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Clean Energy Coalition**

*2017 Genesee County Planning Forum
February 24, 2017*



bridging needs. advancing change.

- 1. About Clean Energy Coalition (CEC)**
- 2. Why Get Solar Ready**
- 3. Tools**
- 4. Who's Getting Solar Ready**
- 5. Q & A**

1. About CEC

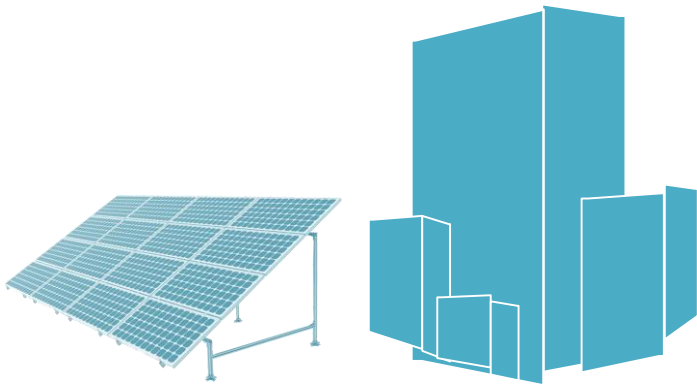
WHO WE ARE



our mission:

Clean Energy Coalition is a nonprofit, nonpartisan organization dedicated to promoting clean energy technologies as a way to create healthier, energy independent communities.

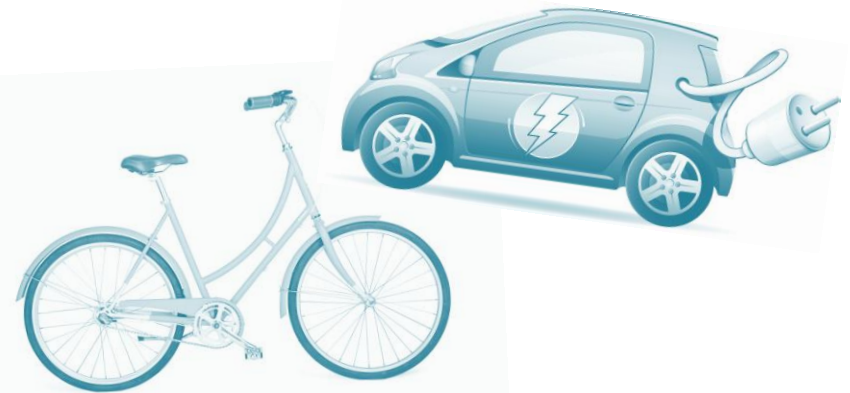
WHAT WE DO: *Projects!*



**Community Energy
Programs**

Building Performance

Renewable Energy



**Transportation System
Strategies**

**Non-Motorized
Transportation**

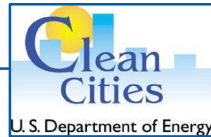
Fleet Support

WHAT WE DO: Partnerships

private



public



education



non-profit



WHAT WE DO: *Our Belief*

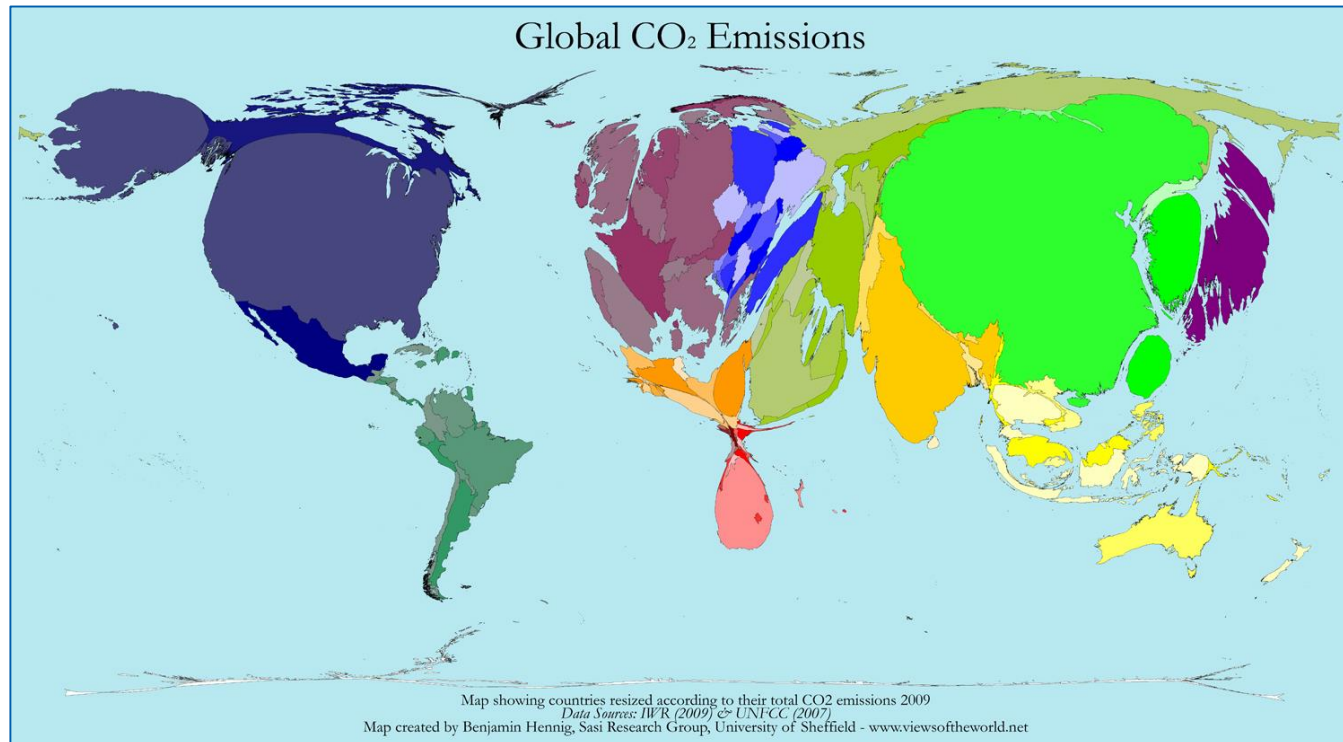


*The
simplest
solutions
are often
the best
solutions.*

WHAT WE DO: *Prioritization*



WHY WE DO IT: *Climate Change*

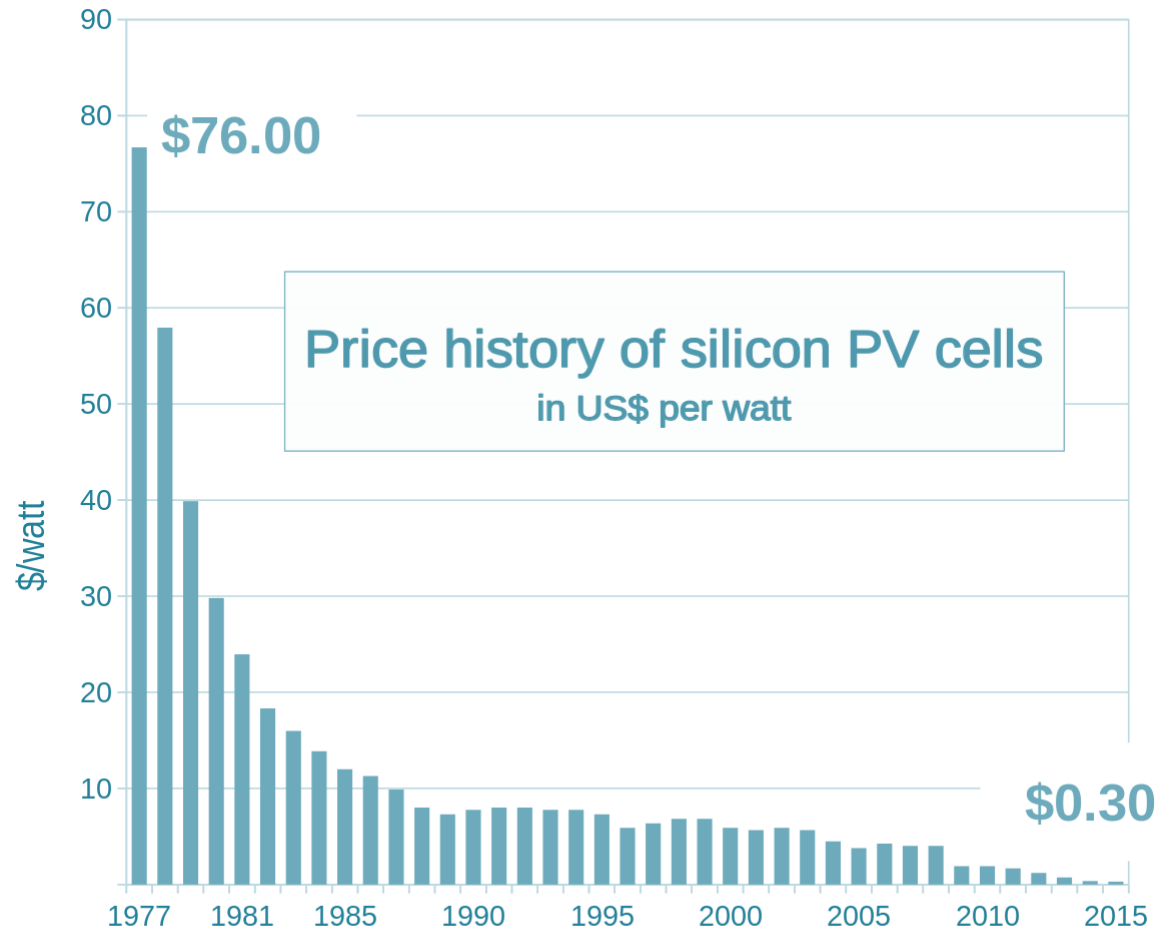


2. Why Get Solar Ready?

Being a Solar Ready Community means that:

- We have chosen to be a leader in Michigan and will proactively address solar in our local policies.
- We are prepared for this emerging technology and supportive of the solar industry in this state.
- Developers, homeowners, and businesses know that as a *Solar Ready Community*, they can rely on us to help them through a successful, cost-effective installation process.

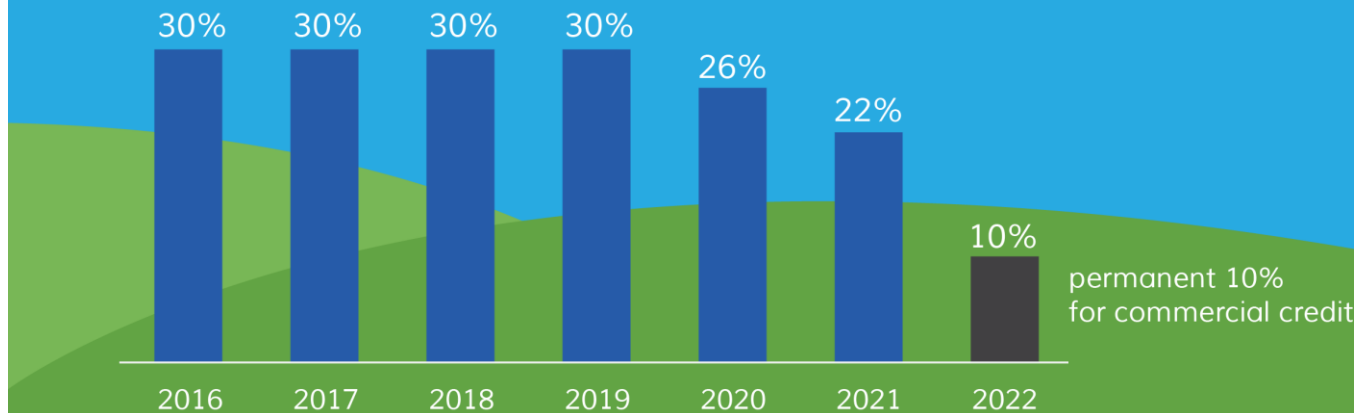
WHY ARE WE SEEING MORE PV?



Source: Bloomberg New Energy Finance & pv.energytrend.com

WHY ARE WE SEEING MORE PV?

Everything you need to know about the extension of the ITC



© EnergySage

SCALE OF PROJECTS

On-Site



- Installed on-site accessory to principal use
- Small scale: typically 6-8kW
- Distributed
- Single, private ownership
- Supplements grid usage

Community



- Installed at host site
- Small to moderate scale: less than 100kW
- Distributed
- Shared private ownership
- Provides electricity to host

Utility



- Installed as principal use on large sites
- Large scale (measured in MW not kW)
- Centralized
- Utility or large private entity ownership
- Wholesale energy to utility provider

3. Tools

WHO'S MET THIS GUY?



WHO'S MET THIS GUY?



HOW? MI Renewable Energy Tools!



RENEWABLE ENERGY FACT SHEET URBAN BIOENERGY

Whether motivated by the desire to protect the environment, reduce utility expenses, or localize energy sources and jobs, Michigan's interest in renewable energy is growing. In recent years, local jurisdictions have experienced an increased number of requests for renewable energy installments, and this trend is expected to continue. With renewable energy on the rise, now is the time for counties, cities, villages, and townships to prepare and determine how renewable energy installations can best fit into your community.



RENEWABLE ENERGY FACT SHEET SMALL WIND POWER

Whether motivated by the desire to localize energy sources, save money, or protect the environment, Michigan's interest in renewable energy options is growing. In recent years, local jurisdictions have experienced an increased number of requests for renewable energy installments and this trend is expected to continue. With renewable energy still in its early days, now is the time for counties, cities, villages, and townships to prepare for this change and determine how these installations can best fit into your community.

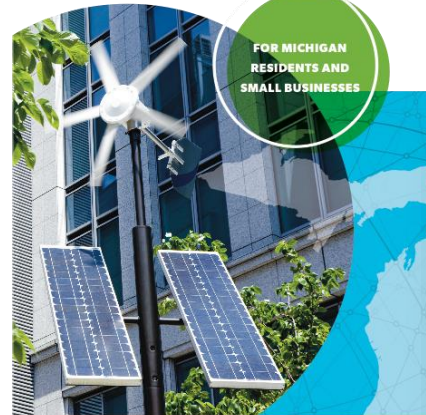


RENEWABLE ENERGY FACT SHEET ELECTRIC VEHICLE CHARGING STATIONS AND RENEWABLE ENERGY

Increasing fuel prices, concerns about energy security, and air quality improvement goals have spurred an interest in pairing automotive technology with renewable energy sources. Plug-in electric vehicles (PEVs) offer this opportunity.



RENEWABLE ENERGY COMMUNITY GUIDEBOOK



FOR MICHIGAN
RESIDENTS AND
SMALL BUSINESSES

SEPTEMBER 2013

This document was prepared by
Clean Energy Coalition through a grant
provided by MEDC/Michigan Energy Office



BECOMING A SOLAR-READY COMMUNITY

A GUIDE FOR
MICHIGAN LOCAL
GOVERNMENTS



SEPTEMBER 2013

This document was prepared by
Clean Energy Coalition through a grant
provided by MEDC/Michigan Energy Office



SOLAR READY STEPS

read·i·ness

/ˈredēnis/

noun

1. The state of being fully prepared.

Readiness helps local governments direct their own future by proactively determining how something will best fit into your community.

Step 1: Begin the Discussion

- Introduce concept to key people
- Reach out to neighboring jurisdictions
- Engage utility provider
- Identify champions
- Develop taskforce

SOLAR READY STEPS

Step 2: Adopt a Resolution

- Support and attract local companies in the solar industry
- How solar brings positive recognition
- Benefits of reducing dependency on imported energy sources
- Health and environmental benefits
- Supports local goals

Tool: Sample resolution

TOOL B: SAMPLE RESOLUTION

RESOLUTION NO. _____

AUTHORIZING A COMMITMENT TO THE ADVANCEMENT OF SOLAR ADOPTION WITHIN THE REGION AND COOPERATIVE EFFORTS BETWEEN _____ IN PURSUIT OF THIS GOAL.

WHEREAS, Because Michigan (or local government if applicable) is home to key solar companies, the community wishes to take leadership on promoting solar energy generation and views supporting advancement in solar adoption an essential contributor to the region's economic prosperity; and

WHEREAS, Becoming a statewide leader in solar adoption will bring positive recognition to _____; and

WHEREAS, The United States, Michigan, and this region import sources of energy, adoption of solar helps localize the energy source, thereby helping our country, state, and region reduce its dependence on imported energy sources; and

WHEREAS, Solar installations help preserve our natural resources and reduce greenhouse gas and other harmful emissions; and

WHEREAS Michigan has reached its 10 percent goal for renewable energy and is well positioned to set higher goals in this area; and

WHEREAS renewable energy resources, such as community solar, offer many potential community, economic, environmental, national security, and societal benefits for the state; and

WHEREAS communities that become Solar Ready benefit from enhanced Community Vitality and new Business Investment; and

WHEREAS, Solar is proving to be a viable energy source in Michigan, and

WHEREAS, Encouraging solar adoption helps support the several goals found in local planning documents.

NOW, THEREFORE, BE IT RESOLVED THAT _____, supports the continued exploration of reducing barriers to solar adoption and earnest consideration of new policies and processes that help support solar adoption and becoming a Solar Ready Community.

BE IT FURTHER RESOLVED THAT _____ (will work cooperatively with neighboring jurisdiction name(s) if applicable) to explore policy and process change and engage in an exchange of information regarding solar adoption in the region.

SOLAR READY STEPS

Step 3: Establish a Guiding Policy that Supports Solar

Do you have a planning document that supports solar

If yes:

- ☐ Determine strength of policy
- ☐ Raise awareness of policy
- ☐ Find out what has been done

If no:

- ☐ Take opportunity to include solar during next update cycle

Tool: Sample planning language

TOOL C: SAMPLE PLANNING LANGUAGE

The character of planning documents varies among jurisdictions. The text below provides local governments with sample language that each jurisdiction can tailor to suit local needs. Additional language can also be drawn from the main body of this text (see Introduction). Please consult your local legal counsel for advice on the appropriateness and applicability to your jurisdiction's Master Plan.

SAMPLE REASONING AND BACKGROUND LANGUAGE

1 Secure Energy Supply:

A solar-electric infrastructure helps protect the power supply during brownouts, blackouts, power interruptions and price fluctuations.

2 Stimulate Jobs and Industries:

Support for and adoption of solar infrastructure will create economic opportunities for Michigan-based manufacturers and suppliers.

3 Save Our Fresh Water Resources:

In contrast to other forms of energy, solar installations use no water in the generation of clean, renewable electricity.

4 Reduce Operating and Maintenance Costs:

Many rooftop solar-electric installations actually act to insulate the building below. In addition, large photovoltaic installations can shade and protect a rooftop from damaging ultraviolet radiation, slowing the need for rooftop maintenance or replacement.

5 Reduce Emissions: Solar energy does not contribute to greenhouse gas emissions and will help reduce emissions by replacing polluting sources of power.

SAMPLE GOAL LANGUAGE

1 Demonstrate Leadership in Public Buildings by holding building public facilities to a higher energy efficient standard and by using on-site renewable energy in new buildings and facilities where technically and economically practical.

2 Protect Unobstructed Sunlight in planning and development processes to promote the use of solar energy.

3 Work with Developers to consider renewable energy resources in the layout and construction of new development.

4 Provide Information and Education to help property owners easily navigate permitting processes as they relate to solar.

5 Update Regulations to help support solar adoption and keep current with technologies.

6 Share Information to help other local governments interested in supporting solar successfully prepare for future demand.

7 Become a Solar Ready Community to send the message to developers, homeowners, and businesses that they can rely on us to help them through a successful, cost-effective installation process.

SOLAR READY STEPS

Step 4: Update Code Language

- Abandonment
- Agriculture land use
- Height
- Stormwater
- Reflection/Glare
- Screening
- Setback

Tool: Sample zoning language

TOOL D: SAMPLE ZONING LANGUAGE

The character of zoning ordinances varies among jurisdictions. The text below is based on several, primarily Michigan based, existing solar ordinances, and provides local governments with sample language that each jurisdiction can customize to suit local needs. *Please consult your local legal counsel for advice on the appropriateness and applicability to your jurisdiction's zoning ordinance.*

As a guideline, the different scale of solar collection devices would be suitable for the following:

- Attached: All zoning districts
- Small Freestanding: Medium to low-density districts
- Large Freestanding: Industrial and possibly Agriculture

PURPOSE

The purpose of this ordinance is to add provisions to the Zoning Ordinance to address the permitting of small, medium, and large solar energy systems. The Ordinance recognizes the potential need for solar energy systems, while also supporting agricultural and habitat conservation. These changes are also necessary and appropriate to improve and enhance public welfare and safety, and to implement the Master Plan.

SAMPLE DEFINITIONS

GENERAL DEFINITION

Solar Collection Devices—General: Solar collection devices are designed to capture and utilize the energy of the sun to generate electrical power. A solar collection device is the actual material(s) used to collect solar rays and all associated ancillary and structural devices needed to support and convert/transmit the energy collected. These devices may be either freestanding or attached to a structure and are sized to meet the various user needs and/or utility requirements.

SMALL

Solar Collection Devices—Attached: An array of solar collection materials secured to the exterior walls or roof of a principal or accessory building and generate up to but not exceeding the manufacturer's rating of 20KW.

Solar Collection Devices—Small Freestanding: An array of freestanding (not attached to a principal or accessory structure) solar collection materials that generate up to but do not exceed the manufacturer's rating of 20KW.

SOLAR READY STEPS

Step 5: Create an Easy-to Use Permitting Process

- Provide checklist
- Expedite small systems
- Allow for online permitting
- Reduce appointment time
- Coordinate with neighbors
- Showcase successful examples
- Consider waiving/reducing fees

Tools: Sample checklists, Solar Sam Exercise

TOOL F:
SOLAR SAM EXERCISE

GOALS OF EXERCISE:

- 1 Understand what the customer experience is like now
- 2 Determine ways to improve this experience as a region

EXPLORATION OF THE CUSTOMER EXPERIENCE

Solar Sam and his three friends want to each install a 5 kW residential rooftop solar PV system (total cost approximately \$25,000) on their individual homes. Each of them lives in a different jurisdiction and has found that the levels of information vary and that the permitting processes are different. How can the jurisdictions come together to improve this experience?

This tool is to help determine differences so that jurisdictions can find ways to move forward in coordinated, regional Solar Ready approach.

Solar Sam and his friends try to access information.
When exploring a new topic, typically the first step for anyone today is to look up information on the Internet. Sam and his friends each go to each of their jurisdiction's website. They find that there is (little/ample/competing/similar?) information that specifically addresses solar. What can be done to make this information more accessible?

STEP 1

Solar Sam and his friends begin applying for permits.
When applying for permits, Solar Sam and his friends learn that some jurisdictions require their own forms and processes. What can be done to make this more consistent?

STEP 2

Solar Sam and his friends pay for permits.
The fees vary greatly between Solar Sam and his friends. For one the cost is only \$____ for another the cost is \$____. They wonder why there is such a big difference. What can be done to help explain the differences and/or make the fees more consistent?

STEP 3

Solar Sam and his friends await approval.
For several the friends, the approval process is fairly quick, but for others it takes up to _____. What can be done to make approval process quicker?

STEP 4

Solar Sam and his friends undergo inspection for the installation.
The total number of inspections for Solar Sam and his friends ranged from ____ to ____ or more and that the inspection time window was about ____ hours. Research suggests that eliminating the requirement for in-process (or "double") inspections for basic residential PV installations along with scheduling specific inspection times saves both the inspector's time as well as the time of the resident or installer. What could be done to reduce the number of inspections and focus the time of the inspection?

STEP 5

BECOMING A SOLAR-READY COMMUNITY

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SOLAR READY STEPS

Step 6: Provide Easy Access to Information

- Your stated goal as a Solar Ready Community
- A description of approval process
- Solar zoning language
- Permitting applications
- Informational resources

Tool: Outline for print and web materials

TOOL G: SUGGESTED WEBSITE AND BROCHURE INFORMATION



Copies of this logo can be attained from Clean Energy Coalition:
<http://cec-mi.org/>

IDENTIFY YOURSELF AS A SOLAR READY COMMUNITY

- Use the Solar Ready logo to signify that you are part of the larger Solar Ready community and that you are prepared for and welcoming of solar installations
- Post Solar Ready Vision Statement
- Provide Solar Ready definition
- Offer background on why you chose to be Solar Ready

LIST PARTNERS

- Any collaborating jurisdictions
- All supporting/collaborating organizations
- Taskforce team members (if established)

PROVIDE WHO TO CONTACT

- Solar Coordinator (if established)
- Other relevant staff

EXPLAIN WHAT TO EXPECT DURING THE PERMITTING PROCESS

- Overview of process
- Application requirements
- Fees
- Timing
- Number and timing of inspections
- How to qualify for expedited permitting

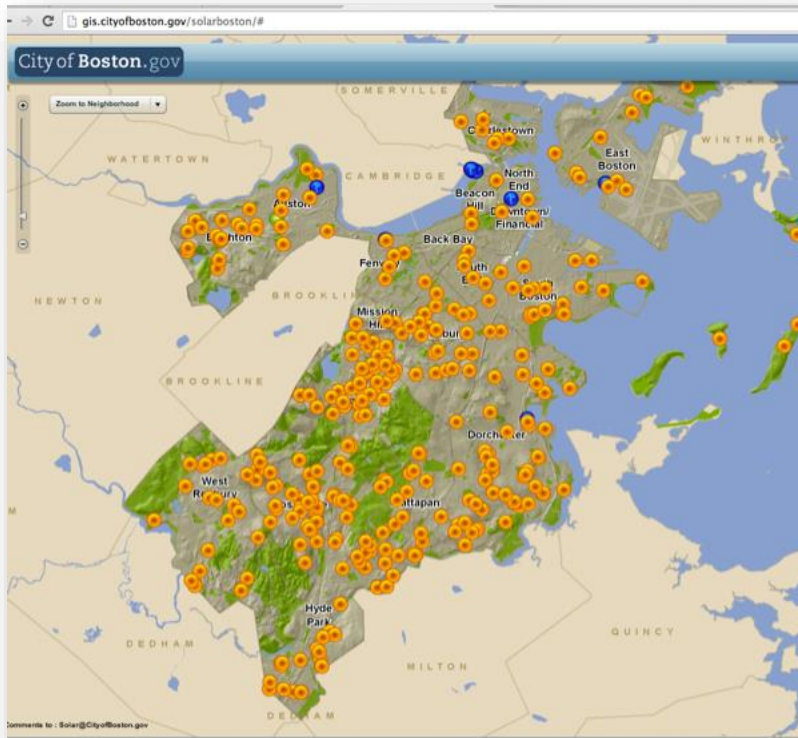
DIRECT WHERE TO FIND AND SUBMIT APPLICATIONS

- Links to all application materials
- How to submit online, if available

INCLUDE EXTRA MILE ACTIVITIES AND ONLINE RESOURCES

- Information on Extra Mile Initiatives
- Solar calculators and other tools that will be useful to the public

SOLAR READY STEPS



Step 7: Establish Solar Installation Targets

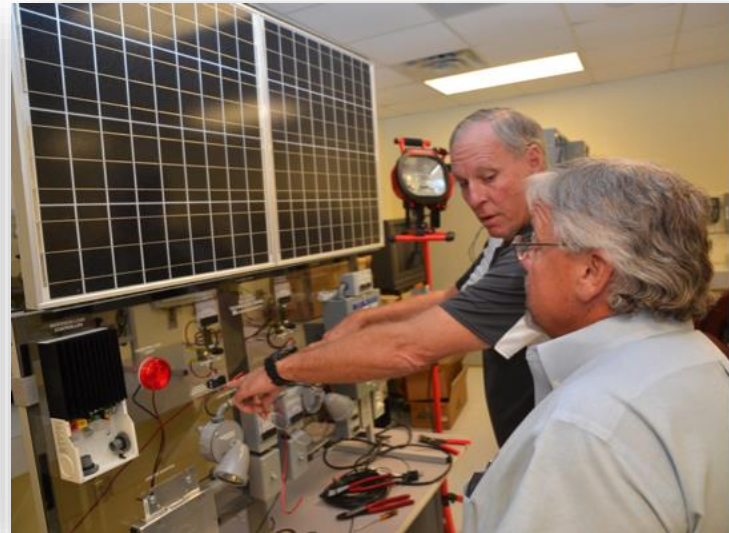
- Conduct an inventory
- Determine realistic target

Example: Boston

SOLAR READY STEPS

Step 8: Train Staff

- Planning, permitting, zoning, safety
- Work with existing institutions



SOLAR READY STEPS

Step 9: Pursue Solar Business Development Opportunities

- ❑ Manufacturers
- ❑ Installers
- ❑ Partnerships



SOLAR READY STEPS

TOOL H: ELECTRIC VEHICLE CHARGING STATIONS AND SOLAR APPLICATIONS



Increasing fuel prices, concerns about energy security, and air quality improvement goals have spurred an interest in pairing automotive technology with renewable energy sources. Plug-in electric vehicles (PEVs) offer this opportunity.

As the automotive capital, Michigan has a high interest in PEVs. A 2012 study by Pike Research showed that Michigan is ranked 7th in the nation in PEV adoption. In addition, numerous automotive suppliers that develop PEV charging stations and advanced vehicle battery technology are calling Michigan home. However, as Michigan residents take to the adoption PEVs, our state's energy sources remain primarily imported and emissions producing, which negates many of the benefits that PEVs have to offer.

To help move away from imported energy and capitalize on the clean mobility potential that PEVs provide, charging stations can be coupled with a renewable energy source. The following case studies provide two successful examples of a renewable energy/charging station application in Michigan.

Western Michigan University

In an effort to green its fleet, Western Michigan University (WMU) purchased five electric vans, a hybrid-hydraulic bucket truck, and a 50-kilowatt (kW) photovoltaic (PV) array with 15 charging stations in 2012. WMU's purchase was made possible through a grant by the U.S. Department of Energy's Clean Cities program.

The PV system at WMU consists of 18 adjustable arrays that are each made up of 12 230-Watt panels (totaling 50 kW). The PV system converts the sun's energy into electricity and sends this electricity to the WMU electric grid. WMU receives this energy and provides electricity to the vehicle charging stations 24 hours a day.

The University's electric vehicles currently operate on WMU's campus and wherever the University conducts business. To date, the vehicles have traveled 31,631 miles total. The solar panels generate enough energy each day, on average, to fully charge approximately 11 Chevrolet Volts, 7 Nissan Leafs, or 6 Azure Ford Battery Electric Transit Connects. The 15 WMU charging stations are available for any electric vehicle owner to use.

To learn more, visit: <http://www.wmich.edu/sustainability/projects/electric-vehicles>

Lansing Board of Water and Light

In April 2013, the Lansing Board of Water and Light (LBWL) installed a solar carport as a demonstration project to study charging electric vehicles via a solar array. The carport consists of a 5-kW grid-tied solar array with two publicly available electric vehicle charging stations. The carport, located at the riverside City Market, is a modular aluminum structure designed to be waterproof and fully wind, snow and seismic code compliant. The project was funded through the U.S. Department of Energy.

As the
electrical
grid in
Michigan
becomes
cleaner, so
will the
miles driven
by a PEV.

Step 10: Go the Extra Mile

- Bulk purchasing programs
- Collaborate with organizations & jurisdictions
- Community solar
- Education
- Lead – install on public buildings

Tool: Your colleagues

3. Who Is Getting Solar Ready



WHO'S GETTING SOLAR READY?

City of Dearborn

Why:

- Views as placemaking mechanism
- Good PR
- The right thing to do

What:

- Passed solar ready community resolution
- Installed solar on parking garage
- Working through master plan and zoning ordinance



WHO'S GETTING SOLAR READY?

City of Eaton Rapids

Why:

- Views their electric utility as a great way to take local control of their energy choices.

What:

- Installed 535.5kW at capped landfill generating solar for the City.
- Energy Smart program for Electric Department.



WHO'S GETTING SOLAR READY?



City of Rochester Hills

Why:

- Want to reduce municipal dependency on fossil fuels and “lead by example” in the community

What:

- Solar zoning in place
- Luma Resources, Rochester Hills manufacturer – 12 year tax abatement



WHO'S GETTING SOLAR READY?



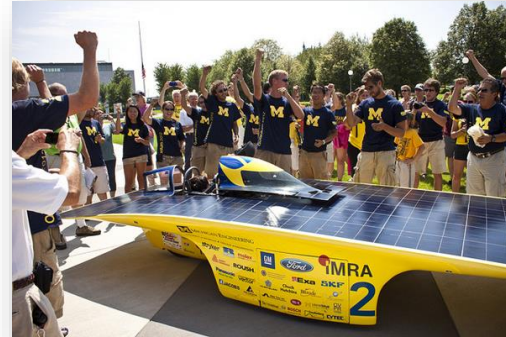
City of Ann Arbor

Why:

- Supports City's Climate Action Plan
- Strong citizen and institutional backing

What:


- Solar Plan
- Solar on municipal facilities
- Solar Ready Community Resolution
- Support for Solar Aggregation program



WHO'S GETTING SOLAR READY?




City of Ann Arbor

 Geostellar


Step 1: Enter your street

CONSOLE | CURIOUS | CONTACT | SIGN IN



A2 Solar Club

Government



1-855-982-1341
Partner code: A2
solarguides-a2@geostellar.com
[Clean Energy Coalition Home](#)
[Solar Guide](#)

A2 Solar Club

The Ann Arbor Solar Club was formed to streamline the process of helping property owners within our community switch to solar energy and propel us toward Ann Arbor's climate action goals. The program is a partnership between the City of Ann Arbor, its Energy Commission, Clean Energy Coalition and Geostellar. The target is to curb greenhouse gas emissions by 25% by 2025 by facilitating 24MW of solar installations. See how much you can save, instantly, using Geostellar's patented technology.

Generate solar energy for your home and inspire your community to follow your lead!



Go Solar!

With an instant, interactive Solar Profile for your home, you can explore equipment, financing and installation options to best meet the



Go Pro!

Earn extra income while saving the planet by introducing solar energy solutions to your friends and neighbors. We'll support you



Solar

Part

Hello! One of our Solar Guides will be in contact with you very shortly to answer...
Organizations of all types and sizes can generate new revenue streams, provide member benefits and reduce greenhouse gas emissions by



WHO'S GETTING SOLAR READY?



City of Ann Arbor

HOW IT WORKS

When you sign up for Wind Energy with Arcadia Power, you'll ensure that for every kWh of electricity you use, a kWh of clean energy is produced and put on the grid. You'll get the same reliable electricity from your local utility and a consolidated monthly statement from us. It's that simple.



Sign up for Arcadia Power online in just 3 minutes.



Arcadia Power purchases 100% renewable energy for you from our partner wind farms.



You enjoy the same reliable electricity at home while doing your part to save the environment!

WHO'S GETTING SOLAR READY?



City of Ann Arbor



YOUR FUTURE



bridging needs. advancing change.

THANK YOU & QUESTIONS

For more information on MI Renewable Energy Tools:

Visit: cec-mi.org/MIrenewable

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