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SOLAR ANN ARBOR

A PLAN FOR ACTION

EXECUTIVE SUMMARY

Prepared by Project Consultants:
CLEAN ENERGY Coalition

EXECUTIVE SUMMARY

ANN ARBOR SOLAR PLAN

Goals and Objectives

The Ann Arbor Solar Plan will build on the success of the Ann Arbor Energy Plan and Mayor Hieftje's Green Energy Challenge to prepare Ann Arbor for a sustainable energy future. Through implementing this plan, Ann Arbor will serve as a model for other communities looking to solar energy as an answer to rising energy costs, unstable energy supplies, stagnating local economies, and the negative environmental impacts of nonrenewable energy sources.

The Ann Arbor Solar Cities Partnership (SCP) is an extensive collaboration between nearly two-dozen organizations formed to apply for the U.S. Department of Energy Solar America Cities initiative. Ann Arbor was selected as a Solar America City in 2007. The project supports the Mayor and City Council's Green Energy Challenge goals of providing 20 percent of the community's energy needs from renewable sources and installing 5,000 solar roofs, while working toward the Department of Energy's Solar Program goal of making solar-generated electricity cost-competitive with conventional forms of electricity, all by 2015.

Solar Plan development began by conducting local market research to identify local benefits of and barriers to adopting solar technology. This was followed by an extensive literature review of more than 120 documents. Best practices were identified for each topic area and compared to local resources and practices. Finally, recommendations for Ann Arbor were designed based on this process. These recommendations are the heart of the Plan, and are intended to be used by city officials to reduce any barriers to solar energy growth, help craft solar-friendly incentives, and to introduce progressive solar policies.

Benefits of and Barriers to Solar

Understanding the benefits of using solar energy and barriers to its widespread adoption can guide policy and decision makers in focusing solar education and policy changes to be most effective. The benefits described in this Plan include:

- Environmental Benefits
- Public Health
- Job Creation
- Energy Security
- Economic Benefits
- Reliability

Significant barriers identified include:

- Regulations and Permitting
- Cost
- Financing
- Siting and Aesthetic Issues
- Lack of Solar Knowledge

Ann Arbor has many resources and programs that can address these barriers and promote the benefits of solar energy, which are described fully in Section 3: The City of Ann Arbor.

Best Practices

The following strategies, measures and inspiring ideas have been identified to overcome barriers to increasing the adoption of solar energy technologies. Recommendations have been made to fill in the gap between best practices and actual practices.

Rules, Regulations, and Policies

A. Public Benefits Funds - Public benefits funds (PBFs) provide resources for renewable energy, energy efficiency, and low-income programs and projects. Direct incentives and financing made available from these funds continue to spur the growth of the renewable energy market. While generally a state-level program, municipalities with authority over their electric utility can establish a PBF by adding a flat monthly fee or surcharge to the electricity consumed by their customers.

B. Permitting, Codes, and Standards - The process of obtaining permits and approvals for solar photovoltaic and solar hot water systems has been cited by solar customers and solar installers as a significant barrier to implementing projects. Best practices include enough inspection and reference standards to guarantee system performance and safety while not imposing overly burdensome or unreasonable procedures. Two specific practices that have proven helpful are expedited permitting and reduced/waived permit fees.

C. Interconnection Standards - Having different regulations based on the size of the system can prevent burdensome rules from applying to small installations. The Interstate Renewable Energy Council (IREC) has a list of model interconnection procedures that are comprehensive but not overly restrictive.

D. Net Metering - Renewable energy systems that are grid-connected can feed electricity back to the grid when a customer's energy generation exceeds their demand, growing the production of renewable energy. To encourage solar, net metering should allow for large system size limits, allow credits to carry over, have reasonable fees, and allow for meter aggregation.

E. Solar Access Laws - In order to utilize the sun for solar energy, it is essential for the property to have access to sunlight, as well as have the right to install solar systems. Solar access can be protected through solar easements, which protect access to sunlight, and solar rights, which prohibit restrictions on the installation of solar systems.

F. Building Energy Codes - Adding strong efficiency and renewable requirements to state building codes is a powerful tool governments can use to decrease energy use, increase renewable energy use, and reduce carbon emissions. Government facilities should be required to meet energy and green building standards.

G. Solar Set-Asides in Renewable Portfolio Standards - A Renewable Portfolio Standard (RPS), which requires a utility to produce a percentage of their energy generation or energy sales from renewable energy sources, should be designed to incentivize solar energy and customer- sited distributed generation. In the case of solar energy, this can include a solar set-aside.

H. Support Laws Incentivizing or Requiring Community Ownership - Laws encouraging community or local ownership of renewable energy help keep the revenues from and control of projects in the community. Almost any type of financial or production incentive can require local ownership as a condition of receiving the benefit, or it can be mandate its utilities implement special tariffs to facilitate the purchase of these projects.

Financial Incentives

A. Direct Cash Incentives - Direct incentives, whether provided by a state, utility, or a municipality, play an important role in encouraging solar installations before the technology is cost competitive with conventional forms of energy. Direct cash incentives for solar may take a variety of forms, including rebates, buy-downs, grants, and production-based incentives like feed-in tariffs. Feed-in tariffs, which require energy suppliers to buy electricity produced from renewable resources at a fixed price per kilowatt-hour, have proven to be a very successful incentive in other parts of the world.

B. Low-Interest Loan Programs - Low-interest loan programs can help ease many of the upfront costs associated with installing a solar system. While state-supported loan programs are generally utilized for projects in the non-residential sector, local and utility-run programs are aimed for residential projects. Many municipalities and counties secure favorable rates for projects by partnering with a local bank or community economic development organization. Some municipalities have also provided interest rate buy-downs to support solar projects.

C. Income/Investment Tax Credits - Tax credits can serve as a critical incentive for building owners to adopt solar technology when public benefit or direct funding sources for renewable energy projects are not available. While tax credits have generally been made

available through state policies and programs, municipalities that collect income tax can implement similar strategies to encourage solar and other renewable energy projects. Tax credits can be extended to organizations without a tax liability, like schools, nonprofits, and government facilities.

D. Property Tax Incentives - Property tax incentives provide exemptions, abatements, credits, or special assessments that mitigate or eliminate the increase in assessed value of a property (for tax purposes) attributable to a solar energy installation. The goal of property tax incentives is to bring the cost of owning a solar energy system in line with using conventional heating and cooling systems. These are helpful in areas where property tax rates are high.

E. Property Tax Financing Districts/Property Assessed Clean Energy Program - The initial investment needed to install a photovoltaic or solar hot water system remains a barrier for solar adoption. Under a Property Assessed Clean Energy Program, the cost of a solar energy system is rolled into the homeowner's property taxes. Funding for projects comes from a bond or loan fund created by the municipality that is eventually paid back through the tax assessments described above. This is valuable because much of the upfront cost is eliminated; funding approval is not based on a property owner's credit history; a well-secured municipal bond or loan provides lower interest rates; and tax assessments are transferable between owners.

Training, Education and Research

A. Training and Certification for Installers - As installers are increasingly in high demand, the need for training programs and quality standards increases. In addition to traditional credentials, such as Professional Engineer and Electrician Licensure or Certification, solar specific certification such as that provided by the North American Board of Certified Energy Practitioners (NABCEP) is also available and should be encouraged.

B. Green Collar Jobs and Solar Workforce Development - Green jobs are defined as blue-collar jobs with a "green" element, relating to careers and jobs associated with energy efficiency, weatherization, remediation / abatement, and renewable energy. Green Collar Jobs are also often focused on low income and minority populations for training and career development. Several cities across the United States have taken the lead on this and policy can easily be modeled on these efforts.

C. Training for Code Officials and Inspectors - Because solar installations remain unusual, code officials and inspectors often need additional training so they can ensure installations are safe and meet code requirements, and also so they do not unnecessarily slow down projects. Since the building code is set at the state level, ideally this training would be a statewide effort.

Outreach and Marketing

A. Use Effective Marketing Techniques in all Outreach Programs - Many solar-related public education and outreach programs are not as effective as they could be because education by itself rarely prompts people to act. In order to effectively encourage solar adoption, campaigns need to address the barriers and strengthen the benefits of adopting solar energy systems, and use effective methodologies. One such approach, community-based social marketing, uses behavior change tools that have been proven to be effective such as public commitments, social norms, and incentives. An effective program would conduct a pilot first, revise the program, roll it out, and then evaluate it to determine its impact.

B. Conduct Marketing & Outreach Campaign - As there are many myths about solar and it is a new technology to many people, conducting an effective marketing campaign would facilitate solar adoption. A comprehensive marketing and outreach campaign that intends to dispel solar myths and assist residents and businesses in installing solar would include: one easy to remember comprehensive website; targeted distribution of informational brochures for residents and businesses; regular informational workshops; a solar ambassador program; and a customer assistance program.

C. Create Visible Demonstration Projects – Demonstration projects can increase visibility and community awareness of solar energy.

Effective demonstrations are in highly visible locations and accessible to the public. The display or printed information should clearly address barriers to solar adoption and give clear information about how to go about installing a system. The energy saved and environmental benefits of these projects can be put online in a highly visible website for public access.

Recommendations

The following actions are recommended to increase the use and viability of solar in Ann Arbor. As recommendations are implemented, the best practice examples summarized above can be used as reference models. The recommendations are described in detail in Chapter 5 of this Plan along with a description of why and how, and are summarized here:

Recommendation 1: Commit to a Solar Plan Implementation Process
Create a clear plan to prioritize implementation, including creating a timeline, assigning responsibilities, and planning for follow up.

Recommendation 2: Design Municipal Solar Financial Incentives
Design municipal incentives that encourage homeowner and business installation of solar energy, working in concert with developing Ann Arbor finance programs, DTE incentives and Michigan Saves. As many effective incentives are created at the state level and by utilities, Ann Arbor should advocate for best practices at these levels.

Recommendation 3: Simplify Solar Permitting
Unwieldy permit processes have been identified as a significant barrier to solar. Taking steps to improve and expedite the permitting process and to train city inspectors can increase the speed and ease of solar project installation.

Recommendation 4: Advocate for State-Level Policy Changes
Facilitating solar adoption requires more than local law changes and programs. Advocating for changes at the state level will facilitate solar adoption in Ann Arbor and in other municipalities.

Recommendation 5: Integrate Solar into City Infrastructure and Culture
Integrate solar installations and education into municipal culture and city culture. Each of the various city agencies, authorities and departments can creatively implement the use of solar energy in different ways, and support non-municipal efforts.

Recommendation 6: Consider Solar Access Laws & Robust Building Energy Codes
Solar access laws guarantee residents and businesses access to available solar resources. On the local level, ordinances serve a very important role in guaranteeing a legal right to access. Building energy codes can guarantee desired levels of energy performance, green building, and renewable energy.

Recommendation 7: Create Solar Outreach Campaign
Implement a two-phase solar outreach and marketing campaign, using community-based social marketing principles. Evaluate each aspect to be sure that it: a) Demonstrably increases interest in solar; b) Gives concrete information about next steps; c) Demonstrably increases the number of people installing solar.

Recommendation 8: Support Solar Workforce Development & Green Jobs
Ann Arbor policies and action can support programs that help develop the solar workforce and green jobs training availability in this region, catalyzing increased employment in green industries, and increasing Ann Arbor's leadership in the renewable energy field.

Conclusions

As part of the community of Solar Cities, Ann Arbor can easily draw from some inspiring strategies and programs that have already been proven in other communities. Focusing efforts in this way is a logical first step, and reduces risks, implementation time and learning curves. This approach has been utilized in the development of this plan. Beyond the implementation of these eight recommendations, new and innovative practices should be explored. Ann Arbor, for example, has broken new ground with the installation of LED streetlights - how can it lead the way to a city powered by solar?

ADDITIONAL INFORMATION

xseed energy

Xseed Energy is a community-supported renewable energy program that uses fundraising and grants to catalyze Ann Arbor area solar energy installations. Xseed is designed to address the fact that many residents of Ann Arbor do not have the opportunity to install their own solar energy—either because they rent, do not have a suitable site, or cannot afford a full-scale installation. Xseed Energy provides a means for those residents to support local renewable energy development by donating to a community installation.

A first round of applications was reviewed in early 2010, and the xseed energy advisory board selected the Michigan Theater for the initial installation based on the following criteria:

- **highly visible** within the City of Ann Arbor
- **educational –** demonstrate viability & relevance
- **revenue sharing –** financial incentives recycled into 'solar' bank
- **fund raising** through community support for local renewable energy
- **feasibility –** good solar access & ease of installation
- **replicability–** easily envisioned at other sites

As of September 2010, fundraising for the Michigan Theater solar installation is underway and the proposal has already received unanimous Historic District Commission approval.

Xseed Energy is managed by the nonprofit Clean Energy Coalition. For more information on xseed, contact Project Manager Bonnie Bona at bonnie@cec-mi.org or visit xseedenergy.blogspot.com.

Lessons Learned

Some of the learning experiences from the development of the Ann Arbor Solar Plan may be of value to other communities, such as:

- Focus on best practices from other cities, and compare them to local policies and practices to develop recommendations to close this gap.
- Use stakeholders to prioritize and vet the full list of recommendations to: (1) prioritize actions and (2) reach consensus on solar priorities for the community.
- Conducting interviews and discussing recommendations will have as large an impact as the report itself.
- Determine who will be using the report (and how) so that you can tailor the amount and format of the information to this group.

Contact Info

For more information, including the full Solar Plan, visit the Ann Arbor Energy Office website at www.a2gov.org/energy, or contact Energy Programs Manager Andrew Brix at energy@a2gov.org.