

SURVEY & RESPONSES

I will be speaking to the Roofing Alliance Industry on the state of the solar industry in regard to technology and roofing manufacturers as far as where they stand. Could you please tell me what represents your company most closely?

1.

A. We have aligned ourselves with a photovoltaic/solar thermal manufacturer(s), which are the following:

1.

B. Our sales / technical people: please select one.
Have been trained by solar manufacturer and ready to train our contractors:
Training still in the process:

2. We are still waiting to see what manufacturers we want to align with. Looking at things on a job to job basis.

Yes: _____

No: _____

Other comments: _____

3. We are not trying to align with any manufacturers, just want to review technical details for installing above our roof.

Yes: _____

No: _____

4. Other:

Any additional comments that you think should be mentioned to the group:

DERBIGUM

- *Has been trained & ready to train contractors.
- Has chosen manufacturers

GAF

- *Has done first training, but still in the process
- *Focusing on the roof
- *Stated the market is rapidly changing. They are focused on solutions and on assuring that roofing is handled properly.

FIRESTONE:

Firestone has recently established an Energy Solutions division to pursue a more focused attention on solar industry opportunities. We are in various stages of alignment with solar companies and are currently addressing opportunities on a job to job basis.

JOHN MANSVILLE

Number 1 best represents Johns Manville. We are planning an announcement regarding our manufacturing partner(s) shortly.

We have also taken a position that JM will not honor roof warranties onto which solar systems have been installed without our prior approval. We will be offering guarantee extensions on roofs less than 5 years in age.

In addition, we will be partnering with our customers to do turnkey installations of solar and roofing systems under an umbrella guarantee.

Welcome and Thank you

Advancement of Renewable Energy Systems

2009

Welcome and Thank you

Solar

Technologies

- Solar Thermal
- Photovoltaic

Applications

Distributed (rooftop)
Centralized Fields

Distinction in Solar PV vs Solar Thermal



Photovoltaics

Solar Thermal



Solar Thermal



Commercial

- Heating
- Cooling
- Showers
- Pools
- Cleaning

Can affect roofing systems

- Most systems utilize rooftop as location
- Uses racking systems and penetrations for implementation

Solar Thermal



Centralized

- Makes Electricity
- Steam Turbines



Does not affect roofing systems

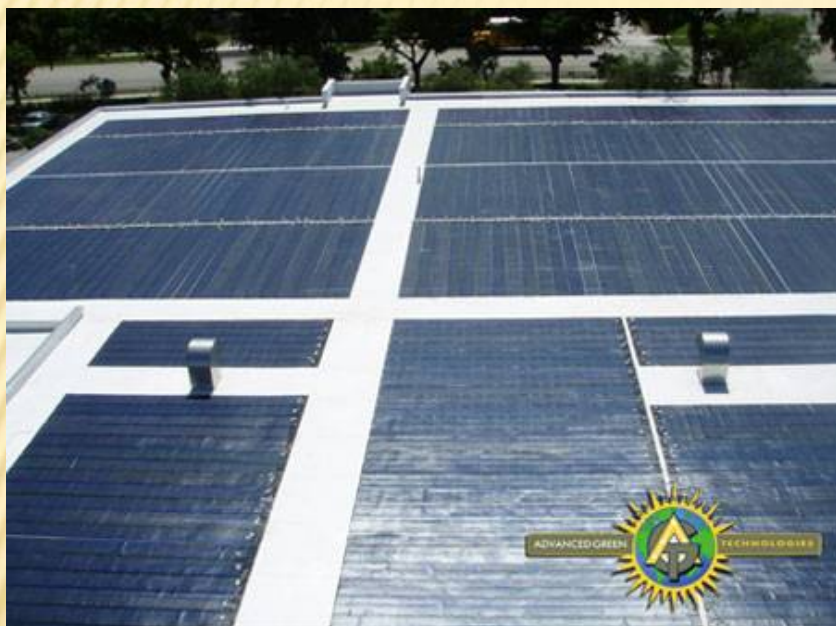
Residential Photovoltaics



Affects the roofing systems

- Either with racking system or fully integrated
- New systems being developed with announcements by major roofing and other product manufacturers

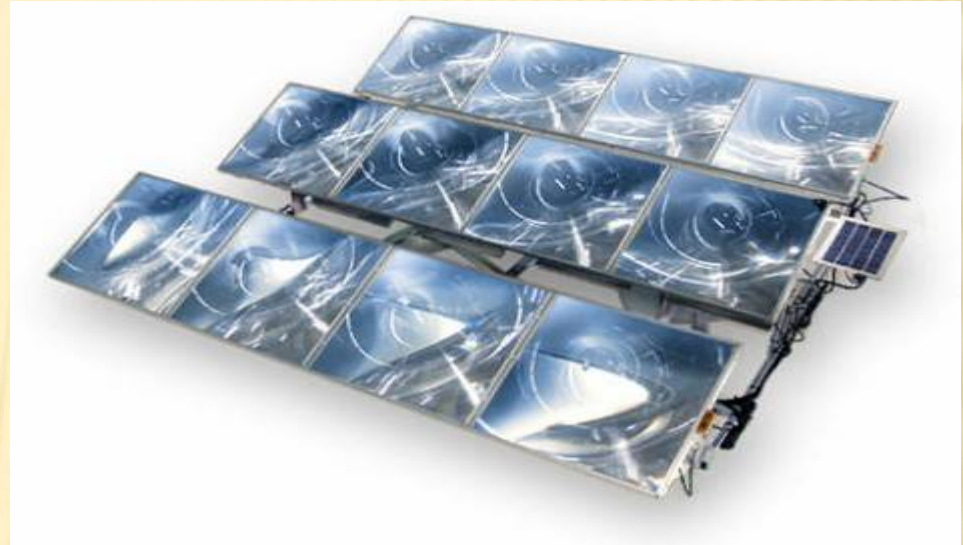
Commercial Integration



Affects the roofing systems

- Either with racking system or fully integrated
- New systems being developed with announcements by major roofing and other product manufacturers
- Product development happens on solar manufacturing side with CiGs, CdTe, new M-CSi systems and others
- “Thinner is better (and cheaper)”

Concentrating Solar



Affects the roofing systems through penetrations

- Can be either distributed or centralized generation
- Some systems combine thermal and photovoltaic
- Must track in 2-axis
- Utilizes latest space solar technology (Boeing, Intel, Emkore) >35% efficient

Bringing the solar to Eye level

9:57:35 P.M.
SUNDAY, MAY 3RD

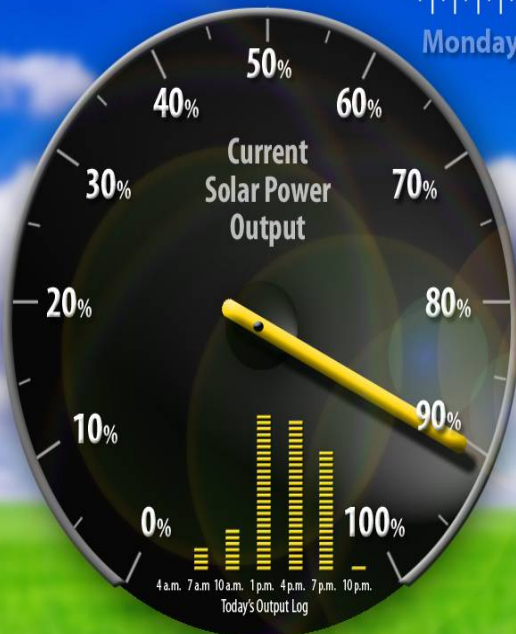
Welcome to real-time solar monitoring

Powered By:



[System Overview](#) | [Contact an AGT Professional](#)

Monday Tuesday Wednesday Thursday Friday Saturday Sunday



092.20 kWh

Current kWh Output

Today 103.00 kWh

This Week 420.70 kWh

This Month 420.70 kWh

This Year 420.70 kWh



Find out how solar energy helps our planet



- System Overview
- Solar Education Center
- Climate Affect Module
- Photovoltaics and You
- Tax Incentives and ROI

AGT ANNOUNCES NEW FLEXLIGHT SOLAR STATISTICS - NEW 35% TAX INCENTIVES

WORKING WITH THE FEDERAL GOVERNMENT

- ✘ What's different about doing business with the Federal Government?
 - + Lots of Detail
 - + Little Negotiation
 - + Give them exactly what they ask for

WORKING WITH THE FEDERAL GOVERNMENT

- ✘ What's the same about doing business with the Federal Government?
 - + Relationships are key
 - + Contract vehicles are key
 - + Registering to do business removes a barrier
 - ✘ DUNS
 - ✘ Central contractor Registry (CCR)

HOW SHOULD I RESPOND TO ARRA? – STATES

- ✘ \$3 billion for States for their own buildings
 - + State Energy Program
 - + Energy Efficiency and Conservation Block Grants (EECBG)

- ✘ Watch your state program announcements

HOW SHOULD I RESPOND TO ARRA? – FEDERAL BUILDINGS

- ✘ \$5.5 billion for Work on Federal Buildings through the GSA
 - + What is the General Services Administration (GSA)?
 - + What is a GSA Schedule?
 - + Where do I get more information?
 - ✘ [www.gsa.gov] and click Recovery Act
- ✘ Develop contract vehicles and partnerships
- ✘ Watch [www.grants.gov]

HOW SHOULD I RESPOND TO ARRA? – LOCAL GOV'T

- \$1.9 billion for Local Governments directly through Energy Efficiency and Conservation Block Grants (EECBG)
 - ✗ Where do I get more information?
 - ✗ [www.eecbg.energy.gov/grantalloc.html]
- ✗ Learn the requirements, available now
- ✗ Contact local governments you have relationships with

HOW SHOULD I RESPOND TO ARRA? – SCHOOLS

- ✘ \$8.8 billion in School funding is allocated by formula through the Department of Education
 - + The formula is set, specific funding is not announced
 - + Mechanisms for distribution are not set
 - + Where do I get more information?
 - ✘ [www.ed.gov/programs/statestabilization]
- ✘ Learn the requirements when they are posted
- ✘ Contact school districts you have relationships with

HOW SHOULD I RESPOND TO ARRA? – WEATHERIZATION

- ✘ \$5 billion managed by the Department of Energy
 - + Specific funding for each State is set
 - + Mechanisms for distribution are not set
 - + Where do I get more information?
 - ✘ [apps1.eere.energy.gov/weatherization/recovery_act.cfm]

- ✘ Watch for a funding mechanism

OTHER ARRA OPPORTUNITIES

- × Loan Guarantee

- + Large private projects can get subsidized loans

- × High transaction costs

- × Projects over \$25 million

- × Bonds

- + Municipalities can get 0% financing

SUMMARY

- × Register
- × Learn the Rules
- × Leverage your existing relationships and contracts
- × Find the right partners now
- × Target, don't overreach

WSJ.com - Texas Moves to Foster Solar Power

AUSTIN, Texas -- The Texas state legislature is expected to soon approve one of the largest subsidy programs for solar-power in the U.S. Long a leader in oil and natural gas-based energy, Texas embraced wind power years ago and generates more electricity from wind than any other state. Building on that, the state senate on Tuesday overwhelmingly approved \$500 million over five years for a rebate program to encourage solar-power installations, while a senate committee advanced a bill that would mandate a roughly 60% increase in electricity derived from renewable sources other than wind. At least 30% of the \$500 million -- which is to come from electric-bill fees -- would be dedicated to small-scale installations. The legislation also bars homeowners associations from prohibiting residential solar panels. The bill awaits a vote by the Texas House of Representatives. Jim Marston, head of the Texas chapter of Environmental Defense, said he expects the rebates would bring Texas about 250 to 500 megawatts of solar-power generation, which now costs more than other electricity sources but is being buoyed by government support and falling manufacturing costs. That is roughly equivalent to the output from a natural-gas power plant.

At Republic Services' Tessman Landfill in San Antonio, solar panels are estimated to generate enough electricity to power around 20 homes. There are currently 590 megawatts of solar generating capacity in the U.S., according to the federal Energy Information Administration, and that is expected to grow to 900 megawatts by 2014. Raymond Walker, general counsel of Standard Renewable Energy, a Houston company that installs solar panels for homes and businesses, said he was encouraged. The bill, he said, "signals to the industry that Texas is a good place to do business for the renewable-energy industry." One potential drawback is the price at which homeowners would be able to sell their excess solar power to utilities -- an important factor in calculating how long it takes to recover the cost of installing solar panels. The bill requires that utilities purchase surpluses at a "fair market price," which can be 20% less than the going rate for retail electricity. Other states require utilities to match the going rate when buying excess solar power, said Rusty Haynes, a program manager at the North Carolina Solar Center, a government-funded information clearinghouse. That discrepancy will slow the adaptation by Texans, he said. The bill approved by the senate panel, meanwhile, would require that Texas get 3,000 megawatts -- about 3.8% -- of its electricity from renewable sources other than wind. Texas already mandates that more than 5,000 megawatts come from wind. Solar advocates say this will help jumpstart a solar-manufacturing industry in Texas. "These new bills would bring [Texas] into the forefront of states that have solar incentives and possibly help make them a leading producer of solar electricity," said Glen Andersen, who tracks renewable energy for the National Conference of State Legislatures. Other states are being even more aggressive on this front. A new Arizona law requires that 4.5% of its electricity come from solar power by 2025, and New Mexico is aiming for 4% by 2020. California is considering a requirement that the state get 33% of its electricity from renewable sources by 2020.

