

Welcome to the 29th

ASES NATIONAL

SOLAR TOUR

**EXPERIENCE
SOLAR**
In Your Community

NATIONAL SOLAR TOUR
October 4-6, 2024
and virtually throughout the year



Navigating the Path to Solar Adoption: Overcoming Barriers, Building Community Trust, and Voting for Renewable Energy Champions

Carly Rixham, ASES Executive Director

The journey to widespread solar adoption is not without its challenges. From siting conflicts and local opposition to misinformation and high interest rates, numerous factors delay the deployment of solar energy projects. Resistance to large-scale solar initiatives based on misinformation underscores the importance of factual information and building trust.

To overcome these barriers, it's crucial to engage with community members through face-to-face conversations, and leveraging social media and local publications for advocacy. Highlighting the benefits of solar energy and addressing local concerns can pave the way for acceptance. Sharing case studies and success stories from various regions, alongside utilizing resources such as ASES programs, webinars, and the new Grid Modernization division, are effective strategies to promote both small-scale and large-scale solar deployment. By fostering informed dialogue and demonstrating tangible benefits, we can turn resistance into support and accelerate the transition to a sustainable future.

Thousands of renewable energy and sustainability advocates across the country are gearing up for the 29th ASES National Solar Tour, the largest grassroots solar and sustainable living event in the U.S. The showcase weekend is October 4-6, however, in-person and virtual tours will be held year-round. You can find events in your area on our new and improved map at map.nationalsolartour.org. ASES hosts the National Solar Tour free of charge to all attendees and tour organizers, though some individual tours may suggest a small donation for support.

Given this year's presidential election, now is the time to vote for renewable energy champions and foster conversations about policies that will accelerate the adoption of clean energy technologies to bring about a more lucrative, healthy, secure, and resilient future for all.

Thank you for participating in this year's tour; we are excited you're here. Join us again next year for our 30th Annual National Solar Tour on October 3-5, 2025!



2024 Tour Highlights

See all tours at nationalsolartour.org

Alabama

Birmingham: UAB Solar House and Sustainable Community
Blountsville: Blount County Alabama Solar Home Tour

Arizona

Kenna's Urban Homestead

Arkansas

Fayetteville: NetWork Building Solar Site
Rogers: Holistically Green Living Education Center

California

Sacramento: "Solar Cookers International's Virtual Tour of the Benefits of Solar Cooking"
West Hills: Brian and Susan Jensen Home

Colorado

Golden: Denver Metro Green Homes Tour
Jamestown: Jamestown Solar Tour
Longmont: Jack's Solar Garden
Salida: Ark Valley Green Homes Tour

District of Columbia (DC)

U.S. Department of Energy's Zero Energy Ready Homes Virtual Tour
The Festival Center's Solar and Electric-Only Training Kitchen

Florida

Cape Canaveral: City of Cape Canaveral Solar Tour
Lake Mary: Lake Mary Solar Home
Hollywood: Frisard-Menschner Residency
Jupiter: Solar HVAC Home
Sarasota: Sarasota Home
South Miami: Tree House

Illinois

Grayslake: Illinois Solar Tour

Indiana

Sound Bend: Tiny Eco-House

Kansas

Lawrence: Heartland Renewable Energy Society Tour
Wichita: Solar Panel Array Site

Kentucky

Wilmore: Wilmore City Solar Tour

Maine

Jonesport: Downeast Alternative Design Solar
Wells: Wells ranch converted to net-zero & Solar Cottage tour

Massachusetts

Pelham: Home Energy Makeover
Centerville: Cape Cod Kettle Pond Home

Michigan

East Lansing: Michigan Virtual Solar Home Tour

Minnesota

Albertville: Large System - Rambler
Minneapolis: Minnesota Sustainability Tour
Orr: Ban Lake off the Grid Solar Cabin
Pine River: Balsam Moon Preserve Solar & Sustainable Site

Montana

Holy Spirit Episcopal Church

New Jersey

Alfred: Alfred University Tiny House
Lafayette: Helios Net Zero Energy Home
Madison: Home & Office in Town

Ohio

Beavercreek: Byrd Residence with Solar Gazebo
Chagrin Falls: Curran-Tuskes residence
Mentor: OHIO "Wish You Were Here" tour
Wooster: Wayne County Green Energy Tour

Oregon

Salem: Grainey Family Home

Pennsylvania

Exact Solar Local Tour
Energy-Efficient Hockessin Home

Tennessee

Kalmer Solar

Texas

Bastrop: Bluebonnet's Energy Expo
Greenville: Rural Solar Site with Battery Backup

Virginia

Arlington: Two Self-Powered Buildings: Home & Office
Blacksburg: Warm Hearth Village Solar Tour

Washington

Northwest Green Homes Tour

Wisconsin

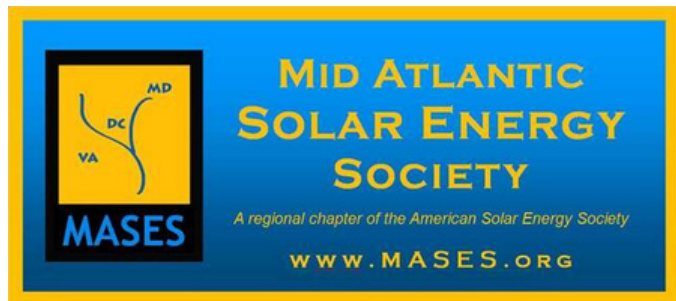
Appleton: Appleton Solar - Home Office
La Crosse: Solar La Crosse Tour
Oshkosh: Church Solar Site

Featured Tours on the 2024 National Solar Tour

Museum of Solar Cooking in Minneapolis, Minnesota

Tour Host: Luther Krueger | In-Person Tour 10/3-10/5

On the Minnesota's Sustainability Tour, Luther's home in has 80+ solar cookers, collected over 20 years' time. We will have as many cookers on our solar deck as we can fit, for any visitors ready to learn about the benefits of solar thermal cooking. The Museum runs an on-going series on the best of solar cooking designs, power users, manufacturers and promoters around the world.



DC Solar Tour: Solar Coffee on The National Mall

Tour Host: Mid-Atlantic Solar Energy Society | In-Person 10/5

Start your day with Solar Coffee on the National Mall before exploring dozens of solar homes and green buildings as part of the 34th Annual Metropolitan Washington, DC Solar & Green Home Tour. During coffee, we'll discuss logistics and arrange optional carpooling in electric vehicles. This year's tour includes self-driving, walking, bicycle, and bus tours, featuring a local solar winery. Join us on the first weekend in October for a day of fun and learning as we work towards a sustainable future!

Innovative Ground Mount in Brodheadsville, PA

Tour Host: Jennie Jerez | Virtual Tour

This 10-acre solar array was installed at the Kinsley ShopRite and will provide 85% of its power. The family-run grocery store is reportedly the first retail business in Monroe County to go solar. It also uses a new type of ballasted ground mount, which allowed the racking and modules to be installed in only four weeks.



Solar House & Sustainable Community

Tour Host: University of Alabama | In-Person Tour 10/5

The UAB Solar House and Sustainable Community is a display of sustainable living in all aspects. It showcases renewable energy solutions, wildlife preservation, clean gardening practices, and rainwater harvesting. RSVP to learn more about this 11 kW system!

RSVP to a tour in your community at nationalsolartour.org!

National Solar Tour

Rock Out with Renewable Energy



Hold onto your sunhats, folks! You might think we're talking about the latest rock band hitting the road, but nope – it's even better! The National Solar Tour is rolling into your neighborhood, and it's set to be a showstopper!

No Band? No Problem! 🎸

While there won't be any guitar solos or drum solos, we promise you'll be electrified by the coolest solar and sustainability setups around. Forget about those mosh pits; we're here for the solar panels!

Stars of the Show 🌟

Meet the real headliners – the stunning solar-powered homes, businesses, and community spaces! These solar stars are opening their doors to show you how they rock the renewable energy world. The two types of events you can choose to host or attend are:

Tour Site: A single solar or sustainable site (either part of a Local Tour or not). Sites can include homes, businesses, non-profits, religious institutions, schools, community solar gardens, etc. Sites are not limited to any of these classifications—any entity that features solar or sustainable features qualifies as a solar site!

Local Tour: a collection of solar and/or sustainable sites. Local Tours are organized by an organization or individual who recruits their network or local neighbors to join their Tour and feature their solar and sustainable upgrades by hosting solar sites on their specific tour. The sites featured on a Local Tours can be within a neighborhood or town and driven to, biked to, walked to, and virtual sites can be spread out across the country and included on that specific Local Solar Tour.

Get Your All-Access Pass! 🎫

RSVP at map.nationalsolartour.org. Explore different tour stops, chat with solar experts, and maybe even get a selfie with a super-efficient solar array. Talk about star power!

Solar Groupies Unite! 🤝

Join fellow solar enthusiasts, swap stories, and discover how you can bring the solar magic to your own home. Who knows, you might find yourself starting your own solar revolution!

Tour Dates and Locations 🌞

The National Solar Tour is happening all across the country. Find a tour stop near you and mark your calendars for a day of fun, learning, and solar inspiration. No tour bus required – just a sunny disposition!

Let's rock the world with solar power!

Visit nationalsolartour.org to learn more. See you there, solar fans!

ASES NATIONAL
SOLAR TOUR

Contact Us:
solartour@ases.org



Thinking about Installing Solar Panels? Questions for Yourself and Solar Installers

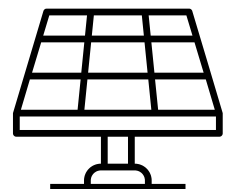
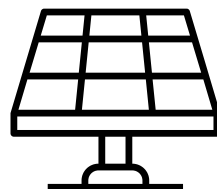
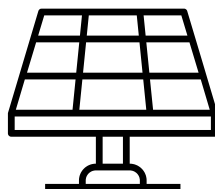
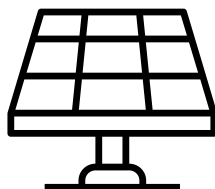
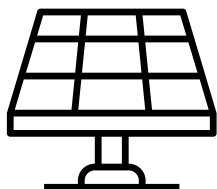
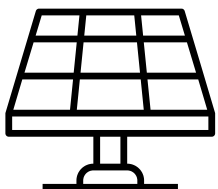
By: New York Solar Energy Society and ASES Divisions

Preparation Questions (typically before you contact an installer):

- Have your last electric bill(s) showing the kilowatt hours used per month for a year. Tell the installer if the bill includes electrical use for car charging, outbuildings, or anything else unusual.
- Go to www.pvwatts.org to familiarize yourself with an evaluation for solar panels.
- Go to www.dsireusa.org to familiarize yourself with state incentives in your area.
- Do you plan on using PV to charge an electric vehicle(s)? If so, what is the make, model, and year?
- Does your homeowner's association or planning/zoning department have laws against putting solar panels on the roof or in the yard? What prevents a neighbor's building from shading my system?
- Will my home value change? – Ask local appraisers.
- Will my real estate taxes go up? – Ask the tax office

General Installer Questions:

- What year was your company established? Where are your offices? How many systems have you installed locally? Are you licensed and insured? Can I have a list of references, such as your last five projects, with contact information?
- What services are included as part of your installation? Building permit application filing? Utility interconnection? Have you worked with my building department and utility before?
- Will the system meet local building and fire codes?
- What warranties are there on the different parts of the system? Who do I call if there is a problem?
- Are the warranties transferable to another owner? What happens if you go out of business?
- Will you give me a firm quote or an estimate prior to signing a contract?
- How are contract changes addressed? Do I have the right to cancel?
- How long will the period be between the time I sign the contract and installation?
- Do you confirm that my roof is structurally OK to hold panels?
- Can you install a canopy, a ground-mounted, or a tracking system if my roof isn't appropriate?
- Who is responsible for fixing any damage to my home caused during installation? Or due to a penetration in the roof that later results in a water leak?
- Can I apply for shared solar or community aggregated solar?
- What is the process for future roof replacement? What is the cost of removing and replacing panels?
- Can you perform a whole-house energy audit and make recommendations on reducing energy demands? If not, who can you recommend? Can you perform other services than installing PV?





Thinking about Installing Solar Panels? Questions for Yourself and Solar Installers

By: New York Solar Energy Society and ASES Divisions

Cost-related Questions:

- How much can I save using solar?
- What financing options do you offer (such as lease, power purchase agreement, loan, or cash)?
- How will the various finance options affect my ability to sell the home?
- Do your fees include building inspection permit fees? Utility interconnect fees?
- How much money is due upfront? When are other payments due?
- Are there rebates and incentives that come to me versus filing on my taxes? Federal? State?
- Other?

Design, Sizing, Projected Performance Questions:

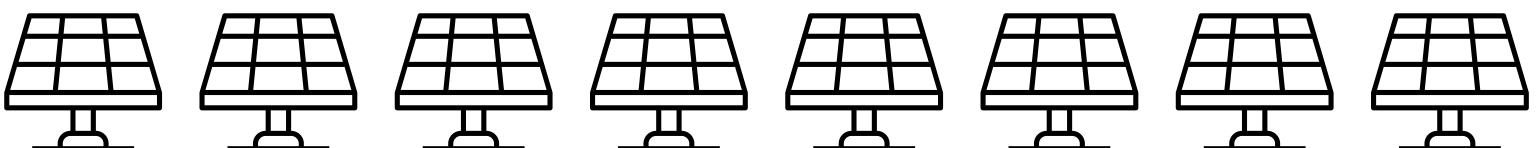
- Who estimates my annual output? Will a state-licensed P.E. (professional engineer) review and stamp your drawings?
- How many of the panels/percentage of the total system are used to charge my electric vehicles?
- Do you offer a system performance guarantee? How much will the panel performance degrade?
- Whose panels, inverters, and batteries do you carry?
- Should I wait for newer technology?
- Do you recommend using a central inverter, micro-inverters, or optimizers? Why?
- Should my panels be interconnected to the grid? Can I get a power car during a blackout?
- Will the system include panel-level monitoring? Does it cost extra? How do I access it?
- Can I charge my electric car when the sun isn't shining? Anything else I will have to forego when the sun is not out?

Installation Questions:

- Are your installers NABCEP certified? Are the installers your employees? Do you use subcontractors for any part of the installation? Do you have your own electricians on staff?
- Will there be a licensed electrician on site the entire time or after completion for review?
- What is the realistic schedule, when could you start, and how long will the process take in total?
- Will someone from your team be present when building and utility inspectors come to inspect?
- Do I need to be home during the entire installation?

Follow-Up, Maintenance Questions:

- Do you proactively monitor my system's performance after installation and notify me of issues?
- Will you provide or offer annual (or other periodic) routine maintenance?
- What is involved if I add more panels/modules later?



Discover the Different Types of Electric Vehicles

Electric mobility includes light, medium, and heavy-duty vehicles, electric micromobility devices, and transit vehicles. The evolving EV market offers various models, from compact cars to SUVs and trucks, powered by batteries or as plug-in hybrids. This section covers different EV types and charging infrastructure, including battery electric buses (BEBs), electric school buses (ESBs), and e-bikes.



The Tesla Models S and X are examples of a battery electric vehicle.

Battery Electric Vehicle (BEV)

Also known as "all-electric vehicles," BEVs operate solely on electricity and recharge from an external power source. They utilize one or more electric motors powered by rechargeable battery packs. Most BEVs can travel a minimum of 100 miles per charge, with many newer models boasting ranges of 200-300 miles or greater. This category encompasses battery-powered buses like BEBs and ESBs.

Plug-In Hybrid Electric Vehicle (PHEV)

PHEVs employ both batteries and an electric motor, which can be recharged externally. They also integrate a smaller internal combustion engine that serves to recharge the battery or, in some models, directly power the wheels, extending their driving range. In "EV mode," PHEVs can typically travel moderate distances using only the battery, ranging from 20 to 50 miles in current models. Compared to conventional vehicles, PHEVs consume 14 to 47 percent less fuel when their batteries are fully charged. In situations where electricity is not available, they can operate on conventional fuel such as gasoline or diesel.

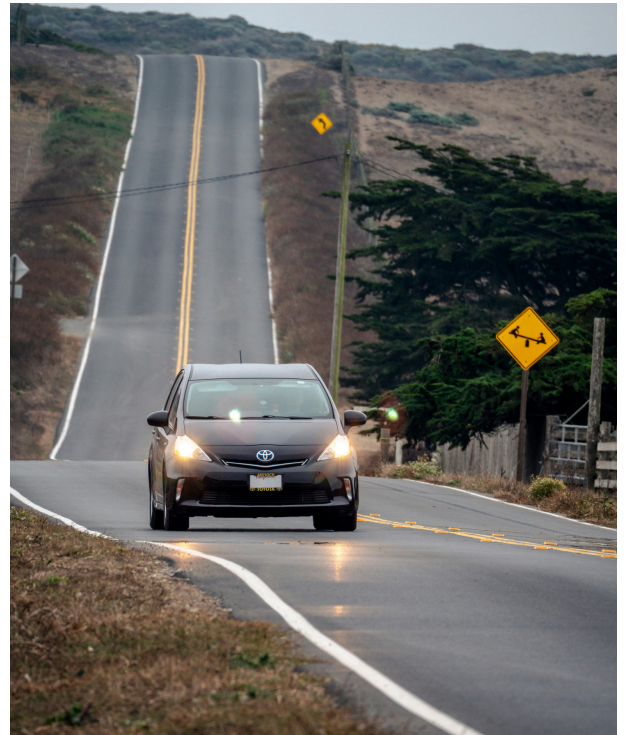


The Toyota RAV4 Prime is an example of a plug-in hybrid electric vehicle.

Hybrid Electric Vehicle (HEV)

HEVs are equipped with both a gasoline engine and an electric motor for propulsion. The battery in HEVs is charged through regenerative braking, which captures energy typically lost during braking and uses it to support the gasoline engine during acceleration.

In conventional internal combustion engine vehicles, this braking energy is dissipated as heat in the brake pads and rotors. Unlike plug-in hybrids, standard HEVs cannot be recharged from the electric grid.



The Toyota Prius is an example of a hybrid electric vehicle.



The Honda FCX Clarity is an example of a fuel cell electric vehicle.

Fuel Cell Electric Vehicle (FCEV)

FCEVs utilize an efficient electrochemical process to convert hydrogen into electricity, which powers their electric motors. FCEVs are not designed to recharge their batteries from an external source. Instead, they are fueled by compressed hydrogen gas stored in onboard tanks.

Resources

- <https://www.transportation.gov/urban-e-mobility-toolkit/e-mobility-basics/vehicle-types>
- <https://afdc.energy.gov/vehicles/how-do-hybrid-electric-cars-work>
- <https://afdc.energy.gov/vehicles/electric-basics-hev>



CALL TO ACTION



I will be a Renewable Energy Voter

I will vote across all local, state, and federal elections, for policy and action that spurs equitable clean energy adoption that is a proven winner for the economy, jobs, resiliency, health, and the environment.



I will be a Renewable Energy Advocate

I will educate friends, family and my wider community and make my voice heard with representatives at all levels of government and in the press about how clean energy adoption leads to healthier, cleaner, more economically secure and resilient communities .



I will be a Renewable Energy Consumer

I will adapt my purchasing and investing behaviors to favor products that support the triple bottom line - people, planet, and profit.

Be the change you wish to see! With the presidential election coming up, it is crucial to vote for renewable energy champions. Now is the time to make a difference!

Learn more at ases.org

Energy First Strategies



SOLAR BUILDINGS
DIVISION

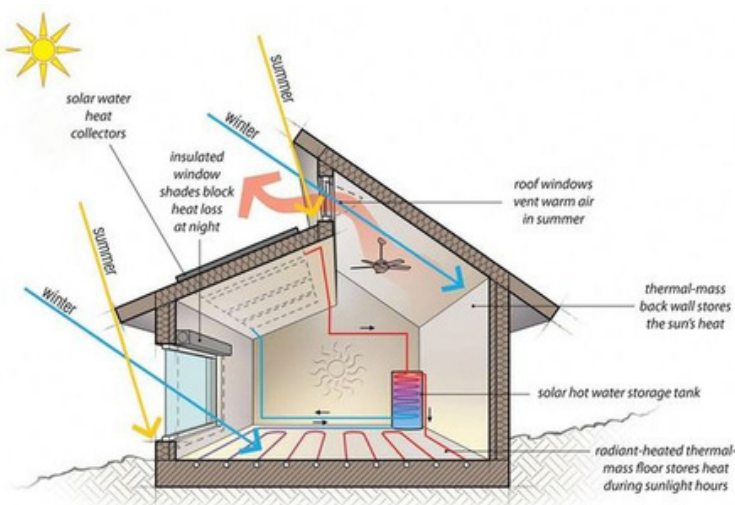
Solar panels can go twice as far on a building, which reduces its energy load by 50%. For an average size home, 16 solar panels might be needed instead of 32. Some reports indicate that the future energy demand in the United States can be reduced by 35-40% by energy-efficient measures alone across industries.

Constructing new buildings and renovating existing ones above energy code minimums would reduce demand on the electrical grid with these proven strategies:

- Quality installation of extra insulation (to keep heat in during winter and out during summer)
- Improved air sealing to keep warm winter air in and hot, humid summer air (and insects) out
- Higher efficiency heating and cooling systems (replacing older systems with electrical units)
- New exhaust and fresh air systems (such as energy recovery ventilators) for healthy air
- Awareness of building and window orientation (maximize south glass for winter heat gain while providing summer shading, and minimize west glass to reduce summer heat gain)
- Incorporating some high-density materials (the building functions as a battery to absorb and release heat to increase interior comfort for longer periods when the electrical grid is down)
- Solar Ready— incorporate solar panels on the roof, porch, carport or yard to use solar power

These strategies can be adapted for specific climates to create healthier buildings that use less energy, stay more comfortable year-round, and are more resilient during natural disasters.

The workforce performing these building-related services is increasingly important. It is a natural transition for those leaving the fossil fuel-related industries to enter the clean energy workforce with the availability of jobs being created in the building science and solar energy fields. Training programs are being created across the nation at the state and local levels.



Passive Solar

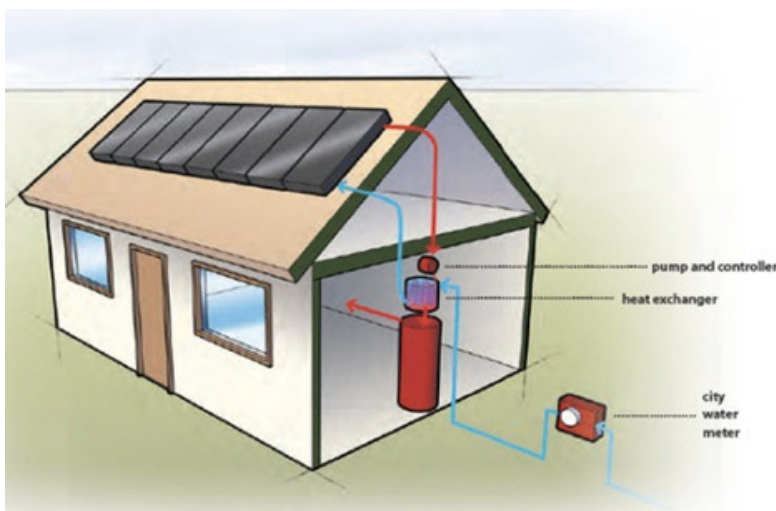
Passive Solar structures are designed with natural energy flows can keep a house comfortable through the year. Passive design uses architectural form to gather energy from on-site sources (chiefly the sun) and also to store and dissipate it (for instance, by letting in cool night air).



Energy First Strategies

Action Items: What can you do as an individual, building owner, policy maker, and educator?

- Visit www.dsireusa.org for a Database of State Incentives for Renewables & Efficiency® - information on incentives & policies that support renewables & energy efficiency.
- Visit www.bpi.org and www.resnet.us to find Home Energy Raters to test and evaluate your home for possible energy improvements.
- Visit www.building-performance.org for State Energy Office Support. The IRA and IIJA offer energy offices millions of dollars and a historic opportunity to supercharge local clean energy economies while also offering training programs to assist the workforce.
- Encourage state energy offices to create educational programs, policies & workforce training.
- Visit www.greenhomeinstitute.org to learn about making healthier and more sustainable choices in the places we live.
- Attend free webinars, download the free checklists, and sign up for sessions customized for homeowners, architects, builders, home energy raters, realtors, etc.
- Tell your story! Share solar and clean energy accomplishments via the National Solar Tour.

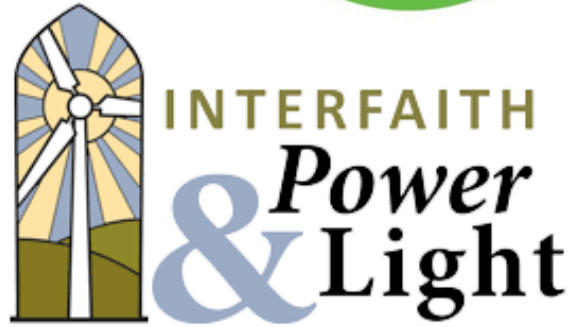


Solar Thermal

Solar thermal technologies absorb the heat of the sun and transfer it to useful applications, such as heating buildings or water. This image is an example of a solar hot water heater. In most parts of North America, the best bang for your solar energy buck is with domestic solar water heating (DSWH).



Thank you to our Sponsors & Partners!



Thank you for attending the National Solar Tour! By participating you have contributed to increasing solar adoption and the implementation of sustainable technologies.

nationalsolartour.org

