

Webinar starts at 9AM Pacific (12 Noon Eastern)

# Solar Selling

Presented by:

Jeff Spies

President SOLARSPIES

NABCEP Secretary

- **Audio options**

- Telephone - Refer to email for phone number
- Computer speakers or headset
- Move closer to wireless router or use a wired internet connection

- **Q & A**

- Audio - Click the "Raise your hand" button, host will un-mute your phone when ready
- Chat - Type your question into chat window and host will read question to presenter
- Questions will be addressed based upon time availability

- **Download entire presentation complete with presenter notes at [www.groSolar.com/training](http://www.groSolar.com/training)**

# Jeff Spies Biography



- President of **SOLARSPIES**
- Secretary for North American Board of **NABCEP** Certified Energy Practitioners
- Training for  **SOLAR ENERGY INTERNATIONAL**  

- BSME Michigan State
- Extensive technical product training experience
- 20 yrs industrial automation sales, marketing, & engineering
- AEE Solar Director of Training 2007 - 2010
- Featured speaker at major industry events - SPI, Intersolar, ASES, IREC, MREF, etc...

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## •Pre-Solar Experience

- Degree in Mechanical Engineering from Michigan State University
- 20 years experience in sales & marketing of electrical and mechanical motion control systems for industrial automation applications
- Extensive technical product training experience throughout North America and overseas

## •AEE Solar Director of Training 2007 - 2010

- Organized the 1<sup>st</sup>, 2<sup>nd</sup>, & 3<sup>rd</sup> annual AEE Solar Dealer Conferences - Largest supplier based solar training events in North America
- Solar training webpage ranked #1 "Solar Training" link on Google for 2 years
- Featured speaker at major industry tradeshows and conferences
  - SPI, Intersolar, ASES, Northwest Solar Expo, NECA, IREC, MREF

## •NABCEP Secretary - North American Board of Certified Energy Practitioners

- NABCEP is the Solar Industry Certification Agency

## •President of SolarSpies

- Training program development for groSolar and Solar Energy International

# groSolar Training Program

*Go beyond the 101*

Featuring SOLARSPIES Training

## gro-Workshops

- 1 & 2 day training events each month in a location near you

## gro-Webinars

- gro your solar business
- PV Modules
- **Solar Selling**
- Marketing & PR
- Stepping up to Commercial PV
- Inspectors – Avoid red tagging
- Solar Policy – Licensing, Certification, Incentives, & Advocacy

## SEI PV Design & Installation Training

- PV101 Beginner Photovoltaics
- PV202 Advanced Grid Tie
- Lab week - hands on installation training

## SEI Technical PV Sales Training

- **PV206 - Technical PV sales and business training**
- Register at [www.solarenergy.org](http://www.solarenergy.org)

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# Presentation Outline



- Important Concepts
- Challenges
- Required Knowledge
- Required Skills
- Required Tools
- The Sales Process
  - Prospecting/Marketing
  - Qualifying
  - Site Analysis
  - Conceptual Design
  - Financial Analysis
  - Financing
  - Non-financial Benefits
  - Performance Analysis
  - Prepare Proposals
  - Present Proposal
  - Closing the Sale

# Important Concepts

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- Nothing happens in business until a sale is made
- Selling is a transfer of enthusiasm
- People want to do business with a friend
- Satisfied customers are your best salespeople



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# Challenges To Selling PV

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- Tire kickers waste selling time
- Staying abreast of constantly changing financing & incentives
- Solar PV systems must be “sold”
  - Most contractors “bid jobs”
- Contractors need solar sales competency
  - Hire or partner with solar sales professionals
  - Work with a solar broker



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Tire kickers waste your time - Qualifying customers is key

## Required Knowledge

Solar selling requires knowledge of:

- Utility interconnection
- Net metering
- Bill interpretation
- Types of utilities (public/private/co-op)
- Electrical PV concepts, safety, best practices
- Basic construction concepts, terminology, methodology, safety, & best practices
- Structural and Electrical Code (IBC, NEC, state, local, etc...)





# Required Skills

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- Listening
- Verbal/written communication
- Reading comprehension
- Basic math and trigonometry
- Computer skills
- Read & interpret drawings
- Map interpretation
- Use of solar site assessment & measurement tools
- Power production estimating
  - Manual and computer



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Listening

Verbal and written communication

Reading comprehension

Basic math and trigonometry

Computer skills: MS Word, Excel, E-mail, Internet

Read & interpret drawings: electrical/structural

Map interpretation: Google Earth, MapQuest, topographic maps, solar insolation maps, aerial photographs, etc...

Use of solar site assessment & measurement tools

Power production estimating (manual/computer)

## Required Tools

- Checklist
- Digital camera
- Computer with internet access
- Appropriate clothing
- Roof friendly footwear
- Gloves
- Safety glasses
- First aid kit, emergency numbers, hospital location
- Ladder(s)
- Fall protection - where appropriate
- Shade assessment tool
- Tape measure
- Inclinator
- Laser level
- Multi-meter
- Flashlight



# The Sales Process

- Prospecting
- Qualifying the Customer
- Site Analysis
- Conceptual Design
- Financial Costs, Incentives, and Savings
- Financial Benefit Analysis and Financing



- Non-financial Benefit Analysis
- Performance Analysis
- Prepare Proposals
- Present Proposal
- Close the Sale

# Prospecting/Marketing

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- Website
- Social media
  - Facebook, LinkedIn, Twitter, Blogs
- Radio and TV
- Tradeshows and Homeshows
- Print Advertising - newspapers, yellow pages
- Fliers, door hangers, brochures, mailers
- Prequalification checklist
  - **shown in presenter notes**




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## Pre-qualification checklist:

### Customer information

- Customer name, phone number, Email address, Mailing address
- Preferred method and time of contact

### Site information

- Who owns the property?
- Address of installation - perform remote site assessment with Google Earth
- Does the roof face east, west, or south? - Remote site assessment can help establish
- Is the roof unobstructed and non-shaded? - Remote site assessment can help establish
- How much electricity did you use in the past 12 months - available online or on each month bill
- Determine monthly and daily usage patterns (very important in Time of Use areas)
- Is the property free from deed restrictions on solar energy systems?
- Is the roof in good condition?
- Who is the utility company

### Qualification information

- Why are you interested in a solar PV system?
- Have you performed a home energy audit? - \$1 spent in energy efficiency can save \$3-5 on a PV system
- Is the payback period acceptable? - Typical payback can range from 7 to 30 years
- Can customer take advantage of tax credits, rebates, or other incentives? - Does customer have taxable income?

# Qualifying The Customer

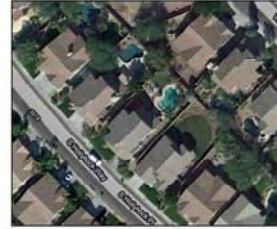


- Beware tire kickers
- Determine
  - Customer “need”
  - Customer “want”
  - Validate site potential
- Hot-Buttons
  - Financial
  - Environmental
  - Energy independence
  - Status symbol
- Target customers
  - 50-65 year old
  - Long term home owners 10-15 yrs+
  - High income
    - Doctors
    - Lawyers
    - Corporate managers
  - Commercial clients w/ green marketing motivations

# Remote Site Evaluation

- Remote site evaluation prior to a site visit
  - Not a substitute for site visit
  - Avoid wasted trips to poor sites
- Identify possible location(s) for a PV array
- Determine approximate available space
- Identify significant shading problems or structural challenges

Google earth



## Qualify Finances And Budget

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- How much electricity used in past year
  - View online or from monthly bill
  - Assess daily/monthly usage patterns
- Address questions about owning, operating, & maintaining system
- Assess the prospects' anticipated budgetary expectations
- Determine financial capacity to purchase or lease a PV system

kWh?



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daily and monthly usage patterns important for Time of Use net metering

Does homeowner work from home or is the house empty during the day

# Group Prospects

- Good site
  - Proceed to Electrical Usage Analysis
- Questionable site
  - Site visit needed to assess PV viability
  - Try to minimize visits to questionable sites outside core market boundaries
- Poor site
  - Shade, roofing problems, zoning etc...
  - Customers should be informed about the limitations of installing a PV system in unsatisfactory locations





## Ballpark Quote & Site Visit



- Prepare and communicate a ballpark estimate
- Evaluate and communicate jurisdictional issues
- Communicate clearly and ethically to effectively manage customer expectations
- If the customer passes qualification process, schedule the site visit
  - Free or paid?
  - Energy audit?



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# Site Analysis



- Safety first
  - Roofing/electrical safety
- Identify component locations
- Electrical service inspection
- Evaluate structural integrity of mounting locations
  - Roofing integrity
  - Soil conditions (ground/pole mounts)
- Quantification of the solar resource
  - Shading, orientation, and tilt angle



additional information in presenter notes

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- Appropriate clothing
- Sun hat or hard hat depending on circumstances
- Roof friendly footwear
- Gloves
- Safety glasses
- First aid kit, emergency numbers, hospital location
- Ladder(s)
  - Not all ladders are created equal
  - Take ladder and roofing safety classes
  - OSHA approved safety classes can be found thru workman's comp insurance carrier
- Fall protection - where appropriate
- Buddy system advised for some roof work and attic work (especially in hot months)**

- Establish criteria needed for production estimate used in proposal
  - Outlines array location and orientation options
  - Outline racking/mounting options
- Address monitoring solutions
- Determine aesthetic, budgetary, and performance goals
  - electrical & financial
- Specify component options
  - avoid promising module brand



# Costs, Incentives, Savings



- Gross top line cost
- Incentive review - Federal, state, utility
- Net metering, PBIs, FITs, and RECs
- Electrical rate structure
- Electricity rate increase projections
- Tax review
- Financing and savings projections



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## Gross top line cost

parts, labor, warrantee, utility/municipality fees, and profit

## Incentive review

Federal, state, local, utility, etc...

## Tax review

Encourage customer to vet your numbers with their tax accountant

## Net metering, PBIs, FITs, and RECs

## Electrical rate structure

Usage patterns

Time of Use

Tiered rates

## Electricity rate increase projections

Predicting the rate of electrical price escalation is challenging. Carbon legislation may cause electricity prices to increase faster than historical rates; however, the increase in shale-bed methane production is expected to put downward pressure on natural gas prices, which could reduce electricity production costs.

# Financing

- #1 decision factor for solar purchase
- Traditional economic analysis metrics
  - Cash Flow, ROI, IRR, and Payback
- Financing options
  - Cash Purchase
  - Lease
  - RE financing
  - 1<sup>st</sup> and 2<sup>nd</sup> mortgage
  - PPA
  - PACE



additional information in presenter notes

## PPA “Power Purchase Agreement”

- Low up front cost - \$1000 or more
- 15 to 18 years lease agreement - Can be transferred to a new owner
- Lease hold pays flat electrical rate
  - Some PPAs incorporate rate increases over the term of the agreement
- The PPA company addresses any required maintenance and repairs
- The PPA company monitors your system
- PPA holder receives no tax benefits, rebates, or REC's
- Most PPA's offer buyout option later or at the end of the agreement for a set price per watt
- Excellent credit rating needed to qualify

## Leasing

- No down payment (in most cases)
- 15 years or longer leasing terms - Transferable to a new owner or home
- You pay a monthly lease payment plus any extra power you need buy from your electric company
- Lease payment often have increases of 3 to 4% a year
  - Typically less than the 5% rate increases by your electric company
- Leasing company may take care of maintenance and repairs and monitor your system, but that's not always the case
- Lease holder receives no tax benefits, rebates, or REC's
- Buyout option later or at the end of the agreement for a set price per watt
- Excellent credit rating needed to qualify

## Home Equity or RE Financing

- Financing via home equity loan or RE Financing (energy efficient mortgage) is often 30-50% less expensive over system life.

## PACE Property Assessed Clean Energy (Property tax assessment financing)

- Loan from local city government for solar systems paid back through property tax bills over 15 to 20 year
- Participating PACE Cities found here:
  - <http://pacefinancing.org/state-financing/> and <http://www.dsireusa.org/>
- Growing number of cities were providing PACE programs, but in July 2010 the Federal Housing Finance Agency declared residential PACE financing programs do not meet requirements of Fanny May and Freddie Mac limiting PACE activity for the immediate future. This ruling could be overturned – stay tuned!

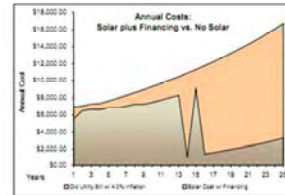
# Financial Benefit Analysis

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- Proposal generation software simplifies this complicated process

- Ongrid
  - [www.ongrid.net](http://www.ongrid.net)
- Clean Power Finance
  - [www.cleanpowerfinance.com](http://www.cleanpowerfinance.com)



- Installers with limited market area can use MS Excel to calculate the financial benefits

- Requires financial, incentive, & computer savvy
- Must keep abreast of incentive & utility rate changes



additional information in presenter notes

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**DSIRE:** Database of State Incentives for Renewables & Efficiency <http://www.dsireusa.org>

**Clean Power Finance** <http://www.cleanpowerfinance.com/>

**Solar Electric Power Association:** Webinars  
<http://www.solarelectricpower.org/events/webinars.aspx>

**SANDIA Labs** <http://www.sandia.gov/>

**OnGrid Sales Slides:** OnGrid Publications, Papers & Presentations  
<http://www.ongrid.net/papers/index.html>

**Home Power #129-58:** PV Financing Mo Rousso

**SEIA Guide To Federal Tax Incentives for Solar:** SEIA members can download a copy of the full manual by logging into the members-only section of SEIA's web-site  
<http://www.seia.org/>

**Lawrence Berkeley Labs:** Case studies of state support for renewable energy  
<http://eetd.lbl.gov/EA/EMP/cases/property-tax-finance.pdf>

**Investopedia:** General information on investing <http://www.investopedia.com/>

**Wikipedia** [http://en.wikipedia.org/wiki/Cash\\_flow\\_statement](http://en.wikipedia.org/wiki/Cash_flow_statement)

**Tom Hoff: Clean Power Research**

<http://www.cleanpower.com/Content/Documents/research/customerPV/CleanPowerEstimatorUses.pdf>

**Solar Photovoltaic Financing:** Deployment by federal government agencies NREL Report No. TP-6A2-46397 <http://www.nrel.gov/analysis/pdfs/46397.pdf>

**Appraisal Journal:** More evidence of rational market values for home energy efficiency  
[http://www.icfi.com/markets/community\\_development/doc\\_files/apj1099.pdf](http://www.icfi.com/markets/community_development/doc_files/apj1099.pdf)

**Solar Advisor Model (SAM):** from the National Renewable Energy Laboratory (NREL)  
<https://www.nrel.gov/analysis/sam/>

**PVWatts:** NREL online tool for production estimates <http://www.nrel.gov/rredc/pvwatts/>

**Green Tech Media** <http://www.greentechmedia.com/>

**U.S Department of Energy:** Solar energy technologies program  
<http://www.energy.gov/energysources/solar.htm>

# Non-Financial Benefit Analysis

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- Environmental
  - Zero carbon, zero emissions
- Economic
  - Solar installation jobs are local
- Energy Independence
  - Reduced foreign energy dependence
- Distributed Energy
  - Grid stability
  - Power when needed most
  - Less transmission losses

additional information in presenter notes



3 kW array powers an electric car for decades

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**NPR:** Animated climate video - Understanding carbons' effect on climate change:

<http://www.npr.org/news/specials/climate/video/>

**EPA:** Household emissions calculator [http://www.epa.gov/climatechange/emissions/ind\\_calculator.html](http://www.epa.gov/climatechange/emissions/ind_calculator.html)

**Findsolar.com:** Calculator <http://www.findsolar.com/index.php?page=rightforme>

**Carbonfootprint.com:** Calculator <http://www.carbonfootprint.com/calculator.aspx>

**Ongrid.net:** Sales and marketing presentation [http://www.ongrid.net/papers/SalesMktg\\_SEI\\_NJ\\_2009.04.pdf](http://www.ongrid.net/papers/SalesMktg_SEI_NJ_2009.04.pdf)

**REW:** Coal vs. solar article <http://www.renewableenergyworld.com/rea/blog/post/2010/05/time-to-step-up-the-comparisons-solar-and-wind-vs-coal-and-oil>

**EPA:** Carbon sequestration in agriculture and forestry <http://www.epa.gov/sequestration/faq.html>

**EPA:** CO2 vehicle emissions <http://www.epa.gov/oms/climate/regulations/420f10014.pdf> or <http://www.epa.gov/oms/climate/regulations/420f10014.htm>

**USGS:** Report on power plant water use <http://ga.water.usgs.gov/edu/wupt.html>

**American Energy Independence** <http://www.americanenergyindependence.com/>

**House Select Committee on Energy Independence**

<http://globalwarming.house.gov/issues/energyindependence>

**US Energy Information Administration:** Energy dependence analysis

[http://tonto.eia.doe.gov/energy\\_in\\_brief/foreign\\_oil\\_dependence.cfm](http://tonto.eia.doe.gov/energy_in_brief/foreign_oil_dependence.cfm)

**NREL:** Distributed energy basics [http://www.nrel.gov/learning/eds\\_distributed\\_energy.html](http://www.nrel.gov/learning/eds_distributed_energy.html)

**World Alliance for Decentralized Energy:** benefits of distributed energy

[http://www.localpower.org/ben\\_economic.html](http://www.localpower.org/ben_economic.html)

**Wikipedia:** Article on distributed energy – see “references” and “external links”

[http://en.wikipedia.org/wiki/Distributed\\_generation](http://en.wikipedia.org/wiki/Distributed_generation)

**Solarbuzz:** Distributed power generation comparison of solar energy to other alternatives

<http://www.solarbuzz.com/DistributedGeneration.htm>

**NREL:** Job and economic development impact model (JEDI) <http://www.nrel.gov/analysis/jedi/>

**SEIA:** 2009 solar industry report and charts [http://www.seia.org/cs/about\\_solar\\_energy/industry\\_data](http://www.seia.org/cs/about_solar_energy/industry_data)

**Apollo Alliance:** Green jobs report <http://apolloalliance.org/downloads/gifgreenjobsrpt.pdf>

**The Solar Foundation:** National Solar Jobs Census 2010

<http://www.thesolarfoundation.org/sites/thesolarfoundation.org/files/Final%20TSF%20National%20Solar%20Jobs%20Census%202010%20Web%20Version.pdf>

# Performance Analysis



Calculate kWh production based on:

- Component Losses – refer to CEC website
- Local Solar Resource
- Unavoidable “location specific” factors
  - Dirt, dust, module mismatch, production tolerance, wiring losses, temperature
- System design/customer factors
  - orientation (tilt angle & azimuth), shading, and ventilation
- Shading



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**California Energy Commission:** Eligible equipment section: equipment performance and monitoring listings:

<http://www.gosolarcalifornia.org/equipment>

Calculate kilowatt-hour production based on:

Component Losses – refer to CEC website

Local Solar Resource

Sunlight level in most of US within 20% of San Francisco

Unavoidable “location specific” factors

Dirt, dust, module mismatch, module production tolerance, ac/dc wiring losses, temperature

System designer/customer influenced factors

orientation (tilt angle & azimuth), shading, and spacing for ventilation

Shading



## Prepare Proposal

- Out of pocket cost
- kWh production estimate
- ROI, payback time, bill projections, savings, 25 year financial projection
- Incentive review
- Permitting costs and any other fees
- Payment schedule, timelines, and milestones
- Warranty and service information
- Major equipment list and equipment location
- Non financial benefit review (environmental)



# Keys To Customer Relations



- Selling is a transfer of enthusiasm
  - Enthusiasm is contagious
- People want to buy from a friend
  - Smile
  - Sincerity
  - Handshake
  - Professional appearance
- Attentive to customers input
  - Considerate of customer concerns
  - Empathetic - show you care, don't just say it



# The Presentation

- Ethical, accurate presentation of electrical, environmental, and financial projections
- Self checkup
  - You never get a second chance to make a first impression”
  - Attitude and Appearance
  - Tools: shade/measurement, ladders, financial analysis, proposal generatic
  - Know what you have to sell and be prepared to discuss module brands



## Self Checkup

- How is my Attitude? Am I in a good frame of mind and ready to meet with the prospect in a productive way?
- Appearance: How do I look? Am I presentable and do I represent the company professionally?
- Do I have all the tools I need? Ladders, shade measurement, financial projection software, etc.
- Do you know what you're going to sell? be prepared to discuss brands of modules

# The Presentation (Continued) groSolar

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- Practice your presentation
  - 2 hours of preparation and follow-up for every hour spent with customer
  - Practice response to common objections
- Hand Shake
  - Firm but not aggressive
- Eye Contact
  - Critical to establish trust
- Smile
  - Friendly sincere



additional information in presenter notes

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## Practice your presentation

- Extremely expensive to practice on your customers!
- Figure out what you're going to say and practice it. This will ensure that you appear professional and knowledgeable.
- You must practice your response to customer objections. Do you have more "closes" than your prospect has objections?

## Hand Shake

- As previously mentioned first impressions are critical. Without a positive first impression rapport cannot develop, without rapport development a prospect will not listen carefully to what you are saying, without a prospect engaged and listening no value can be built, without value no sale will occur.
- People have different ways of shaking hands and as the sales professional it is incumbent upon us to properly gage and respond to the prospects style of handshake. Measure the prospects grip and respond in kind with it.
  - **"Thunder Grip"** handshake - appropriate response is a firm but not overpowering grip (you do not want to get into a battle of strength with the prospect even if you win the physical contest you will lose the opportunity to develop rapport and potentially the deal) let them win this but don't give them a weak response.
  - **"Weak Fish"** handshake - lighten your grip but do not respond with your own "Weak Fish". Make sure that your grip just a bit stronger but not overpowering. If you give this client a "Thunder Grip" they will become even more diminutive and will put up walls which you will have a very difficult time getting through or around. This will make communication very one-sided and no rapport will be developed.

## Eye contact

- Genuine eye contact must occur to establish trust
- Best place to focus your sightline is directly between the prospects eyes.
- People as a whole have a problem trusting people who do not make eye contact it is assumed they are avoiding or hiding something. This will greatly slow down (if not stall) the rapport development process. A key component of the successful eye contact is a

## Friendly, sincere smile

The physical act of smiling relaxes the area around your eyes and will lighten the intensity of your gaze while showing sincerity

## Close The Sale

- **ASK FOR THE ORDER!**
  - #1 reason sales reps don't get the sale is they fail to ask for the order
  - Craft creative methods for asking for the order
- **If you get the sale, STOP SELLING!**
  - Sales reps often talk themselves out of a sale when they continue to "sell" after the customer indicates they will buy
  - Creates credibility concern



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- Quality products you can trust
- Excellent customer service
  - we call our customers back!

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