissions
- No dirty power plants
- Save water
- Save polar ice
- Stop strip-mining
- Reduce coal digging, burning, and pollution
- Grandchildren & 7 generational thinking

Enviro Sub-Segments
- BP in the Gulf / Exxon Valdez
- CO2 avoidance
- Climate change
- Pollution & Health effects
- Acid Rain & mercury on fishing
- Noise pollution
- Save country / land for future
- Distributed Generation to fight utility-only solar (because it’s more eco-friendly)

Techno Sub-Segments
- Get the latest technology (gadgets)
- Show how cool you are
- Monitor your system on your iPhone
- Support new technology & American innovation
- Efficiency & tech advancement of product
- Advancing society – cutting edge
- Show-offs
- Smarter way to get electricity

Techno Sub-Segments
- Highest state of the art in efficiency to get electricity or propulsion for an EV
- Early adopters (those who see themselves as)
- Apple “Mac” styled simplicity – all self contained
- “Think Different”
- Anti-establishment
- People who understand the technology (semiconductors)
Techno Sub-Segments
- People who like the simple elegance
- Self builders / designers & self monitoring – can participate in the design & operation

Financial Sub-Segments
- Attractive ROI, IRR, or ROR
- Positive Cash Flow if financed
- Improved property value
- Attractive “Payback” & “Lifecycle Payback”
- Get free money from gov’t (rebates, tax credits)
- Increase discretionary / disposable income
- Low ongoing cost, assured performance
- Savings on roof wear & tear

Financial Sub-Segments
- Eliminate Bill (can also be “Independence”)
- Financial independence
- Taking $ from our enemies
- Employment – job creation
- Solar Investment Tax implications
- Low “Beta” (low risk investment, low volatility)
- Rate stability
- Financial hedge

Financial Sub-Segments
- Savings on cooling
- Lowers operating expenses so increase Cap Rate value
- Low maintenance
- Green Lease to tenants w/ Master Meter providing green electricity

Status / PR Sub-Segments
- Keeping up w/ the Jones’s
- Bragging rights
- Positive PR (for a company)
- Customers asking companies: “What are you doing for the environment?”
- Early adopters (those who see themselves as)
- Being a green link in the supply chain
- Offer a competitive advantage to tenants
- ARR A support of economy using US product

Status / PR Sub-Segments
- Hedging future carbon legislation / tax
- Political aspirations
- Solar might help your core business – more sales, greater customer retention
- Employee satisfaction & productivity
- Show off – greater visibility
- Energy Star Certification – LEED Certified
- Increase occupancy / lower vacancy
- Attract tenants who have carbon goals
- Allows participation of tenants
WIIFM: What’s In It For Me

- Everyone thinks this way
- Keep in mind for presentations, promotional material, conversations, etc
- Always be listening for: “What’s In It for Them”

Promotional Messages

- Keep it focused on the target
  - Don’t combine messages
    - Harder for audience to see connection
    - No one will connect -> no calls
  - Use words & phrases from the sub-segments to draw attention
  - Methodical demonstration of benefits
    - Backed up with Evidence

Methodical Demonstration

- Benefits
  - Create a unique offering

Unique Offering

- What’s your business’s mission statement
- What’s your differentiator
- Unmet niche in region’s needs
- What makes your business different wrt your competition

Know Your Competition

- Review their website
- Attend their classes
- Look at their marketing materials
- Call their office & see how customers are greeted
- Get their proposals?
- Look at their coverage areas
- Check their prices

Market Share Myth

- Are the biggest companies most profitable?
- No – often #3 or #4 have higher returns on investment
- Out-innovate (rather than discount)
- Think ‘Profit’ not ‘Market Share’
- Provide high-margin value they can’t
  - Specialty, custom, locale, quality
- Focus on ‘high-involvement customers’
Methodical Demonstration

- **Benefits**
  - Create a unique offering
  - Offer measurable benefits
- **Evidence**
  - Prove the benefit with supporting evidence for each claim

Evidence for Each Point

- **Published Articles**
- Graphs from independent sources

Evidence for Each Point

- **Published Articles**
- Graphs from independent sources
- **Figures & Calculations**

Evidence for Each Point

- **Published Articles**
- Graphs from independent sources
- **Figures & Calculations**

Evidence for Each Point

- **Published Articles**
- Graphs from independent sources
- **Figures & Calculations**
Evidence for Each Point

- Published Articles
- Graphs from independent sources
- Figures & Calculations
- Endorsements & Testimonials
- Quotes from Satisfied Customers
- …
- To the conclusion that they’d be foolish to choose anyone else!

Agenda

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Website

- Services leads (rather than generate)
- Provides anonymous way of getting more info
- Essential

Lead Generation

- Events/Booths
- Mailings
- Data services
- Signs
- Referrals
- Word of Mouth
- Paid Ads
- Flyers & Door Hangers
- Lead Services
- Cold calling
- Articles
- Listings
- Classes/Events

Websites

- Every business should have
  - Many customers search online
    - Even if it only has your contact info
    - Can bid on searchable key words
  - Keep it simple & timeless
    - Minimize content you must maintain
      - Out of date is almost as bad as none at all
    - Keep it low cost & low time investment
    - You may lose interest in updating it, but it needs to stay looking good

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Events

- Solar/Green Home Tours
  - National Solar Home Tour
    - via ASES
    - www.nationalsolartour.org
  - Or other groups or do your own tour/event
- Risk free to audience (not 1-1 face to face)
- Pick a region to focus on
- Create draw to your booth:
  - Solar Train or Solar Fountain – kinetics
  - Give away item

Booths - Venues

- Home, Garden, Farm, & Motorcycle Shows
- Art & Wine, Rotary, Chamber of Commerce & civic/town events/festivals
- Farmer’s Markets & Street Fairs
- Solar Home & Green Building Tours
- Solar Conferences
- Green Festivals & similar
- RV shows

Booths - Venues

- EV Shows
- Bike Coalition Fairs
- Volunteer-based activities
- Sporting events
- Kiosk at the Mall
- County or State Fairs
- Neighborhood parties – “Bring your electric bill!”
- Others: _____  _____  _____  _____  _____

Booth Behavior

- Smile!
- Offer a handshake & your name
  - (Don’t ask theirs)
- “Can I answer any questions about solar?”
- Sign-up list…
  - Hand it to them (don’t ask)
  - Do this if talking to someone else

Sign-up List

- Contact info
- Checkbox options:
  - Call ASAP for free survey & quote
  - Don’t call, just add me to mailing list
- Space for notes (yours or theirs) on bill size, urgency, …
- 5-6 customers per sheet
  - When Full?
- Remove full sheets to safe location

Mailings

- Build mailing list ASAP – Then Use It
  - Send company announcements
    - Events, classes, presentations, news
  - Stay in their mind for referrals
- Keep sold & lost customers on mailing list
- Example: 10K-15K direct mail per week
  - Target: >1800sqf, good neighborhoods - high value homes, >$150/mo bills, high equity, high net worth
  - BP & others also successful w/ Postcards
### Postcards

- Easy & low cost for you
  - Printing, paper & postage all minimized
- Effective
  - Headline is unavoidable
  - Must read to scan, even if they discard it
- Easy for them
  - No letter opener required
  - A quick scan gives them all the info
- Easy to hang on to (on the fridge)

### Email

- Create Opt-In “Learn More About Solar” email signup opportunities:
  - On website
  - At events: classes, your booth/table, etc.
- Use Email Management service: eg. Constant Contact
  - Allows quick/easy “unsubscribe”
  - Professional looking emails, easily sent
- Send only real news & info
  - Quarterly Newsletter
  - Class, Tour, Open-Solar-House Announcements

### Data Services

- Provide targeted addresses
  - Carefully pick your targets
  - Overlap w/ your other methods
- Single or multi-use*
  - Get the multi-use and use it often (every 2-4 months)
- Need them to see your name/message often
  - 9x Rule
  - 1 in 3 Rule
  - = 27 possible exposures needed
- Sources: Hoovers.com, infoUSA.com

### Signs

- Installation Truck
- Sales car magnetic
- Lawns at installation

### Word of Mouth & Referrals

- Ask customers for names
- Ask customers to give out your flyers and cards
  - “Warm” call-ins better than cold calls
- Bonus of $250-$500 depending on size
- Make yourself easy to refer to
  - Keep them regularly connected & reminded w/ postcard mailers, notes, etc

### Professional Referrals

- Partner relationships with:
  - Architects & Designers
  - Bankers & Mortgage Brokers
  - Other trades: plumbers, HVAC, roofers, electricians
  - Chamber of Commerce referral groups
  - Real estate agents
Paid Ads

- Broadcast TV - failed big at one company!
  - Too large an area for small companies
  - Too unfocused
  - Easily ignored
- Paid Print Advertising - not clear
  - Similar to TV

Paid Media Success

- Radio worked for Solar Depot
  - Could spread leads over many dealers over whole broadcast area
- Cable access or focused programming
  - Special shows on green & solar homes
  - Localized or targeted markets

Door Hangers / Flyers

- Heard mixed reports
- Possible approach:
  - “I’ve already checked out your house”
  - “Solar would go well on the back”

Lead Services & Sources

- Pay for Generated ‘qualified’ leads
  - $25-$120 per lead (non-exclusive - typ. given to 3 or 4)
  - $120-$500 per exclusive lead (if available – bad idea)
  - FindSolar.com/CoolerPlanet.com - $120-$190/lead
  - RoofRay.com - $65 Res, $150 Comm with 10% close
  - CleanEnergyQuotes.com - $25/lead
- Total cost target: $1,000-$2,000 per closed sale
- Seems expensive w/ no assurance of sale
  - Level of screening?
  - Closing ratio, as defined by the provider?

Lead Service Realities

- Suppose each customer signs up on 3 websites
- Because of SEO efforts all are likely Lead Providers who give lead to 4 companies
- Now customer gets ~12 calls
- Problem: Must be 3rd caller to get in
- If 50% buy:
  - Cost per closed sale = Lead Price * 12/50%
  - = 24x the Lead Price (24 x $50 = $1200)
  - They may expect one in 30 to 60 will ‘close’ (buy), so cost could be $2K+

Articles & Media Pieces

- Articles in the paper or magazine
- Best for credibility boosting
  - Done by others
  - Less perception of bias
- Lowest cost
- Hardest to get - most effort
  - Possible by working it & having real news
Listings

- Google and other listings
- Membership listings in ASES, SEIA
  - SEIA chapters: CoSEIA, CalSEIA, NJSEIA, MSEIA, NYSEIA, MDVSEIA, etc
  - ASES chapters: CRES, NorCal Solar, PRSEA, NESEA, NCSEA, etc.
- Lead Generation services
- Phone Book
- Online listing services & Green lists

Classes - My Favorite!

- Great for:
  - Connecting with customers
  - Inspiring interest
  - Giving unbiased facts
  - Reducing sales cycle
  - Raising awareness
  - Inspiring confidence - you’re the expert!
- Risk free to audience (not 1-1 face to face)

Classes - Venues

- Rotary
- Elks, Lions
- Company lunches or Earth Day events
- Libraries
- Green Festival
- Solar Home Tours
- Informal in Living Room
- At your office
- Houses of worship
- Environmental groups
- Brown Bag series
- Electrical, Roofing trade associations
- Architects, Bankers

Where Are The Customers For Each Segment?

- Enviro: Earth & Green Festivals/Events, Solar Home Tours
- Independents: Chamber of Commerce & Rotary - Business Owners & Leaders, Conservative Churches, Doctors, Lawyers
- Economics: Suburbs w/ large energy use: pools, hot tubs, extra fridges, lots of computers left on
  - Avoid cities: dense (low, restricted sqf = low use), expensive to install (roof access, permits, hassle)

Marketing Tools with Existing Customers

- Surveys - gather feedback on your performance in many areas
- Testimonials & Quotes for website & brochures
- References
  - Test them

Marketing Analysis Matrix

<table>
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<tr>
<th>Lead Source</th>
<th>Cost per 100</th>
<th>Closing Rate</th>
<th>Cost Effectiveness</th>
<th>Minimum Annual Cost</th>
<th>Startup Cost</th>
<th>Ease to Get</th>
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Results/methods vary by region, market segment, specialty, etc:
Expand and fill out to determine what 3-5 are most cost effective for you
Customer Relationship Management (CRM) Tools

- Part of “Systems” approach to business plan
- Necessary to manage and utilize valuable asset for:
  - Marketing
  - Sales productivity tracking & forecasting
  - Project management (if integrated)
- Can improve efficiencies and boost sales
- Can improve time management

CRM Tools

Customer Relationship Management

- Siebel
- Sales Logix
- SugarCRM
- Oracle NetSuite or SmallBusinessSuite
- …many others

Don’t try to merge CRM w/ Project Management

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Sales Organizations

Sales Staff

Do you want & need them?

- What are the goals of your business?
  - Do you want to expand & when?
- Are you good at sales?
- What’s your time worth?
- Are you willing to manage them?

Benefits of Sales Staff

- Professional and expert at the job
- Dedicate all their time and energy to this one task
- Low cost if structured properly
  - Mostly commission & time invested
- Low risk if trained properly
Risks of Sales Staff

- Authorized to make contracts
  - Potentially expensive mistakes
  - Need good training & guidelines/limits
- Are the most visible part of the company
  - Need good manners, rapport, responsiveness

Cost of Sales

- Expenses
- Overhead
- Commissions and base pay

Note: This Section applies to all sales:
Someone (company or worker) has to “eat” these costs

Sales Expenses

- Mileage reimbursement
  - 100% or less of Federal Rate: 51¢/mile in 2011
  - Fed rate is fair - includes all costs of driving, such as insurance, wear & tear, maintenance, etc.
- Training
- Meals
- Events
- Office Supplies & Printing
- Worker’s Comp & General Liability Insurance
  - Can total $500-$1000/month/person

Overhead

- Payroll taxes
- Office space
- Equipment & tools - computer & software, camera, ladder, pathfinder, car
- Marketing to get enough new leads
- Referral bonuses

Compensation Plans

- Type
  - Commission plus Base
  - Commission only
  - Salary only with bonuses
- Payment Terms
- Territories
- Termination issues

Worker Status (W2 v.1099)

- Either type of worker can be on any type of plan (Commission and/or Base, etc)
- W2 gets benefits, so usually lower cash
- 1099 owes more taxes so gets more cash in lieu of benefits and security
  - Often 20-30% difference between
- Numbers on following pages assume 1099 (independent contractor) workers
Commission Only

- Most common (still?)
- Most risk & highest potential to worker
- Lowest risk to company
  - Could be more costly if high volume
  - Least control
    - Only paid to sell, may resist other tasks
- High income in good times can cause poor management and coworker reaction

Commission Only Ranges (PV)

- 3-6% typical, 1.5% low, 7.5% high
  - Based on gross sale (before rebate)
  - Often includes shipping, fees, etc.
  - Usually excludes sales tax
  - >8% if “Parts Only”
- Occasionally higher commission rate on Gross Profit
  - Difficult to judge, be transparent & fair

Commission Plus Base (PV)

- Becoming very common (at least in comm.)
- Safer for worker - guaranteed small income in slow periods
- More risky for company in case of low performance
- Can more easily request other tasks
- Examples: $20K + 3% or $40K + 2%
  - Seems like a low %

Salary plus Bonus

- Safest for worker & customer
  - Least conflicting motives
- Greatest risk to company
- Can most easily request other tasks

Sales Targets & Quotas

- Target compensation $60K-$120K
- Example:
  - $2 million minimum
  - $3 million goal for $110K per year
  - Less than $2 million =

Quotas

- Penalties for below the minimum
- Bonus for exceeding high target
- Monthly or Quarterly periods
- Adds complexity
- Can cause gaming of timing
Commission Adjustments

- Adders for higher than Par selling price
  - Sharing in some of the extra pure profit
- Keep it simple
  - Reduce frustration and anxiety
  - Reduce time wasted calculating and checking
- Caps - terrible idea - very bad “reward” to best performers
- Changes: Provide for “Effective Date” & notice period

High $ sales - large systems
- Commission reduction may not be wise
- Higher reward
- Greater risk - more eggs in fewer baskets
- More work (meetings & docs) per sale
- More competition
- But - thinner margins for company

Fair Compensation From Start

- Start with a fair comp plan that will not need to be lowered later
- Reductions in plan very bad for morale
- Start lower, and raise % if need be to attract the best

Top & Solid Performers

- Attract and retain solid performers
- What is the cost of training replacements?
- What is the lost opportunity?
- What is the risk replacements pose?
- Industry growing fast - hard to find

Territories

- Upfront assigned geographies simplest
  - All sales pay assigned salesperson
  - Simplifies all squabbles
  - Team works out sharing/reciprocation
- 1st salesperson gets all geographies, but knows they’ll be cut back to fewer (and knows which ones)

Agenda

- Overview of Marketing
  - Market Segments
  - Lead Generation
- Selling
  - Sales Organizations
  - Sales Process
  - Proposal & Presentation Options
  - Sales Training
  - Selling Tools available
Sales Process

The Sales Process Starts With A Sales Business Plan

- Your Differentiator
- Your Mission Statement
- Budget
- Sales Strategy
  - Style & Approach
  - Leads
  - Systems
- Development plan for team feedback & growth

Sales Process

- Build a process
  - Lead plan
  - Software: CRM, Proposals, Paperwork
  - Site survey
  - Presentations, Sales book, Closings
  - Paperwork completion streamlining
- Repeat, Refine, Train, New ideas – add & test
- Analytics – metrics/measurements, analysis, feedback

Connecting with Customers

- Sales style & approach
- Consultative sales approach
  - Working to help find best solution for customer
  - Regardless of my interests
  - Always pays off
  - Better relationship, referrals & sleep

Consultative Sales Approach

- Everything that follows fits this
- Conversations
- Documents
- Contracts
- Customer service

Listening > Talking

- Play Doctor
  - Find out where it hurts before prescribing a solution
- Don’t ‘Over Inform’
  - Answer their questions concisely
  - Be confident you know solar, you don’t need to prove it all to them
The Sales Funnel

<table>
<thead>
<tr>
<th>Stage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>100%</td>
</tr>
<tr>
<td>Contact info</td>
<td>80%</td>
</tr>
<tr>
<td>Call screen, Qualify</td>
<td>60%</td>
</tr>
<tr>
<td>Prospect</td>
<td>50%</td>
</tr>
<tr>
<td>Site visit</td>
<td>40%</td>
</tr>
<tr>
<td>Proposal</td>
<td>30%</td>
</tr>
<tr>
<td>Sold</td>
<td>20%</td>
</tr>
<tr>
<td>Documentation</td>
<td>10%</td>
</tr>
<tr>
<td>Construction</td>
<td>4%</td>
</tr>
<tr>
<td>Communication</td>
<td>9%</td>
</tr>
<tr>
<td>Complete</td>
<td>8%</td>
</tr>
<tr>
<td>Referral contact</td>
<td>4%</td>
</tr>
</tbody>
</table>

Lead - Call Screening

- Customer call-in
  - 1st screen done by reception or inside sales
    - Gather key data
    - Contact info & usage or bill
    - Keep it simple & positive

Lead Disposition

- Call back?
- Visit immediately?
- Do rigorous call screen before visit?
- Examples

Always Right

- “The Customer is Always Right …”
  - “… but not every customer is the right customer for us” – CEO, Southwest Airlines
- Choose the right customers, and give them the best - then:
  - “The Customer is King!”
- Screening helps ID the “right” ones

Respond & Pre-Qualify

- Call and Email Lead ASAP Same Day Lead Arrives
  - Instant response builds connection
  - Allows you to be “1st In” (critical)
- Gather contact info, ballpark electric bill cost, and motivation (economics, envirom, independence)
- Schedule Qualifying follow-up call (if not now)
- Research & Prepare
  - Zillow.com - real estate stats, home value, etc
  - Google them
  - Title search

Prospecting Steps

- Respond - phone/email
- Pre-Qualify - phone
- Prepare
- Qualify - phone
- Site Visit - in person
- Prepare proposal
- Present - in person
- Follow Up – phone, email
- Close - in person
Qualify

- 20-60 minutes gathering data & providing some answers
- Discuss Goals and Intentions to Go Solar
  - Economics, Environmental, and/or Independence
- Answer they & their partner’s questions
  - Ask - “Anyone else part of this decision?”
  - Never assume status or orientation
  - Never assume anything - always ask
- Initial Assessment of: Roof Type, Orientation, Exposure, Access, Energy Usage
  - View Site on Google Maps (aerial) & Google Earth
  - (OnGrid builds links based on address entered)

Qualifying Call

- Rigorous but gentle discussion
  - Depending on lead volume, trying to weed out time wasters
- Great way to start building rapport
- Establish consultative approach
- Learn motivations from key words spoken
- Learn customer lifestyle
- Begin to employ NLP: Neurolinguistic Programming data gathering & techniques

Aerial Views

- High Res Aerial Views & Analysis
  - Bing Maps (was called Live Search Maps)
    - http://www.bing.com/maps
  - Eagle View remote building dimensions:
    - http://www.eagleview.com
  - Pictometry
    - http://www.pictometry.com
  - Precigeo remote shading analysis
    - http://www.precigeo.com

Precigeo

- Confirm Location
  - Ask permission to call up aerial view/map
  - Online maps/addresses are sometimes off by a little or a lot
  - Use roof color, house shape, pools, relative distance to corners, trees, and Google Street View to confirm you’re looking at the right house
Max System Size

- Gather kWh usage
  - or electric bill $ and figure out usage
- Max System Size is smallest of:
  1. Customer budget (not known yet)
  2. What fits in area available
  3. What minimizes electric bill
- Start with 2 & 3 for initial budgetary test

Preliminary Electric Investment, Incentive and Energy Savings Analysis

<table>
<thead>
<tr>
<th>Harry and CJ Fair</th>
<th>Pelham, CA 10803</th>
</tr>
</thead>
</table>

System (approximate)

- Approximately 58 Solar PV Modules
- and 4 Inverters
- Estimated DC Size: 12 to 14 kW DC (STC)
- Estimated CEC AC Rating: 10 to 12 kW AC (CEC)
- Location's Average Equivalent Noontime Sun Hours: 5.5
- Estimated Annual Energy Production: 16,000 to 18,000 kWh/yr

Utility & Tariff

- PG&E
- Current Rate Schedule: E1-S B = Residential Tiered kWh
- New Solar Rate Schedule: ES-5 B = Residential TOU Tiered kWh
- Historical Usage with Estimated Lifestyle/Capacity Changes:
  - 20,000 kWh/yr
- Current Utility Rate is as high as:
  - 3.9¢/kWh
- Current Utility Rate Average:
  - 34.3¢/kWh
- Estimated First Year Utility Savings:
  - $5,880 to $5,880 per year

Preliminary Solar Electric Investment, Incentive and Energy Savings Analysis

<table>
<thead>
<tr>
<th>February 20, 2010</th>
</tr>
</thead>
</table>

Results (preliminary estimates)

- Net Savings over 25 years $209,000 to $243,000
- Pre-Tax Compound Annual Rate of Return (IRR) over 25 years 22%
- Payback (after tax) - not a good measure
- Total Lifecycle Payback (25-year Net Savings divided by Net Cost) 9 years
- Theoretical Initial Increase in Property Value $126,000

Cost & Incentives (approximate)

- Estimated First Year Utility Savings $5,880 to $5,880 per year
- Federal Tax on Rebate or Non-Federal Grants $559
- Estimated Fees NOT included in system contract price $3,600
- State Tax Credit Benefit (net), after Federal Tax on the State Tax Credit $116,700 to $126,400
- 30% Federal Tax Credit (ITC) or Treasury Grant $116,700 to $126,400
- Pre-Tax Compound Annual Rate of Return (IRR) over 25 years 22%
- Net Savings over 25 years $209,000 to $243,000
- Pre-Tax Compound Annual Rate of Return (IRR) over 25 years 22%
- Payback (after tax) - not a good measure
- Total Lifecycle Payback (25-year Net Savings divided by Net Cost) 9 years
- Theoretical Initial Increase in Property Value $126,000
An Example Call

- Need a volunteer to run thru 1st part of the call
- Notice
  - What is asked for
  - What is offered
  - What gets recorded
  - How connection & comfort are built
  - Am I listening?
  - Am I finding out their problem?

The Site Visit

- 2nd Opportunity to show care, thoughtfulness, and thoroughness
- Provide small gift (ACEEE book, CFL, DVD) and company folder of background info
  - [www.aceee.org](http://www.aceee.org)
- Neat, clean and tidy uniform & appearance
- Answer any questions and of course:
  - Inform them of the installation process

Video & Multimedia Solar Education and Marketing Tool

**DVD**, “Clean Energy News: Buying A Solar Electric System” is a comprehensive 14 minute overview of residential PV economics, siting, and installation. Uses clear animated graphics to show elements of technology
- Timesaver for solar salespeople, answers most FAQ's, useful for educational, promotional, and marketing purposes
- Professionally produced, the writer-director is an experienced solar advocate and a 28 year veteran of local and national broadcast television journalism

Site Visit Discussion

- Solar 101 (CAUTION - to their interest & pace)
  - Educate from Sales Book
- Review current energy consumption
- Review goals (customer’s!): Eliminate part or all of Bill
- System size and square footage
  - Location of equipment collectors and inverter / tanks & controls
- Equipment and Warranties
- Utility/Rate Schedules/Net Metering/Annual Billing Cycle
- Incentive structure and limitations, Federal Tax Credit
- Increases home value, but often not the Property Tax
- Solar Renewable Energy Credits (S-RECs) as applicable

Sales Book

- Solar 101 info:
  - Diagrams of Net Metering & other solar concepts
  - Insolation graphics (NREL)
- Manufacturer Literature on products (cut sheets)
  - Product warranty details
- Examples of satisfied client write-ups & pics
  - Reference lists including location (town), size, type of roof, module & inverter info
- Incentive info, Utility rate info
- Sample / copies of contracts, application forms
- Info on relevant solar laws (Shade Control Act, CC&Rs, Solar Rights, Permit Fee Limitations, etc)
- Price & Adder lists / tables, Sales Tax tables

Complete Toolkit

- Solar Pathfinder or SunEye
- Digital camera
- Tape measure & roller wheel
- Digital level
  - iPhone Clinometer
- Ladder - folding or telescoping
  - Damage to gutters & jamming
- Kill-a-Watt or Watt’s Up
- Volt meter
- Site survey data sheet
  - Draw map/layout: identify meter location, roof space, shading objects, location of array, inverter location, property line, etc
Site Survey Data Sheet (PV)

Use Tools Effectively
- To create confidence
- Build rapport
- Activate imagination
- Have them:
  - Go on the roof with you
  - Hold the end of the tape
  - Learn how to use the Pathfinder & let them play with it - great for their imaginations!
- Take class on Site Assessments

Solar Pathfinder
Use beanbag or non-ferrous camera tripod (rather than their crappy one)
Use digital camera instead of grease pencil
  - Much faster, more detail, more accurate
  - Can be included in proposals

Inspect the Electrical Panel
- Learn electrical safety
- Pop the cover
- Look for grounding conductor
- Take photos and notes on ampacity
  - Advise customer of need and cost of upgrades and alternatives - before the sale is closed

Complete the Visit
- Thank for their time
- When will you return with a proposal
  - Immediate - do in the car?
  - By X date (3 days max)
  - Follow-up 2 days after presented

Presenting
- Present Proposal & Quote
  - Details in next section
- Follow-up regularly, consistently, politely
  - Ask when it would be ok to check in again
- Create/Use Urgency
  - Incentive reductions / funding limits
  - Tax Year-End – installation lead times req’d
  - Product price increases (rare)
  - Limited time offers, discounts, promotions
  - Blackouts (rolling, shortage, or storm related)
## PV SITE ASSESSMENT

**Date:**

---

### OWNER NAME

---

### LAYOUT & SOLAR PATHFINDER POSITIONS (SEE OVER IF NEC.):

---

### ROOF:

<table>
<thead>
<tr>
<th>Component</th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Shake</td>
<td>Clay-Tile Cement Fiber Tile Metal-Tile Other-Tile</td>
</tr>
<tr>
<td>Tar &amp; Gravel Foam</td>
<td>Vinyl Membrane/EPDM Torchdown</td>
</tr>
<tr>
<td>Standing-Seam Metal</td>
<td>Ground Ground-Multi-Row Hill Slope: ___°</td>
</tr>
<tr>
<td>Built-Up (Multi Ply)</td>
<td>Y N</td>
</tr>
<tr>
<td>Eichler</td>
<td>Y N</td>
</tr>
<tr>
<td>Attachment Penetrations Discussed?</td>
<td>Y N</td>
</tr>
<tr>
<td>Soon to Be Replaced?</td>
<td>Y N</td>
</tr>
<tr>
<td>To Be Reroofed?</td>
<td>Y N</td>
</tr>
<tr>
<td>Pitch Angle:</td>
<td>Orientation:</td>
</tr>
<tr>
<td>Color:</td>
<td>Age:</td>
</tr>
<tr>
<td>Array Area Access:</td>
<td>EASY MED HARD</td>
</tr>
<tr>
<td>Conduit Install Access:</td>
<td>EASY MED HARD</td>
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### INSOLATION:

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<tr>
<th>Parameter</th>
<th>June 21</th>
<th>Equinox</th>
<th>December 21</th>
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<tbody>
<tr>
<td>Percent Full Sun:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latitude:</td>
<td>37° N</td>
<td>17° E</td>
<td></td>
</tr>
<tr>
<td>Mag Variation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future Shading Issue?</td>
<td>Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soiling Issue?</td>
<td>Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spray Hose To Clean?</td>
<td>Y N</td>
<td></td>
<td></td>
</tr>
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</table>

### STRUCTURAL:

<table>
<thead>
<tr>
<th>Parameter</th>
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<tbody>
<tr>
<td>Roof rafters appear sound?</td>
<td></td>
</tr>
<tr>
<td>Roof supporting structure accessible (ie. via attic)?</td>
<td>Y N</td>
</tr>
<tr>
<td>Rafter: 2x4x</td>
<td>2x6x</td>
</tr>
<tr>
<td>Eichler</td>
<td></td>
</tr>
<tr>
<td>&quot;Rafter Span Between:</td>
<td>Purlins</td>
</tr>
<tr>
<td>Sheathing:</td>
<td>Plywood Board</td>
</tr>
<tr>
<td>Wind Loading Issues?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

### AESTHETIC:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hide panels from street?</td>
<td>Y N</td>
</tr>
<tr>
<td>Match slope of roof?</td>
<td>Y N-Rack</td>
</tr>
<tr>
<td>Conduit discussed?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

### UTILITY LOAD CENTER:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE:</td>
<td>120 120/240 208/3ph OTHER</td>
</tr>
<tr>
<td>Main Breaker:</td>
<td>A</td>
</tr>
<tr>
<td>Ground Rod Found?</td>
<td>Y N</td>
</tr>
<tr>
<td>Grounding Conductor Found?</td>
<td>Y N</td>
</tr>
<tr>
<td>Bonded to: Rebar Water Pipe Gas Pipe None</td>
<td></td>
</tr>
<tr>
<td>SE Panel Nameplate / Main Breaker Rating &amp; Brand:</td>
<td></td>
</tr>
<tr>
<td>Subpanel 1: Type &amp; Panel Nameplate Rating:</td>
<td></td>
</tr>
<tr>
<td>Emptys: # Possible To Twin: Location:</td>
<td>Emptys: # Possible To Twin: Location:</td>
</tr>
<tr>
<td>Inverter: Indoor Outdoor Location:</td>
<td>Wall Space? Y N</td>
</tr>
<tr>
<td>Inverter Area Accessible?</td>
<td>Y N</td>
</tr>
<tr>
<td>Generator Area Accessible?</td>
<td>Y N</td>
</tr>
<tr>
<td>Other Major Pieces Accessible?</td>
<td>Y N</td>
</tr>
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</table>

### CONDUCTOR DISTANCES:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Array to Inverter/CC:</td>
<td></td>
</tr>
<tr>
<td>SE to Grounding Electrode:</td>
<td></td>
</tr>
<tr>
<td>Inverter to Lockable Disconnect:</td>
<td></td>
</tr>
<tr>
<td>Lockable Disconnect to Main Panel:</td>
<td></td>
</tr>
<tr>
<td>Inverter to Batteries:</td>
<td></td>
</tr>
<tr>
<td>Inverter to New Sub Panel:</td>
<td></td>
</tr>
<tr>
<td>New Sub Panel to Main Panel:</td>
<td></td>
</tr>
<tr>
<td>Obstacles (Concrete Walls, etc):</td>
<td></td>
</tr>
</tbody>
</table>

---
Target Proposal at Market Segment

- Graphics & Discussion based on Marketing Segment
  - Customer identified during phone screen and discussions
  - Is the Value Proposition tailored to your customer?
- Give them the WIIFM info and evidence they need for their reasons & motivations

Sell To Your Customer’s Needs

- Include Energy Efficiency?
- Consider your motivations (and pay)?
- Propose 2 options: Why?
  - Either/Or ‘Close’

Objections & Closing

- Common objections you encounter:
  - Eg. If solar is getting cheaper, why buy now?
  - Let’s make a list and come up with answers:
    - ________________________________
    - ________________________________
    - ________________________________
- Closings:
  - What are your favorite closing methods:
    - Eg. “Either/Or”
    - ________________________________
  - Assuming the sale is closed, let’s complete the sales process

Writing-Up the Sale

- Get at close:
  - Contract signed
  - Incentive Application signed
  - Interconnection Authorizations signed
  - Copy of Homeowners Insurance*
  - Utility bill*
  - Deposit check
*Digital camera photo usually suffices

Turning Sale In To Production

- Drawings: sketches of electrical, mechanical layouts, proposed conduit runs
- Photos of front, roof, and from all angles
- Job description write-up with:
  - Size, components
  - Electrical details
  - Mechanical details - rafter size, pitch, span
  - Special needs, concerns, customer desires

Waiting & Construction Communication

- Track project weekly w/ construction manager
- Someone in the company keep’s customer up to date at frequency they want (every 2-4 wks)
  - Ideally salesperson, to maintain connection for later referrals, or
  - Construction Coordinator
- Single point to solve problems & hear concerns
Construction Marketing

- With permission:
  - Invite the neighbors to see the crew work
  - Send postcards to neighborhood
- Have a barbie (BBQ) upon completion & invite friends and neighbors
  - $500 in burgers and beer could produce some good leads
  - Fursters bond with customer

Customer Final Package

- After System is Interconnected Sales Representative Schedules Visit with Client
- Final Package Includes:
  - System Payment Receipt
  - Final Signed Building Permit and Plans
  - Equipment Warranty Forms
  - Contractor Warranty Form
  - Owners Manual
  - System Operation guide
  - Salesperson Evaluation Form
  - Customer Referral Sheet

Referral Contact

- With job done well, time to ask for:
  - Feedback
  - Testimonials
  - Quotes
  - Referrals - you often have to ask
    - Difficult for me - gets into cold-calling
    - Provide them handout materials

4-Month Follow Up

- After 4 Net Metering Bills
- Sales Rep Calls Client to
  - Review Bills and System Performance
  - Make sure client understands how to read new bills
  - Reintroduce referral program

What if You Didn’t Close

- Find out Why?
- Ask in non-threatening, non-aggressive way
- Don’t abuse the trust given
  - Respect the answer
  - Don’t use it as angle

Communication Points

- Email, Letters
  - As soon a lead comes in
  - With preliminary proposal
  - In site visit folder
  - With proposal
  - Proposal follow-up
  - Thank you for buying
  - Starting construction soon
  - Permission to contact neighbors
  - Note to neighbors
  - Installation completion
  - Party after installation
  - 1 month after install
  - Requesting referrals & informing of referral bonuses
  - Requesting testimonial / quote
  - 4 & 12 months after install re Net Metering bills / True-Up
  - January after install: Claim your tax benefits
  - Annual check-in
  - Future homeowner: How to get service for your system

See OnGrid Free Trial or website for samples of each
Agenda

- Overview of Marketing
- Selling
  - Sales Organizations
  - Sales Process
  - Proposal & Presentation Options
  - Sales Training
- Selling Tools available
- Conclusion
- Interactive Examples (if time)

Proposal & Presentation Options

Proposal Process

- Quick or detailed layout of array for size & shading
- Accurate price quote
- Analyses: Economic, Environmental, etc
- Write it up including layout & analyses
  - Include prepared copies of all docs to be signed: contract, incentives, interconnection, etc.
- Present it
- Follow up in 2 days

Quick Layout

- Do quick layout with module templates on graph paper
- Capture layout with camera - Can include in proposal if tidy

CAD Layout

Layout on Plans

- 1/4”:1’ scale templates also works on many “Plan” docs
Proposal Options

- Depending on customer needs and interest:
  - Length: Minimal, Medium, Long/Detailed
  - Segment & Sub-Segment focused
- All variations include all documents to sign
  - Quote & Contract
  - Incentive Docs
  - Interconnection Docs
- Examples shown are available at:
  or in a free trial of the OnGrid Tool

Minimal Proposal

- Size & cost of proposed system
- Expected impact on their bill
- Contract documents
  - Quote & Contract (CSLB compliant)
  - Incentive Docs
  - Interconnection Docs

Min Proposal Example

- Size & cost of proposed system
- Expected impact on their bill
- Contract documents
  - Quote & Contract (CSLB compliant)
  - Incentive Docs
  - Interconnection Docs

Med Proposal Example

- Size & cost of proposed system
- Expected impact on their bill
- Contract documents
  - Quote & Contract (CSLB compliant)
  - Incentive Docs
  - Interconnection Docs

Min Proposal Example

- Size & cost of proposed system
- Expected impact on their bill
- Contract documents
  - Quote & Contract (CSLB compliant)
  - Incentive Docs
  - Interconnection Docs

Med Proposal Example

- Size & cost of proposed system
- Expected impact on their bill
- Contract documents
  - Quote & Contract (CSLB compliant)
  - Incentive Docs
  - Interconnection Docs
Med Proposal Example

Total Lifecycle Payback

Annual Costs:

<table>
<thead>
<tr>
<th>Initial Cost</th>
<th>Total Savings</th>
<th>Total Lifecycle Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,000</td>
<td>$4,000</td>
<td></td>
</tr>
<tr>
<td>$4,000</td>
<td>$6,000</td>
<td></td>
</tr>
<tr>
<td>$6,000</td>
<td>$8,000</td>
<td></td>
</tr>
<tr>
<td>$8,000</td>
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<td>$10,000</td>
<td>$12,000</td>
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<tr>
<td>$12,000</td>
<td>$14,000</td>
<td></td>
</tr>
<tr>
<td>$14,000</td>
<td>$16,000</td>
<td></td>
</tr>
</tbody>
</table>

Cash Flow with a Loan

Net Annual Savings:

Loans cost, maintenance, inverter replacement & new smaller electric bill

Plus Rate of Return (IRR)

How Solar Electric Systems work
Solar Electric systems generate electricity silently and reliably any covering part, daylight falls on the solar array (arrays, as it is called, depending on the number of panels used). The solar cells convert light energy into direct current electricity, which is then sent through a transformer, where it is converted to alternating current electricity. The electricity either goes to your appliance and lights, or to the grid, when work.

Long / Detailed Proposal

- Discussion of how systems work
- Other ways to save energy
- Graphics on their electric use before and after solar is installed
- Graphics of how it will look on their building

Long Proposal Example

In sight and during obvious weather, the solar system's output is variable or incredibly lower, but you know the system is efficient, directly. It doesn't always mean, in our grid, so you can live as much as you want, and the time your bill is a function of whether the solar array is able to put out any power.

Long Proposal Example

Environmental Analysis
Your solar system will generate substantial environmental benefit in the form of reduced emissions from power plants. Over 25 years, the solar system is estimated to offset:

- CO₂ emissions:
  - 200,000 lbs. of CO₂ per year, equivalent to growing 100 acres of trees.
- Smog:
  - 600,000 lbs. of NOx per year, equivalent to growing 1,000 acres of trees.
- Acid Rain:
  - 3,000,000 lbs. of SO₂ per year, equivalent to growing 8,000 acres of trees.
- Water pollution:
  - 200,000 lbs. of mercury per year, equivalent to growing 1,000 acres of trees.

These calculations are based on the average emissions for power plants in the United States.
Google Sketchup

- Draw the building
- Show the solar system

Pictures with Graphics

- Solar on Roof
- Inverters on Wall

Proposal Presentation

- Always in person, when possible
  - Continues rapport, Can look you in the eye
  - Give immediate answer to questions
  - Get immediate feedback - Ask for the sale
- Gauge client interest: Skip to the good stuff
- Be sensitive to feedback, verbal and non-verbal (NLP)
- Take notes - show attentiveness
- Get training on “closing”
- Follow-up in 2 days

Agenda

- Overview of Marketing
- Selling
  - Sales Organizations
  - Sales Process
  - Proposal & Presentation Options
  - Sales Training
- Selling Tools available
- Conclusion
- Interactive Examples (if time)

Solar Salesperson Knowledge

- Minimum knowledge & skill to be hired
- Minimum job knowledge
- Desirable knowledge

Sales Training
Sales Business Plan for Salespeople

- The sales individual is their own brand
- What’s your differentiator
- What makes you unique
- What makes you appropriate for your region’s knowledge of solar
  - What sets you apart
  - Teaching/selling style

Minimum To Be Hired

- Varies by companies willingness to train
- Employee or contractor?
- Mathematical concepts of inflation, compound arithmetic, and similar level
- Computer skills: Excel, Word, ability to learn CRM tools & PowerPoint
- Communication: written and verbal
  - Ability to bring it down to simple terms

Minimum For In-House Sales

- Know basics of what solar can do, costs, & requires (roof, orientation, shading)
- Must be on path to understanding:
  - How solar works
  - Economics
  - Calculations for sizing & performance

State License Requirements for Outside Sales

- May need to register with State License Board
  - Contractors State License Board (CA): www.cslb.ca.gov/forms/apphis.pdf
  - Residential only
  - Need set of finger prints
  - Cannot be convicted of serious, relevant crime

Minimum For Outside Sales

- Basic understanding of solar system function
- Solar economics
  - Rate structures, TOU, Tiers
  - Rebates, Tax Credits, PBIs
  - Inflation
  - Proving the Payback

Minimum Knowledge For Outside Sales cont’d

Tools:
- Pathfinder
- SunEye/Pathfinder
- Site analysis & data recording sheet
- Satellite photos & maps
- Analysis & Estimation Software Tools
- Kill-a-Watt or Watt’s Up kWh recording tools
- Voltmeter & clamp-on Ammeter
Basic Analysis & Database Tools

- Solar Advisor Model (SAM) from NREL
- Clean Power Estimator - general customer education
  http://www.consumerenergycenter.org/renewable/estimator
- PV Watts - the standard performance model
  http://rredc.nrel.gov/solar/codes_algs/PVWATTS/
- DSIRE - database of state & fed incentives
  www.dsireusa.org
- OnGrid Tool - design & analysis portion

Minimum For Outside Sales cont’d

Electrical:
- Basic PV circuit flow
- Service Entrance panel
  - Willingness to open
  - Ability to find grounding conductor
  - Read ampacity label, calculate if double pole breaker will fit physically & electrically
- Establish conduit run and DC disconnect location per NEC

Mechanical: figure cost adders for difficult mounts
- Do area calculations or array layout

Desirable Knowledge
Outside Sales

- Good understanding of systems, types, technologies, etc
- Taken basic training class for installers
- NABCEP PV Entry Level Exam
- Installations for 2 weeks+
  - Follow-up 1-2 times per year
  - NABCEP installer certification - ideal
    - www.nabcep.org

Desirable Knowledge
Outside Sales - cont’d

- Stays up to date with industry
- Attends industry meetings
  - Solar Forum
  - Conferences
- Manufacturer product trainings
- Reads periodicals, etc

  www.ongrid.net/dreamjobresources.html

Possible Job Progression

- Call reception
  - Inside sales
  - Outside sales
- Salary & responsibility grow with ability and knowledge

Sales Skills

- Everyone can improve selling skills
  - Listening skills
  - Closing & Asking for the sale
  - Getting & approaching referrals
  - Listening skills
  - Presenting
  - NLP
  - Did I mention Listening skills?
    - Active & Reflective Listening
**Sales Training**

- Sales training available from books, magazines, online classes, in person classes, coaches, etc.
  - Invest in training, it's worth it
- Many options
  - Dale Carnegie “How to Win Friends…” & others
  - Brian Tracy
  - Jeffrey Gitomer
  - Earl Nightingale…
- Find what works for you

**The OnGrid Tool**

- Created the proposals shown today
- Sales Tool
  - Quickly Identify & Screen Leads
  - Organizes Client Info
- Design Tool
  - Size Systems Optimally
  - Proves the Payback
  - Creates Quotes & Proposals
  - Prepares Contract Documents & Paperwork

**OnGrid Calculates Cost & Performance**

- Costs, Adders, all Incentives, Net Cost
- System Performance including Shading Data Upload
- TOU kWh Performance
- Electric Bill $ savings
- Performs Financial Analyses:
  - Simple & Lifecycle Payback
  - Rate of Return analysis
  - Cash Flow when financing
  - Increase in Appraisal Valuation
- Provides spreadsheet proof

**OnGrid Calculates & Shows Environmental Benefits**

- CO2, NOx, SOx, Particulates
- Equivalent Miles not driven
- Cars taken off the road
- Trees
- Bags of Coal
- Arctic Ice Area

**OnGrid Tool Proposals & Documents Prepared:**

- 60+ fully customizable pages
  - Levels of detail & language
  - Page ordering, logos, contact info, colors, text, graphics, etc.
  - Free support
- Sales Docs auto-prepared:
  - Contract/Quote
  - CSI Applications
  - 3rd Party Authorization
  - NEM/Interconnection Agreements
  - 16+ letter templates to use at various stages of the sale
  - Data entered once

**The OnGrid Tool:**

- Always Up-to-date Rates, Incentives, etc
- Free Training & Support Web Conferencing
  - Learn Tool, ask Financial Analysis Questions
- Low Cost: $100/mo (includes 2 users)
  - Straight-up pricing - No gimmicks or bundling
  - Free for students, teachers, & non-profits
- No Risk - Money-Back guarantee
Results with OnGrid

- Faster, Easier, More Accurate Selling
- Credible Financial Analysis
  - More Effective Selling
- Faster & Easier Paperwork Completion
  = More Sales Closed, Less Effort

Free Trial Available - License Agreement
Class Special – 15-Day Bonus Use

Scenario Options

- User Customizable to Any Situation:
  - Commercial, Residential, Government & Non-Profit
  - Any size system: 0-1000MW
  - Any Rate Structure
  - Any Incentive: FIT, Rebate, PBI, REC, Tax Credits & Depreciation
  - Any Insolation Location
- Excel-based: Fast, Portable, Private

Use OnGrid Credibility With Your Customers

- 8+ years of study of Solar Financial Analysis & Finance
- NABCEP Certified Solar PV Installer Emeritus
- Peer Reviewed Papers (12) & Published Articles (10+)
- Classes coast to coast (dozens) at PG&E/PEC, CCSE, SLI, SEI, NCSC, NESEA and at major conferences
- Conergy, AEE, & Solar Depot dealer events, etc
- Linked on CSI GoSolarCalifornia official state website
- 500+ subscribing users in Cal. & U.S.
- SEI Graduate, now instructor
- M.S. Electrical Engineering
- Marketing Certificate with emphasis in Finance
- Newspaper, Radio & TV appearances & interviews

Conclusion

- Overview of Marketing
- Selling
- Selling Tools available

Sales Risk to Industry

- Concern:
  - Poor products or bad applications
  - Oversold benefits
  - Quick Buck artists
  - Give solar another black eye, a la 1980s
- Solution: Long Term Thinking
  - Good, high quality systems are available
  - Can be installed correctly and profitable
High Standards & Quality

- NABCEP Technical Sales Certification
  - Good design avoids problems & improves customer satisfaction & experience
- Accuracy in expected results
  - Shading - SunEye or Solar Pathfinder
  - Educate inappropriate customers
- Production - PV Design Pro, PVwatts
- Financial - QuickQuotes or OnGrid

No Need To Oversell

- The case for solar is excellent for many
- Lots of interested customers
- Important to maintain our credibility
  - With Customers
  - With the Media
  - With Regulators & Utilities
  - With Policy Makers (Incentive Providers)

... to keep the good times rolling!

Learn More

Resources available at www.ongrid.net
- Articles & papers on solar “Payback”
- Upcoming classes & events
  - PV Economics for Commercial & Residential (8hr)
  - Financing Solar Intro including PPAs & Leases (8hr)
- Slides from past classes
- Free demos of the OnGrid Tool

Andy Black
The OnGrid Tool
Solar Financial Analysis & Sales Software

(866) 966-5577x1
andy@ongrid.net
www.ongrid.net - Tools, Classes, Articles, & Papers

Interactive OnGrid Tool Examples
(for those who wish to stay)

- Give me the parameters and we’ll look at the results in OnGrid model
  - Usage, system size, price, rebate
  - Tax bracket, inflation
  - Starting & ending rate schedule
  - % on-peak usage
Opening/Introduction Notes

- X% of solar salespeople close only 1 in Y leads
  - Would you like to do better?
- Have Yennie research this (informally w/ customers)
- Prop: 20 lead sheets or 1 signed contract

Disclaimer

I’m not a lawyer:
This is not legal advice
This is for informational purposes only:
Seek qualified legal advice
CA based: Laws vary from state to state
Purpose: Raise Awareness of The Law, Strategies, Rights, Responsibilities, & Resources

W2 vs 1099

Appendix

Sales Staff Structures

- 2 Types of Work Tax Status:
  - Employee (Income reported on W-2)
  - Independent Contractor (Income reported on 1099 – no withholding)
- Issues:
  - Control
  - Labor laws
  - Costs

Audience Survey

- Dealer/Installers (owners)
  - Who has W2 vs. 1099 workers?
- Solar Salespeople
  - Who is W2 vs. 1099?
- Who’s got a written agreement?
  - That includes payment terms?
  - That covers confidential information (leads)?
  - That discusses what happens after termination?
Employee

- More control: hours, activities, & how work done
- Company owns all related work products produced during employment period
  - Leads & Customer contact info
  - These fall under Uniform Trade Secrets Act
- Employees get:
  - More security - wage & hour protection
  - Unemployment insurance protection
  - Rights about harassment and workplace protection

Independent Contractor

- Must have expertise, knowledge, or existing clients
- Contractors set own hours & have other clients
- Fewer restrictions on activities except by contract
  - Too many restrictions => employee status
- Ownership of their work unless give up by contract
  - Ie. Leads and future right to contact customers
  - Contractor shouldn’t use company tools except as unavoidable to do job: (ie. Branded items: PPT files, logos, marketing materials)
- Risk of Reclassification by IRS:
  - May risk losing access to leads

Employee vs. Contractor Costs

- Employee costs to company:
  - 1/2 FICA (Social Security)
  - Job expenses
  - Tools & repairs
  - Benefits if applicable
  - Education & training
  - Office space (for monitoring & control)

- Contractor’s own costs:
  - Tools and damage to tools
  - Some or all job expenses depending on contract
  - Both halves of FICA and other payroll taxes
  - Education & training
  - Insurance, etc

Asset Control

- Employees: all owned by the company unless:
  - Was owned before employment
  - Different agreement by contract
  - Is outside the normal scope of work
- Contractor: sole or shared independent ownership depending on disclosure and contract
- Issues:
  - Contact info for leads, closed sales, etc
  - Salesperson’s phone & cell number, email address
  - What info goes on business cards & proposals

Agreements

- Avoid problems - spell out as much as possible
- Whether employee or contractor
- How contact info will be owned
- Requirements for turning in data
  - Ie. Entering it into a CRM database
- How and when compensation is due
- Compensation after termination
- “Employee Invention Assignment & Confidentiality Agreement”
Agreement

- Covers before, during and after
- Be clear at outset what you want to retain ownership of after termination
- Make it fair and reasonable for both parties
  - Long term happiness and positive partings

Agreements

- Written/reviewed by competent legal professional
- Applies to your state / jurisdiction
- Make sure it’ll hold up
- Non-compete clauses for employees
  - Virtually illegal in CA
  - Must be reasonable in other states (time & distance)
  - Stifles creativity
- Standard “off the shelf” software packages of legal agreements

Agreements From “Off The Shelf”

- Nolo Press - www.nolo.com
  - Search: “Consultant & Independent Contractor Agreements”
- Quickforms - www.quickforms.net
  - Contractor Sales: www.quickforms.net/quickforms/k16.htm
  - Employee Sales: www.quickforms.net/quickforms/k32.htm
  - Inventions Assignment: www.quickforms.net/quickforms/k19.htm

Termination Considerations

- Ownership of assets:
- Who owns the phone number
  - Who gets the calls after termination
- What email address & phone number goes on proposals
- Important to the future of both parties

Termination - Employee

- Employee costs:
  - Must leave behind all leads, tools, writings, etc. that relate to the job unless owned before employment
  - “Anything gotten by virtue of employment belongs to the employer”
- Must return/delete/destroy all of employer’s property

Termination - Employee

- Employee can send notification of change of contact info to all their contacts or a “Professional Services Announcement”
  - Must not solicit in any way
  - May not initiate the next contact
  - Only then, if contacted, may ask customer info and solicit business
  - Otherwise must inform of change, and cannot ask for the info until cust. calls again
Termination - Contractor

- Follows terms of the contract
- Which provisions of the contract survive termination and affect behavior of each party thereafter
  - Confidentiality
  - Property ownership

Solar Brokering

- Reduces Costs
- Increases Customer Satisfaction

The Brokering Concept

- Current Sales Scenario: Multiple salespeople submitting bids
  
  The Broker Model:
  - One Broker-Expert working for the customer
  - Broker interviews, surveys, analyzes & designs
  - Solicits and presents 3-4 competing bids & bid comparison
  - Assists customer’s decision making

Benefits of Using a Broker

- No duplication of efforts - significant savings
  - Increased Selling Efficiency
  - Purchaser Time Savings & Reduced Effort
- Consultative vs. persuasive relationship
  - Purchaser Increased Satisfaction
- Seller Cost Savings
- Installer Increased Satisfaction & Margin Protection

The Broker-Expert

- Experienced PV sales & site analysis expert
  - Makes very few mistakes
- Established positive reputation in community
  - Critical to establishing relationships
  - Provides unbiased analysis & background
Increased Selling Efficiency

- 1 Broker replaces 2 to 5 Salespeople
- 1 site visit & proposal presentation
- Effective screening eliminates “Looky Lous”

Closing Ratio

- 5x Increase in Closing Ratio

![Closing Ratio Chart]

Seller Cost Savings

- Marketing & Indirect Cost savings

![Seller Cost Savings Chart]

Customer Time Savings

- Customer Time & Effort Cut in Half

![Customer Time Savings Chart]

Customer Satisfaction Increase

- One consulting relationship vs. multiple salespeople competing & persuading, attempting to influence decision
  - Get to customer’s real interests
- Customer protection via Broker’s repeat business leverage

Installer Increased Satisfaction & Margin Protection

- Broker protects seller from unreasonable or troublesome customers
- Broker illuminates sellers hidden benefits for particular project needs
- Broker blocks ultra-aggressive competitive bidding tactics by customers
Risks of Brokering

- Increased Risk to Purchaser
- Increased Risk to Installer
- Risk Reduction

Increased Risk to Purchaser

- Solitary site visit, analysis and design
- Broker mistakes may go unnoticed vs. sales
  - Wrong sized system
  - Inaccurate presentation of benefits - wrong buying decision
- Unscrupulous broker colluding with sellers

Increased Risk to Installer

- Missed critical cost elements
  - Required Structural & Electrical upgrades
- Inaccurate site assessment & measurements may lead to bid & sale of un-buildable project

Risk Reduction

- Broker experience, training and certification
- Broker must have 1+ years full time sales experience, competing with others to learn and have mistakes caught
- NABCEP / CoSEIA installer certification ideal
- Customer due diligence picking broker
  - Experience & reference checks
  - Quick phone price & size checks

Brokering Summary

- Time, Effort & Cost reducing
- Satisfaction Increase for All Parties
- Good risk mitigation possible
  - Acceptable gain in risk-reward balance
- Should cut system cost by up to 3.5% or more
  - ~ 6 months equivalent PV experience curve

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Solar Financial Analysis & Sales Software

(866) 966-5577x1
andy@ongrid.net
www.ongrid.net - Tools, Classes, Articles, & Papers
Sell PV Systems More Effectively

Economics is the strongest driver in selling PV systems. Residential & Commercial PV systems can have very good economics.

**Example Residential Results:**

<table>
<thead>
<tr>
<th>Pre-Solar Bill</th>
<th>kWh per Month</th>
<th>System AC Size</th>
<th>System Gross Cost</th>
<th>Final Net Cost w/ Tax Benefits &amp; Rebate</th>
<th>Pre-Tax Annual Return</th>
<th>Appraisal Equity Increase</th>
<th>Lifecycle Payback Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100</td>
<td>665</td>
<td>3.0 kW</td>
<td>$28K</td>
<td>$20K</td>
<td>11.4%</td>
<td>$20K</td>
<td>221%</td>
</tr>
<tr>
<td>$254</td>
<td>1150</td>
<td>6.0 kW</td>
<td>$55K</td>
<td>$39K</td>
<td>15.3%</td>
<td>$57K</td>
<td>314%</td>
</tr>
<tr>
<td>$457</td>
<td>1700</td>
<td>9.0 kW</td>
<td>$81K</td>
<td>$58K</td>
<td>18.1%</td>
<td>$102K</td>
<td>383%</td>
</tr>
</tbody>
</table>

Prove it to your customers with independent 3rd party resources to boost your credibility. The OnGrid Solar website has:

**Upcoming Classes:**  [www.ongrid.net/classes.html](http://www.ongrid.net/classes.html)
Payback, Economics & Financing of Solar Systems: Understand the variables and ways to maximize the economics, then learn 5 ways to prove the financial results for Residential, Commercial & Non-Profit customers. The Commercial class includes Lease & PPA financing.

Sales & Marketing for PV Systems: Learn OnGrid’s secrets to success in building a powerful and effective sales organization & marketing strategies for residential customers.

**Articles & Papers:**  [www.ongrid.net/papers](http://www.ongrid.net/papers)
Use OnGrid published and peer-reviewed articles to enhance your credibility with customers, and help them understand for themselves why solar is attractive (Please use articles unedited and including attribution. Contact OnGrid at 408 428 0808 if you’d like to use excerpts).

**Tools:**  [www.ongrid.net/payback](http://www.ongrid.net/payback)
The *OnGrid Solar Financial Analysis & Sales Tool* is a powerful design, quoting, proposal, and forms tool that will save you tremendous time and improve your closing ratio, *helping you make more sales and money with less time and effort.*

Try a FREE demo and see examples of the output at:  [www.ongrid.net/payback](http://www.ongrid.net/payback)
The OnGrid Solar Financial Analysis & Sales Tool

Simplify Solar Sales: Qualify and Close in Less Than a Day!

(866) 966-5577
www.ongrid.net

Show Your Customers

- Their internal rate of return (solar vs. stock market or interest-based investment)
- Their cash flow for financed systems (positive and increasing over time)
- System’s total lifecycle payback and savings (show how much they save over time)
- Their increased resale value (often is more than system cost & increases over time)

Simplify Your Sales

- Identify and screen hot leads (guides salespeople through the entire sales process)
- Size PV systems accurately (time of use, shading, tilt, orientation, incentives and more)
- Price systems considering all factors (e.g., tile roof, custom mounting, etc.)
- Create proposals, price quotes quickly, onsite (one button form generation, documentation, includes CSI)

Use customer data to paint them a picture. Example Output*:

*See website for detailed description and comprehensive list of customizable outputs and displays.

Example Sales Call

FREE Trial / Examples: www.ongrid.net/payback

© 2010 OnGrid Solar
The OnGrid Solar Financial Analysis & Sales Tool for Commercial & Residential PV Sales

A Time-Saving, Comprehensive Tool for Solar Sales

(866) 966-5577
www.ongrid.net

Helps Create & Close More Sales
Calculates TOU Value with Shading
Proves Payback for the Customer
Prepares Rebate & Utility Docs Easily

The OnGrid Solar Sales Tool Helps Commercial & Residential Salespeople:
(See www.ongrid.net for comprehensive lists of all details and options)

Identify and Screen Hot Leads, guide them successfully thru the entire sales process
Perform Multiple Solar Financial Analyses, option to generate a Variety Of Proposals
Develop Accurate Price Quotes, including all material, regulatory and job-site factors
Fill out Closing Sales Paperwork and Documents (including CSI) with the touch of a button
Size PV systems based on customer needs, incentive programs and site data

Solar Pathfinder® Upload shading device data for accurate Time-of-Use value analysis
SunEye®

Demonstrate the financial benefits of a solar electric system to your customer with customized calculations. Tailor and brand your printouts. Use them for direct presentations as your sales materials.

- PV System Size & Production
- Current & Future Electric Bills
- Cost, Rebate & Tax breakdowns
- Financing & Cash Flow
- Resale Calculations & Graphics
- Rate of Return Calculations

The OnGrid Tool is offered on a subscription basis and is updated frequently with current Rate Schedules, Incentive, Tax and Product information, and periodically with new tool features and benefits. Download the free trial. Then, contact Andy Black at andy@ongrid.net or (866) 966-5577 to start closing more sales.

(866) 966-5577
FREE Trial / Examples: www.ongrid.net/payback

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Resource List - Find Your Dream Job in Solar

Live Links Available at: www.ongrid.net/dreamjobresources.html


Books:
Photovoltaic Systems - NJATC
Solar Living Sourcebook – Schaeffer et al
New Solar Electric Home – Davidson
Solar Electric Independent Home–Fowler
Practical Photovoltaics – Komp
From Space to Earth – Perlin
The Solar Electric House – Strong
Got Sun? Go Solar – Moran
Solar Revolution – Bradford
Careers in Renewable Energy - Gregory McNamee
Photovoltaic Design & Installation for Dummies - Ryan Field
Solar Power Your Home for Dummies - Rik DeGunther
Your Solar Home Guidebook – Rahus Institute: www.rahus.org

Periodicals, Magazines, Journals, Online Sources:
Photon – www.photon-magazine.com
NREL PV news - www.nrel.gov/pv/news_hotline.html
Solar Today – www.solartoday.org
SolarPro Magazine - www.solarprofessional.com
Home Power - www.homepower.com
Renewable World – www.renewableenergyworld.com
REFocus- www.ises.org
Sandia www.sandia.gov/pv/ - publications
ENF PV Industry Info www.enf.cn

Courses & Training Programs:
*Solar Energy International (SEI) – www.solarenergy.org, (970) 963-8855, Multi-week, hands on
*Florida Solar Energy Center (FSEC), www.fsec.ucf.edu/en, (321) 638-1000
*Midwest Renewable Energy Association (MREA), www.the-mrea.org, (715) 592 6595
*Solar Living Institute - www.solarliving.org, (707) 724 2017, Partial- & Full-week, hands on
*State University of New York at Farmingdale, info.lu.farmingdale.edu/depts/met/solar/, (631) 420 2000
*North Carolina Solar Center - www.ncsc.ncsu.edu, (919) 515.5666
*State University of New York at Delhi, www.delhi.edu/academics/academic_divisions/technologies/photovoltaics.php
*SunPirate, Inc., www.sunpirate.com/
*Lane Community College, Eugene, OR, www.lanecc.edu/
*Great Lakes Renewable Energy Assoc., www.glrea.org/
*altE university, www.altestore.com/classes/
*Saint Paul College, www.saintpaul.edu/ContinuingEducation/Pages/SolarTech.aspx

List of training programs (IREC): www.irecusa.org/index.php?id=91

DOE list of courses, jobs, etc.: [www1.eere.energy.gov/education/](http://www1.eere.energy.gov/education/)
Sol “Solar-on-Line” - [www.solenergy.org](http://www.solenergy.org)
San Juan College, Farmington, NM [www.sanjuancollege.edu/pages/4003.asp](http://www.sanjuancollege.edu/pages/4003.asp) (800) 241 6327
Appalachian State University Dept of Technology, Boone, NC, [www.tec.appstate.edu/at/app_tech.html](http://www.tec.appstate.edu/at/app_tech.html) (828) 262-3110
Sonoma State University – [www.sonomastate.edu/ensp](http://www.sonomastate.edu/ensp)
Diablo Valley College, San Ramon, CA, [www.dvc.edu](http://www.dvc.edu), (925) 685-1230x522, Alt. Energy
Mercy Hot Springs, Firebaugh, CA, [www.mercyhotsprings.com](http://www.mercyhotsprings.com), (209) 826 3388
De Anza College Energy Management Technology, [environmentalstudies.deanza.edu/es/](http://environmentalstudies.deanza.edu/es/), Cupertino, CA
OnGrid Solar presentations on Financial Analysis & Payback: [www.ongrid.net/classes.html](http://www.ongrid.net/classes.html)
Solar Decathlon (University teams) [www.solardecathlon.org](http://www.solardecathlon.org/)

*Indicates this school is accredited by the Institute for Sustainable Power, [www.irecusa.org/index.php?id=91](http://www.irecusa.org/index.php?id=91), (303) 683 4748

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**Organizations:**

American Solar Energy Society (ASES) - [www.ases.org](http://www.ases.org)
NorCal Solar Association (NCSEA) - [www.norcalsolar.org](http://www.norcalsolar.org), (530) 852 0354
California Solar Energy Industries Association (CalSEIA) - [www.calseia.org](http://www.calseia.org)
Solar Living Institute, [www.solarliving.org](http://www.solarliving.org), (707) 744 2017
NABCEP-North American Board Certified Energy Practitioners [www.nabcep.org](http://www.nabcep.org) (730) 344 0341
Solar Electric Power Association (SEPA) - [www.solarelectricpower.org](http://www.solarelectricpower.org)
Solar Energy Industries Association (SEIA) - [www.seia.org](http://www.seia.org)
Prometheus Institute for Sustainable Development - [www.prometheus.org](http://www.prometheus.org)
California Solar Center, Solar Forum & PV Alliance - [www.californiasolarcenter.org](http://www.californiasolarcenter.org)
International Solar Energy Society (ISES) - [www.ises.org](http://www.ises.org)

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**Conferences & Events:**

“PV America”, April 3-5, 2011, Philadelphia, PA, [www.pvamericaexpo.com](http://www.pvamericaexpo.com)
“Solar Energy Week”, San Diego, CA, late September, [www.sdreo.org](http://www.sdreo.org)
ASES National Solar Home Tour, nationwide, early October, [www.ases.org](http://www.ases.org), [www.norcalsolar.org](http://www.norcalsolar.org)
Solar Forums, California Solar Center & PV Alliance - [www.californiasolarcenter.org](http://www.californiasolarcenter.org)
Fairs & Events around the US: [www.homepower.com/resources/events](http://www.homepower.com/resources/events)

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**Job Boards & Ideas:**

[www.greenjobs.com](http://www.greenjobs.com)
[www.solarjobs.us](http://www.solarjobs.us)
[www.homepower.com/resources/jobs](http://www.homepower.com/resources/jobs)
www.renewableenergyworld.com/rea/careers
www.sustainablebusiness.com/jobs
www.ecojobs.com
www.sustainlane.com/green-jobs
www.eco.org
www.greenengineeringjobs.com
EnvironmentalCareer.com www.environmentalcareer.com
DOE list of jobs, courses, etc.: www1.eere.energy.gov/education
Contact the membership & installer lists of CalSEIA, SEIA, NABCEP, SEPA, NorCal Solar, ASES & CSI installer
list: www.gosolarcalifornia.ca.gov/professionals/contractors.php
 tinyurl.com/ny5zul (Department of Energy - type in the keyword solar, and hit return)
jobsearch.usajobs.gov/a9doei.aspx
jobsearch.usajobs.gov/
www.solarjobsusa.com/
www.seia.org/cs/about_seia/jobs_in_the_solar_industry
www.jobsinpv.com/
www.photon-magazine.com/job/job.htm
jobs.solarplaza.com/a/ib/find-jobs
www.nrel.gov/employment/job_openings.html
jobsinsolarpower.com

Articles:
Articles on Financial Payback for Solar and PaybackOnSolarSERG (pdf)

Solar Business and Career Courses and Consulting:
Verve Solar Consulting: www.vervesolar.com provides content for solar workforce business courses, seminar instruction, and direct consulting for career seekers and business owners. Verve’s products and services provide a broad understanding of solar photovoltaic technology, economics, policy drivers, regulatory environment, and the latest industry trends.

Volunteer Experience:
Grid Alternatives - www.gridalternatives.org & Habitat for Humanity Solar Projects

Tools:
Solmetric SunEye, www.solmetric.com, (877) 263 5026
OnGrid Tool (for Solar Financial Analysis), (408) 428 0808x1, andy@ongrid.net
**Acronyms Used In Sales, Marketing & Economics Classes**

AC: Alternating Current (standard AC wall power)
ACP: Alternative Compliance Payment
ACEEE: American Council for an Energy Efficient Economy
AMT: Alternative Minimum Tax
APY: Annual Percentage Yield
ARRA: American Recovery and Reinvestment Act
ASES: American Solar Energy Society
CA: California
CAD: Computer Aided Design
CalSEIA: California Solar Energy Industries Assn
CAGR: Compound Annual Growth Rate
CCE: California Center for Sustainable Energy
CEC AC: California Energy Commission AC rating
CEC: California Energy Commission
CEO: Chief Executive Officer
CFO: Chief Financial Officer
CHEERS: California Home Energy Efficiency Rating System
CL&P: Connecticut Light & Power
COO: Chief Operating Officer
CO2: Carbon Dioxide
CoSEIA: Colorado Solar Energy Industries Assn
CPI-U: Consumer Price Index-Urban
CPUC: California Public Utilities Commission
CRES: Colorado Renewable Energy Society
CRM: Customer Relationship Management
CSI: California Solar Initiative
DC: Direct Current (what comes out of PV modules)
DER: Distributed Energy Resource/Renewable
DGR: Distributed Generation Resource
DOE: Department of Energy (U.S.)
DSIRE: Database for State Incentives for Renewable Energy: www.dsireusa.org
DWR: Department of Water Resources
EPBB: Expected Performance Based Buydown
EEM: Energy Efficient Mortgage
EIA: Energy Information Administration (of DOE)
EPBI: Expected Performance Based Incentive
FASB: Financial Accounting Standards Board
FHFA: Federal Housing Financing Agency
FICA: Social Security Payroll Tax
FMV: Fair Market Value
FIT: Feed-In Tariff
HELOC: Home Equity Line of Credit
HERS: Home Energy Rating System
IDR: Interval Data Recording (meter)
IID: Imperial Irrigation District
IRC: Internal Revenue Code
IRR: Internal Rate of Return
IRS: Internal Revenue Service
ISO: Independent System Operator
ITC: Investment Tax Credit
JCP&L: Jersey Central Power & Light
kWh: kilowatt-hour
LADWP: Los Angeles Department of Water & Power
LBL: Lawrence Berkeley Laboratory
LTV: Loan-To-Value
MACRS: Modified Accelerated Cost Recovery System
NABCEP: North American Board of Certified Energy Practitioners
NCSC: North Carolina Solar Center
NESEA: North-East Sustainable Energy Association
NJCEP: New Jersey Clean Energy Partnership
NLP: Neuro-Linguistic Programming
NOL: Net Operating Loss
NOx: Nitrous Oxides
NPV: Net Present Value
NREL: National Renewable Energy Laboratory
NSHP: New Solar Homes Partnership
PACE: Property Assessed Clean Energy
PBI: Performance Based Incentive
PEC: PG&E’s Pacific Energy Center
PG&E: Pacific Gas & Electric
PPA: Power Purchase Agreement
PSE&G: Public Service Electric & Gas (NJ)
PTC: PVUSA Test Conditions
PUC: See CPUC
PURPA: Public Utility Regulatory Policies Act of 1978
PV: Photovoltaics (Solar Electricity)
PVUSA: PV for Utility Scale Applications
QF: Qualifying Facility
REC: Renewable Energy Certificate/Credit
ROI: Return On Investment
ROR: Rate of Return
RPS: Renewable Portfolio Standard
SB1: CA Senate Bill 1, the law that created the CSI
SCE: Southern California Edison
SDG&E: San Diego Gas & Electric
SDREO: San Diego Regional Energy Office (aka CCSE)
SEI: Solar Energy International
SEIA: Solar Energy Industries Association
SEO: Search Engine Optimization
SLI: Solar Living Institute
SMUD: Sacramento Municipal Utility District
SOx: Sulfur Oxides
S-REC, sREC: Solar Renewable Energy Certificate
STC DC: Standard Test Conditions DC rating
STC: Standard Test Conditions
SVP: Silicon Valley Power
SWOT: Strengths, Weaknesses, Opportunities, Threats
TOD: Time Of Day
TOU: Time Of Use
TRC: Tradable Renewable Certificate (aka REC, Green Tag)
UI: United Illuminating Co. (CT)
URG: Utility Retained Generation
WACC: Weighted Average Cost of Capital
WIIFM: What’s In It For Me