Find Your Solar Dream Job!

Andy Black & Panel

Introductions & Thanks

Solar Power International
California Center for Sustainable Energy
Solar Electric Power Association
Solar Energy Industries Association

You for coming!

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Agenda

- Overview of Job Opportunities in Solar
  - Strategies for Getting In
  - Common Job Types
- Panel
  - Representatives of Several Job Types & Market Spaces
- Q&A at End
- Handouts in the back

Career Center on conference website sponsored by:

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 Audience Survey

Who’s Here? What’s your background?
- Students?
- Career changers?
- Engineers?
- Salespeople?
- Marketers?
- Finance?

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Audience Survey

Goals?
- Become an employee?
- Start a manufacturing business?
- Start a dealership/installation firm?
- Start consulting?

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Resources Handout

List of Resources, available online at:
www.ongrid.net/dreamjobresources.html
- Periodicals & OnLine resources
- Books
- Courses
- Events
- Organizations
- Job Boards
- Solar Today article

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Strategies for Getting In

- Networking
- Skill Building
- Get both by:
  - Education
  - Volunteering

Networking Opportunities

- Membership
- Volunteering
- Events
- Classes

Many overlap with Skill Building

Join Organizations

- American Solar Energy Society (ASES) & your local chapter ($25-$50/yr)
- SEIA national & and your state/regional chapter ($300+/yr)
- All are good ways to get connected and involved

Get Involved

- Attending Board and other meetings
  - local networking
- Participate on committees
- Go to solar parties & meetings

See Resources List for Contact Info

Volunteer Opportunities

- ASES Chapter events
  - Tabling to answer questions from public
  - Solar Tours & other events
- Conferences need helpers
- Great ways to meet people & get known
- Great way to learn more about the industry

Volunteering

- Organize Solar Home Tours
- Meet folks
  - Owners & Installers
  - Designers & Architects
  - Media
Organize Events

It Isn't All Work!

Short Courses at Conferences
- NEC - National Electric Code
- Manufacturer Training Courses
- Trajectory & State of the PV Industry: Maycock & Bradford, the Prometheus Institute
- Sales & Marketing Bootcamp: A&R Edelman
- Commercial Finance: Ed Feo, Milbank
- Many others

Attend Conferences
- Summer Solar Fairs - Home Power magazine website maintains lists of events
- Solar Forums in California
- Solar 2009, Buffalo, May 2009
- PV America, Philadelphia, June 2009
- Various websites list more events

See Resources for Contact Info

Classes
- Solar Energy Int’l (SEI)

Other Course Opportunities
- California Center for Sustainable Energy
- SLI - Solar Living Institute - Hands On
  - SLI Green Career Conference, Berkeley 11/22/08
- Pacific Energy Center (at PG&E) in CA
- MREA - Midwest Renewable Energy Association - Hands On
- NCSC - North Carolina Solar Center
- FSEC - Florida Solar Energy Center

See Resources for Contact Info
Learn the Tools

- Analysis & Database Tools
- Marketing & Sales Tools

Analysis & Database Tools

- Clean Power Estimator - general customer educ.
  [www.consumerenergycenter.org/renewable/estimator](http://www.consumerenergycenter.org/renewable/estimator)
- RETscreen - a standard model
  [www.retscreen.net](http://www.retscreen.net)
- PV Watts - the standard performance model
  [nrel.nrel.gov/solar/codes_alps/PWATTS](http://nrel.nrel.gov/solar/codes_alps/PWATTS)
- PV Design Pro - hard core analysis
  [www.mausolarsoftware.com](http://www.mausolarsoftware.com)
- DSIRE - database of state & fed incentives
  [www.dsireusa.org](http://www.dsireusa.org)
- OnGrid Solar Financial Analysis & Sales Tool
  [www.ongrid.net/payback](http://www.ongrid.net/payback)

Shading Analysis

- Solmetric SunEye & Solar Pathfinder
  - Very accurate for true shading issues
  - Both are Amazing and Fun to Use

Marketing & Sales Tools

- QuickQuotes by Clean Power Research
  - Quoting & Proposal Tool
- OnGrid Solar Financial Analysis & Sales Tool
  - Analysis, Quoting & Proposal Tool
- CPF Tools
  - Quoting & Proposal Tool

Hands On Experience

- Built a system
  - Won’t be perfect
  - Good learning

Upgrade It!
Other Hands-On Experience Opportunities

- Hands-on classes
- GRID Alternatives, SF & LA
  - Non-profit solar for low income housing
- Habitat for Humanity
  - Has solar on many of its projects
- Build your own, even a solar fountain!
  - See Resources for Contact Info

Read Everything!

- Lots of books: Davidson, Perlin, Komp, Strong
- Home Power / SolarPro
- Photon International
- Renewable Energy World
- reFOCUS
- Solar Today - subscription
  - Working in RE series
    - by Mick Sagraillo

Read Everything Online

- RenewableEnergyAccess.com
- SolarBuzz.com
- NREL Hotline newsletter
  - See Resources for Contact Info

Get Certified

- NABCEP - [www.nabcep.org](http://www.nabcep.org)
  - North American Board of Certified Energy Practitioners
  - Installer certifications
- Introductory & Advanced levels
- Knowledge & Experience based

Read everything

- NEC (National Electric Code) Article 690
- Manufacturers Literature
- CEC (California Energy Commission), Sandia & NREL (National Renewable Energy Laboratory) publications
  - Numerous manuals on how to do solar right

Visit Everyone!

- Manufacturers while on vacation!
**Informational Interviews**

- Get the real scoop

**Create Opportunities**

- NorCal Solar Energy Resource Guide Ad Sales
- Propose events or products of value and execute on them
  - Research and write articles
  - Collaborate between organizations

**Advanced Networking Opportunities**

- Run for the Board of Directors
  - All groups need committed, energetic leaders
- Present at conferences
- Teach classes
  - Find a niche you like & develop it

**Anyone Can Do This!**

- Have fun with this
- Takes Time and Effort
  - Persistence & Tenacity pay off
  - Get yourself visible enough and they’ll call you
- Solar Folks are very friendly

**Other Factors Key to Success:**

- Showing Long-term interest
- Figuring out whether you “Know” you want it
- Trial & error, Exploration
- Confidence will grow over time

**Jobs, Pay & Opportunity**
Jobs Available

- Opportunity in the Solar Industry
- Pay scales
- Types of jobs
- Entrepreneurship

Solar: A Growing Industry

- Industry Growth is 35-45%
  - Historical averages over 5 years
  - At all levels: mfr, installation, marketing
- PV costs usually fall 7% per year
- More Incentives worldwide
- Electric Rates generally rise over time
- Economics generally getting better all the time

Incentives: More All The Time

- New Federal Tax Credit - 30% Residential
  - No Cap (just recently made unlimited)
- CA, NJ, CO, HI, CT are booming
- AZ, NV, NY, PA, MD will soon follow
- Many European & some Asian countries are adding incentives

Optimism & Balance

- Growth opportunity is huge & sustainable
- Pay in the solar industry generally lower
- Presenting a balanced view
  - Want you to understand what’s involved
  - I’m excited, you should be too

Pay Scales

- Pay in the solar industry is low 😞
  - Lots of competition
  - Low margins & profits
- Rewarding work 😊
- 1/3 to 2/3 the pay of comparable jobs
- Most people don’t do it for the money

Career choices in Solar

- Design/Engineering
- Installation
- Management
- Sales
- Utility
- Entrepreneur
- Marketing
- Education
- Lobbyist
- Support functions
- Regulatory
Design/Engineering

- Consulting – on your own
- Field and in house design and engineering
- Manufacturing (PV, Inverters, Mounting)
- Problem solving & troubleshooting
- Requires Electrical & Mechanical skills
  ○ Engineering Degree

Installation

- Field and factory installers
- Lots needed – biggest work group
- Skilled and experienced preferred
- Hands-on school (SEI & SLI) graduates are best
- Pay $12/hr to start, $20-35/hr with experience or as foreman

Sales

- Solar Experience or Tech understanding
- Sales talent and cursory understanding
- Compensation: $35K-$120K
  ○ Could be more if really good and knowledgeable
  ○ Big ups & downs

Sales Jobs

- Employee vs. Contractor
  ○ Labor Laws
  ○ Freedom, Independence vs. Control
  ○ Ownership & Portability of Assets
  ○ Expenses

Marketing

- Understanding Marketing
  ○ Is Marketing a Central Function?
- Solar’s weakest link
- Many companies have small or no budget
- Limited jobs
  ○ Larger or well financed
  ○ Growing companies
  ○ More as industry matures
Management

- Supervising any of these
- Requires skill and experience

Education

- Education
  - Users (sales)
  - Installers
  - Financial (sales)
  - Government - Lobbying

Support functions

Support Roles:
- Finance
- IT (Information Technology)
- Logistics
- Administrative assistants
A “foot in the door”

Biggest Areas of Need

- Marketing
  - Sometimes not valued
  - Little budget
- Finance & Financial Analysis
  - Developing new models:
    - “Traditional” PPAs, Leases,
    - New Residential PPAs & Leases
  - Developing & Educating on Finance Structures

Job Boards

- www.greenjobs.com
- www.homepower.com/resources/jobs.cfm
- www.SBLNetwork.com/SBL/jobboard
- www.sustainablebusiness.com/jobs

Other Job Ideas

- Contact the membership & installer lists of ASES & SEIA & their chapters, NABCEP
- CSI installer list:
  www.gosolarcalifornia.org

See Resource List for contact info & acronyms
Cold Calling for Jobs

- Be Prepared
  - For resistance
  - To prove you are serious
  - To demonstrate to them over time you want to be in solar
- Show up at various events to meet the bosses

Jobs Summary

- Lots of job types
- Pick what suits you & you’ll enjoy
- Find related skills or interests to get in the door
- Then enjoy!
- or
- … Start your own business!

Entrepreneurship

- Lots of new startups
  - ~1000+ over last 5 years
- Lots of dropouts too
  - ~500 seem inactive
- This is better than normal for small businesses

Difficult Business

Working in solar is challenging

- Lots of competition
- Margins are slim
- Lots of hidden costs

Plan For Hidden Costs

- Sales Costs - commissions, sales expenses (mileage, phone, etc, & lots of site visits per sale) + marketing costs
- Insurance
- Workers Comp in high categories
- Post-order module price increases

Avoid Pitfalls

- Warranty service costs
- Harder than it looks to do a water tight, high quality installation
  - Takes more time & labor
- Good, trained, and/or experienced employees hard to find
- Leveraging Down - Losses * Watts = 😞
Be Cautious

- Don’t do it if you really want to make a lot of money
- Think of the consequences to starting & quitting
  - Customer warranties
  - Industry image to customers

Rewarding Work

- Different than other “contractor” businesses, but not completely different
- Don’t be scared off if you really want to do it
- Great bunch of employees, peers, competitors, employees & customers to work with

Obviously Think Hard

- Big Decision
- Investigate before you leap
- Be confident you (and everyone else around you) will be happy here. It’s not for everyone
- But it’s great for those for whom it fits

Dream Job In Solar

Neil Collins
Solar Power International
San Diego, CA

Panel

- Cecilia Aguillon - Kyocera
  - Manufacturer; Bus. Development & Gov’t Relations
- Neil Collins - Akeena
  - Installer/Integrator; Operations
- Jyl Safier - Conergy
  - Distributor; Marketing
- Denise Thompson - SPG Solar
  - Installer/Integrator; Human Resources

Jobs in the PV Industry

Cecilia Aguillon
Dir. Government Affairs
Kyocera Solar, Inc.
October 15, 2008
My Approach

- Plan To Succeed
- Execute On Commitment
- Positioning for Your Dream Job

Planning To Succeed

- Preparation
  - Network
  - Research Options
    - Trigger Tracker (www.sgip-ca.com)
    - Google the Company
  - Identify Opportunities

Execution on Commitment

- Series of interviews
- Don’t be afraid to fly
- Set your terms
- Follow up

Positioning for a Dream Job

- Setting your ground rules
- Acknowledging expectations
- Understanding the implications of growth
- Sustaining your solar spirit

WHAT IS YOUR DREAM JOB?
An environmental and professional assessment for success

- Assessing the industry and market
- Assessing your personality, skills & goals
- Job Hunting: 4 ways to think outside the “Box”
- Job Interviews: 5 Tips to land your dream job
Assessment for Success

The Job Hunt: 4 ways to think outside the box

- Look for the backdoor:
  - Lead your company into RE
  - Think about SSE roles that service RE (Finance, Media, Legal, etc)
- Gain Direct Experience:
  - Volunteer at non-profit. Sit on a board.
  - Seek an Internship. Take a course
- Position yourself as a thought leader:
  - Share your expertise. Write an article, start a blog, be an RE-speakert
- Network, Network, Network:
  - Be a connector, not an opportunist – WIFM networking is a two-way street
  - Be sensitive to the people staffing these exhibits.

5 Interview tips for landing YOUR perfect job in solar

- Be proactive about acquiring skills/experience that prepare you for your career goal
- Be knowledgeable about the industry/technology/market
- Be knowledgeable about the company, strategy & key competitors
- Have several good questions prepared for the interview
- Demonstrate how your career path fits well within this particular position/company

Job Functions

- Marketing
- Construction Management
- Project Management
- Accounting
- Human Resources
- Customer Service
- Warehousing
- Facilities
- Purchasing
- Design & Engineering
- Installation
- Business Development
- Sales

Denise Thompson
Vice President, Chief Operating Officer

Elements of a dream job

- Feel like I make a difference
- Ability to contribute to the company’s success
- Use the skill sets that I have learned
- Be appreciated for my efforts
- Opportunity to continue to grow and learn
**Q&A For The Panel**

- Cecilia Aguillon - Kyocera
  - Manufacturer; Bus. Development & Gov't Relations
- Neil Collins - Akeena
  - Installer/Integrator; Operations
- Jyl Safier - Cenergy
  - Distributor; Marketing
- Denise Thompson - SPG Solar
  - Installer/Integrator; Human Resources
- Andy Black - OnGrid Solar
  - Financial Analysis & Sales Tools

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**Conclusion**

- Goal was to enable you to find pathways to build a solar career by Learning & Networking!

- Final Thought:
  
  **“Get Action”**  
  - Teddy Roosevelt

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**Thanks!**

Solar Power International
unar Center for Sustainable Energy
Solar Electric Power Association
Solar Energy Industries Association

You for coming & showing interest!

GET ACTION!

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**Andy Black**

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