# SOLAR TOOLKIT COMMUNITY ENGAGEMENT & MUNICIPAL LEADERSHIP STRATEGIES

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This document is part of the Solar Friendly Municipalities Toolkit. The Toolkit provides municipalities with information to install solar PV on their facilities, reduce permitting and tax barriers to solar PV in their communities, and engage community members on the benefits of producing power



Municipal Climate Change Action Centre

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# **KEY INFORMATION AND HOW TO READ THIS DOCUMENT**

Municipalities have a leading role to play in supporting and guiding the development of solar PV projects with the support of community members, solar industry and electric utilities. This document is organized by key engagement tactics with examples from across Alberta, Canada, and around the world. It also shares some municipal leadership strategies that can be used to demonstrate the benefits of solar PV.

**Information portals with online tools and maps** — These tools provide citizens with the necessary information to assess their options for solar PV projects, learn about the permit process and incentive programs, and contact installers for quotes.

**Publications** — Factsheets, brochures and other hard-copy materials with key information should be readily available at municipal and community events.

**Marketing** — Traditional and social media should be used to attract attention to solar PV success stories, incentive programs and tools and information available to the community.

**Open houses and workshops** — Events help address local concerns, share solar PV truths and debunk myths. They also are great venues for building new relationships and launching new projects.

**Workforce training and education** — Working together with the solar industry, municipalities can help prepare their workforce for more solar PV projects with local training and education.

**Programs and supporting offices** — Municipalities can design their own incentive programs and make municipal staff available to support citizens and businesses in developing solar PV projects. They can also build regional partnerships with economic development organizations or rural electrification associations.

**Municipal leadership strategies** — Municipalities are best positioned to demonstrate the benefits of solar PV to their community as part of a community energy transition strategy. This is all part of an integrated climate change action plan that includes building local government capabilities through education and awareness.



# **INTRODUCTION**

Municipalities have a leading role to play in supporting and guiding the development of solar PV projects to foster an environmentally and economically sustainable community. Solar energy can provide safe, clean, affordable, and local electricity to power homes, businesses and community buildings. The municipality's role can take many forms including ensuring that permitting processes are solar-friendly (as described in the Solar Toolkit document *Best Practices for Permits, Taxes and Solar Access*), and leading by example, with direct installations of solar on municipal buildings (as described in *Solar PV Basics: Technology, Installation Process & Cost*). But municipalities can go beyond these two key roles to engage with the community and harness the numerous resources that communities can provide. Municipalities can also integrate solar as part of their broader sustainability strategies and initiatives.

This document explores the leadership role of municipalities and shares community engagement tactics illustrated with examples from Alberta, elsewhere in Canada, and around the world. Not all of the ideas discussed here may be applicable to every community. Nevertheless, ideas may serve as a starting point, and inspiration, for home-grown activities.

#### Where to get additional help?

These groups can provide guidance on how to engage with your community on solar energy.

Municipal Climate Change Action Centre www.mccac.ca 1-780-433-4431 Solar Energy Society of Alberta www.solaralberta.ca 1-780-443-7788 Alberta Solar Co-op albertasolarcoop.com

# **ROLE OF THE MUNICIPALITY IN SOLAR PV ENGAGEMENT**

Municipalities have a variety of roles to play in supporting a market for solar PV in their communities beyond direct installation and ensuring that permitting processes are solar friendly. By successfully supporting a solar PV market, municipalities enable their citizens through capacity building and education to produce their own power; they enable economic development opportunities for solar installers and solar businesses to grown in the community; and they make progress towards achieving climate and other environmental goals.

Municipalities are uniquely capable to lead because of the close relationship they have with their citizens, and the direct responsibility they have to ensure the sustainability, health, and liveability of their jurisdictions. This role is increasingly recognized with many cities leading the way on climate change action around the world.



# **Enabling citizens**

Individuals within the community can benefit from installing their own solar PV systems allowing them to produce low-carbon electricity and providing stable electricity prices. Solar PV owners also benefit indirectly from increased knowledge and understanding of the electricity sector, allowing them to participate more fully in the important conversations around energy that are happening across the province today.

# **Enabling economic development**

The positive economic impact from solar PV development is growing in municipalities around the world. The United States added 50,000 new solar jobs in 2016 and the rate of new solar jobs has increased by 20% per year for the last four years.<sup>1</sup>

# Meeting climate and environmental goals as part of a broader energy transition vision and strategy

Because of their close interaction with citizens, municipalities are on the front line of enabling the energy transition. Many have aggressive targets for climate and environmental action, but have a limited amount of energy and land use under their direct control over is limited, so they must engage citizens to meet these goals.

Developing a clear vision for solar PV can create an anchor-point for collaboration with key players in a solar strategy, which may later be rolled into a broader energy transition strategy for the community. Such a strategy may include addressing energy efficiency opportunities in buildings and transportation, developing several local renewable resources, and supporting a local clean technology sector. While addressing energy efficiency is foundational to an energy transition strategy, solar PV adds visibility to these activities, which are otherwise hidden within public infrastructure, buildings, and facilities.

# ENGAGING COMMUNITIES THROUGH CAPACITY BUILDING AND EDUCATION

A lack of accessible and easy to understand information is a big barrier to solar PV project development, along with lack of capacity for action. Municipalities can build strong support for solar PV by emphasizing capacity building among key players. While a network of solar installers is needed to meet market demand, education and capacity building should first and foremost emphasize spurring interest and market demand among community members.<sup>2</sup> This should include basic energy literacy and understanding of solar PV technology benefits and local opportunities.

# **Demonstration projects**

Municipalities can educate by demonstrating different types of solar PV projects and the value of these projects on public buildings and infrastructure, showcasing innovative applications of the technology and making them highly visible to the public. Success and lessons learned from these projects should be shared.



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<sup>&</sup>lt;sup>1</sup> The Solar Foundation, *National Solar Job Census* (2016).

http://www.thesolarfoundation.org/national/

<sup>&</sup>lt;sup>2</sup> Jordan Weber, personal communication, October 25, 2016.

#### Success stories and lessons

Success stories and lessons learned from these projects will help reduce future costs and remove foreseeable barriers. These stories may capture one or more of the following aspects:

**Technology and cost** — Provide a basic understanding of solar PV technology, including types of installations and assessing solar PV readiness. Activities include solar resource assessments, identifying space requirements for solar PV on roofs and grounds, and obtaining quotes from installers.

**Permitting** — Municipal solar PV projects need to apply for the same permits as private project developers, but municipalities can pilot new streamlined permit and approval processes for their own projects.

**Grid connection** — Developing a positive working relationship with the local electric utility removes barriers and lowers soft costs of project development. Both parties should be informed about changes to the permit processes and connection procedures of solar PV systems. Stakeholders to consult are fire, building and electrical inspectors and electric utility agents.

# Town of Vulcan's Solar Park

The Town of Vulcan is using innovative solar PV designs that integrate modules into public art resembling trees and other artistic forms. The project aims to inform and spark interest among community members in solar PV technology. Accompanying the project are workshops, courses and a design challenge for the local high school.<sup>3</sup>



Photo: David Dodge, Green Energy Futures



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<sup>&</sup>lt;sup>3</sup> Town of Vulcan, Kyle Greene, *Vulcan Solar Park* (2015); Green Energy Futures, "153. Vulcan builds Canada's first solar park," September 5, 2016. <u>http://www.greenenergyfutures.ca/episode/vulcan-solar-park</u>

Innovative solar PV projects, or those that make a substantive contribution to the community, should also be recognized with public announcements or awards. Success stories play an important role in each of this document's engagement tactics. When solar PV is installed on public buildings, it should be accompanied by information kiosks, displays or online monitors that showcase the benefits of solar PV. Those benefits are not only local electricity production, but also economic returns, emissions reductions and the collaboration of community partners.

#### Solar production and information on public buildings

The Town of Banff and Starland County make local solar energy production data available online and on a building display, helping visitors understand the operation and benefits of a solar PV installation. Solar PV on public washrooms (as in Banff), schools and libraries can make systems much more visible.



Photo: Shannon Ripley, Town of Banff

# Information portals with online tools and maps

Online material should provide clear information on solar resources, such as electricity production potential from solar PV systems per property, local incentive and program information, applicable policies and regulations, and how projects are permitted and approved. One such example is the web application made for calculating project-level economics made available with this toolkit. The online information should be accessible through a single website.



# **Starland Solar Initiative**

Starland County in Alberta has been engaging community members on solar PV technology for a long time.<sup>4</sup> They started 10 years ago with a 10 kW demonstration project, and broadened their efforts to include a solar incentive program to help lower financial barriers. They also host a website that shares many supporting materials on solar PV benefits, how to analyze a project's payback and help with funding agreements.



# Permitting and approval processes

A municipal website on solar PV should, at minimum, clearly communicate the permit process for a solar PV installation, its inspection requirements and steps to connecting systems to the electricity grid. A complete website includes project guidance with typical steps customers take from initial interest to selecting a solar PV site, obtaining quotes from installers, arranging finances, permitting, inspection and installation. See the Solar Toolkit document Best Practices for Permits, Taxes and Solar Access for permit best practices.

# Maps

Interactive online maps can track solar installations and help potential customers determine their local solar resources. These tools could include a scan of rooftops on the property, suggest a solar PV system size, and in some cases, allow users to refine the system, re-arrange PV modules, enter their electricity charges, and work out high-level cost and paybacks. Some mapping tools also directly connect customers with local certified, or vetted, solar PV installers.

Developing a solar map from scratch is beyond the resources of most municipalities, but other options are available using pre-built online platforms. Examples include Google Sunroof and Mapdwell that use locally sourced data to build a highly interactive map. Local governments may also choose to collaborate with each other to develop one map for several locations.



<sup>&</sup>lt;sup>4</sup> Starland County, "Starland Solar Initiative." <u>http://www.starlandsolar.ca/</u>

## New York City Solar Map

New York City's Office of the Mayor partnered with the City University of New York and the city's Economic Development Corporation to develop an online portal centred around a solar map for the city and surrounding region.<sup>5</sup> This portal not only allows interested customers to identify solar PV project opportunities and customize and evaluate economics, it also offers a plethora of information about solar PV technology. The site even includes interactive guides<sup>6</sup> that support customers through the permit process.





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<sup>&</sup>lt;sup>5</sup> City University of New York, "NY Solar Map." <u>https://nysolarmap.com/</u>

<sup>&</sup>lt;sup>6</sup> NY Solar Map, "Interactive Solar Permitting Guides." <u>https://nysolarmap.com/installing-</u> solar/interactive-guides/

#### Google Sunroof and Mapdwell Solar System

Google's Sunroof<sup>7</sup> project, currently available only in the U.S., lets users enter their address and look up their home in Google Maps. It combines information with solar and cost data, and then allows for solar PV system customization. The project uses sophisticated models to account for shading from nearby buildings and trees, even historical clouds. Mapdwell's Solar System<sup>8</sup> is another powerful tool for mapping solar, operating similarly to Google's Sunroof project.



The City of Calgary recently published an online solar map.<sup>9</sup> However, the map does not provide further info beyond high-level solar resource potential.

While solar maps make it easier for citizens to identify solar potential, these tools can also be used by municipalities to assess feasibility of achieving their solar vision, identify programs based on high potential solar areas, and monitor implementation effectiveness.



<sup>&</sup>lt;sup>7</sup> Google, "About Project Sunroof." <u>https://www.google.com/get/sunroof/about/</u>

<sup>&</sup>lt;sup>8</sup> Mapdwell, "Solar System – work with the sun." <u>https://www.mapdwell.com/en/solar</u>

<sup>&</sup>lt;sup>9</sup> City of Calgary, "Solar Potential Map." <u>https://maps.calgary.ca/SolarPotential/</u>

# Calculators

In the absence of a solar map that may be difficult and costly to develop, a municipality can make a solar calculator available online to help customers estimate size, cost and payback on a solar PV system. This Solar Toolkit makes available a detailed web application for calculating project-level economics.

# Solar Toolkit Calculator

As part of the Solar Toolkit, an on-line solar PV economics calculator has been developed to assist project planners in municipalities and the solar industry in Alberta to assess the feasibility of projects using Alberta-specific analysis. The calculator will help users compare the cost of proposed grid-connected solar PV projects to the cost of purchasing electricity from the grid. The tool allows users to estimate yearly cash flow with and without a solar PV system and compare the total net present value of each option over an analysis period. Unlike many other solar PV calculators, this tool has been made in Alberta specifically for Alberta users and matches the province's current deregulated rate structure for residential, small commercial, and large general service customers.

The calculator is available here <u>https://mccac.ca/solar-calculator/#pv</u>.

# On-Farm Solar Calculator<sup>10</sup>

The Government of Alberta's Growing Forward 2's On-Farm Solar Photovoltaics program provides an Excel-based tool for calculating economic return on a solar PV system installed with program support.

# **PVWatts**

The U.S. National Renewable Energy Laboratory has built a solar calculator, PVWatts, <sup>11</sup> that functions similarly to a solar map; however the calculation does not account for local shading of adjacent buildings, trees, etc. But it is an excellent and easy-to-use tool for calculating the

<sup>10</sup> Government of Alberta, Agriculture and Forestry, "Growing Forward 2: On-Farm Solar Photovoltaics." <u>https://www.alberta.ca/on-farm-solar-photovoltaics-program.aspx</u>



<sup>&</sup>lt;sup>11</sup> National Renewable Energy Laboratory, "PVWatts Calculator." <u>http://pvwatts.nrel.gov/</u>

economics of a solar project given basic assumptions such as solar PV system cost and local electricity rates.

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# Connecting customers to installers

#### **Alberta Solar Providers Directory**

The Solar Energy Society of Alberta has compiled an extensive list of companies that install solar PV systems in the province. The directory includes basic information for each company such as solar services provided, service area, years in business, number of systems installed, credentials, project case studies and business contact information, as well as an Alberta Solar Systems Gallery featuring photos and "lessons learned" from 136 systems. Alberta's On-Farm and Indigenous Solar incentive programs require projects to be installed by one of the list's providers. The website includes information on how to choose a solar provider, a solar glossary, industry best practices, a job board, a province wide calendar of solar events, and FAQ.<sup>12</sup>



<sup>&</sup>lt;sup>12</sup> Solar Energy Society of Alberta, "Alberta Solar Providers Directory." <u>https://solaralberta.ca/directory/alberta-solar-providers</u>

#### **Ontario Solar Installers and Clean Energy Project Builder in Minnesota**

Ontario Solar Installers<sup>13</sup> help connect solar PV installers and customers in the Ontario solar industry. The website offers information on solar PV, but more importantly allows customers to obtain initial quotes from multiple solar installers, facilitating the first step in comparison shopping for a system that meets their needs. Clean Energy Project Builder in Minnesota<sup>14</sup> offers similar comparison services, but also shares a searchable listing of projects and resources to help solar PV system shoppers.



<sup>14</sup> Clean Energy Project Builder, "What is Clean Energy Project Builder?" <u>http://www.cleanenergyprojectbuilder.org/about</u>



<sup>&</sup>lt;sup>13</sup> Ontario Solar Installers, "Request Free Quotes." <u>https://ontario-solar-installers.ca/request-free-quotes/</u>

# **Publications**

Publications such as fact sheets, brochures and guides communicate to community members basic information about solar PV, its benefits and how to navigate the municipality's permit and approvals process. They may also provide information on local programs and initiatives, such as rebates, production incentives and community project funds.

Once developed, materials can be distributed by:

- *Working closely with installers* Share factsheets and solar guides with installers; use their input to refine content such as information on local install options, grid-connection or cost.
- *Posting them online* Share materials using online portals (like those above).
- Sharing them at workshops, education events and community open houses Share installer literature to showcase their projects and expertise.
- *Webinars* Offer online seminars with open invitations to the community, including homeowners, small businesses, community associations or leagues, and non-profits.

Several municipalities and regional governments have prepared guides to help property owners, renters, businesses and community-related organizations with developing their own solar PV projects. These guides:

- Outline the project development process Steps include first contact with renewable energy companies through to contract negotiation, construction, operation and ultimately, decommissioning or replacement.
- Assist with ownership and financing Provide information to communities and solar industry on how to structure their ownership, financing and investment in projects.
- *Build strong relationships* Create a positive environment for community members to engage with solar PV installers.

NY-Sun Solar Guidebook,<sup>15</sup> Residential Customer Guide to Going Solar,<sup>16</sup> Iowa Energy Center's Solar PV Energy Guide,<sup>17</sup> and NREL's Get Your Power from the Sun<sup>18</sup>

Several guides were published by municipalities with support from the U.S. Department of Energy's SunShot program, and others by state-level solar industry, non-profit and economic development organizations. These guides provide basic information on solar PV technology and support for customers wanting to install their own system.



<sup>&</sup>lt;sup>15</sup> New York State Energy Research and Development Authority, *NY-Sun Solar Guidebook* (2016), <u>https://www.nyserda.ny.gov/-/media/NYSun/files/solar-guidebook.pdf</u>

<sup>&</sup>lt;sup>16</sup> North Carolina Solar Center, *A Residential Customer Guide to Going Solar*.

https://nccleantech.ncsu.edu/wp-content/uploads/2018/06/Duke-Energy-Carolinas-Solar-Guide-FINAL-3.pdf

<sup>&</sup>lt;sup>17</sup> Iowa Energy Center, *Solar PV Energy Guide* (2016). <u>http://www.iowaenergycenter.org/wp-</u> <u>content/uploads/2016/03/15302\_IEC\_SolarEnergyGuide\_Web.pdf</u>

<sup>&</sup>lt;sup>18</sup> NREL, Get Your Power from the Sun (2003). <u>http://www.nrel.gov/docs/fy04osti/35297.pdf</u>



# Marketing

A media campaign, including electronic and traditional newsletters along with paid advertisements in local newspaper, radio and/or television, can direct community members to organized events, make use of online portals, or contact local solar installers for solar assessments and install quotes. Strong campaigns use consistent branding and have a good local presence.

Community-based approaches to marketing include partnering with local non-profit organizations, libraries and community associations or leagues. These can help build a good reputation for solar via their existing events, billboards or newsletters.

AgTalk Newsletter in Starland County and paid advertisements in Solar Salt Lake (City) Partnership

Starland County contributed articles to the local AgTalk newsletter to communicate opportunities and benefits of solar PV with local farmers. The county identified farmers as a target audience for solar PV because they are business-minded, have access to affordable debt and are willing to make relatively large up-front investments.

In the U.S., Salt Lake City's solar partnership used traditional advertising to launch programs and direct citizens and key industry players to websites and events showcasing the solar implementation plan.



# **Open houses and workshops**

Workshops and open houses offer an opportunity to address local concerns and solar PV truths and myths, and provide understanding of specific barriers for developing projects. Participating in these dialogues help guide your strategies and develop the right programs and projects.

Events are good avenues to meet builders, residents and businesses who install solar PV; they might also target specific demographics and sectors, such as low-income housing. They are also opportune moments to recognize and award projects that use innovative designs and go above and beyond when engaging with the community.

Libraries, and community associations and leagues, are great venues and potential partners for hosting and organizing these solar PV events.

## EcoSolar home tour, Edmonton

Solar home tours are a popular way to connect the general public to system owners and installers. Alberta has a great home-grown example. For the past seventeen years local volunteers have created tours of Edmonton homes and businesses showcasing the latest in solar technologies and energy efficiency in action. Free to the public this annual 1-2 day event is supported by local businesses and the City of Edmonton. The 2016 tour included 3,153 individual site visits.<sup>19</sup> The tour provides practical examples to educate homeowners on how they can install solar.

# Solar Now! Portland, Oregon

The City of Portland, Oregon has partnered with Oregon's state energy department and Solar Oregon to host community education events to help grow market demand for solar PV and share best practices.<sup>20</sup> Solar Oregon organizes tours, hosts workshops and advocates for pro-solar policies to help homeowners and communities navigate and accelerate the development of solar energy.

# **Starland Solar Initiative**

Starland County uses workshops to share impartial solar PV technology information with local farmers and residents. Informative sessions are well received and a preferred alternative to trade shows and industry events. The workshops also encourage farmers to ask questions and develop a positive relationship with the electric utility company, ATCO Electric.<sup>21</sup>



<sup>&</sup>lt;sup>19</sup> Eco-Solar Home Tour, "Home-Tour". http://www.ecosolar.ca/open\_houses.html

<sup>&</sup>lt;sup>20</sup> Solar Oregon, "About Solar Oregon." <u>http://solaroregon.org/about-solar-oregon/</u>

<sup>&</sup>lt;sup>21</sup> Jordan Weber, Starland County, personal communication, October 25, 2016.

# Workforce training and education

## **Developers and installers**

It is important to develop a community's capacity to install and maintain solar PV systems once there is sufficient demand. Easily accessible education and training programs will grow a pool of trained solar installers.

Alberta has several options for solar PV education and training (see below examples). While municipalities may wish to develop their own unique blend of content and local programs, this may not be possible for smaller municipalities. In this case, it is still useful to communicate training and education opportunities available elsewhere in the province — or, better yet, to partner with existing programs and make them available to the community.

#### Solar Energy Society of Alberta: seminars and classes<sup>22</sup>

In partnership with MacEwan University and SAIT the society hosts a series of free monthly solar energy seminars. These events address timely technical and policy topics, highlight project success stories and serve to connect those interested with installers and industry experts. The SESA website has a library of the seminar PowerPoint presentations spanning the last eight years. The organization also offers classes and other educational events for both the solar industry and the general public in Edmonton and Calgary.

Several other local businesses also offer both theory and hands-on classes as well.



Figure 9: GridWorks hands-on solar PV training Photo: GridWorks Energy Group



<sup>&</sup>lt;sup>22</sup> Solar Energy Society of Alberta, "Learn about solar." <u>https://solaralberta.ca/learn</u>,

## NAIT's Alternative Energy Technology program

The Northern Alberta Institute of Technology's Alternative Energy Technology program educates students on how to design and apply sustainable energy solutions that meet the needs of society.<sup>23</sup> It draws a large variety of passionate students, many of whom become entrepreneurs and community leaders.



Figure 10. Students at NAIT's Alternative Energy Technology lab Photo: David Dodge, Green Energy Futures

Education and training programs may also choose to directly target underemployed communities with innovative curricula that support local economic development.

# Solar Richmond, green collar job creation

Solar Richmond is a non-profit organization that offers vocational training and leadership development in Richmond, California.<sup>24</sup> These programs are available for free to underemployed and low-income residents, aiming to revitalize the local economy by supporting needed technical skills development and entrepreneurship. Students work with local solar installers to build projects and install systems on low-income housing.

# Skills gap and training assessment

The City of Toronto commissioned a study of training initiatives available within the Greater Toronto Area in support of building a green economy and local green-collar job creation.<sup>25</sup> The assessment contains a directory of courses, programs and workshops on renewable energy, including solar PV. Such a reference makes it easier to find local opportunities for solar skills development and education.



 <sup>&</sup>lt;sup>23</sup> NAIT, "Alternative Energy Technology program." <u>http://www.nait.ca/program\_home\_76007.htm</u>
<sup>24</sup> Solar Richmond, "About Solar Richmond." <u>http://solarrichmond.org/about-us/</u>

<sup>&</sup>lt;sup>25</sup> City of Toronto, Solar Training Initiatives Reference Guide (2011).

https://www1.toronto.ca/static\_files/economic\_development\_and\_culture/docs/Sectors\_Reports/ SolarTrainingTorontoJan-11.pdf

# **Municipal staff and inspectors**

To ease the permit and approval process for solar PV systems, municipal staff need a basic understanding of the technology, its benefits and costs, and its role in addressing the community's energy needs and sustainability goals. Internal workshops and specifically designed training courses will help build basic capacity among staff members.

# NY-Sun PV Trainers Network

NY-Sun's PV Trainers Network offers a series of courses and workshops to educate and inform local government, with an emphasis on reducing barriers to solar PV project development.<sup>26</sup> Curricula cover permit and approval processes, system installation and inspection. They target local policymakers, inspectors, engineers, real estate developers, architects and safety officials.

# **Programs and supporting offices**

Municipalities can help communities develop solar PV projects by establishing a local presence through supporting offices and programs. Where the following ideas are not all be feasible for smaller local governments with limited resources, these may choose to work together at a regional level. Municipalities can also collaborate with a regional organization, e.g. rural electrification or regional economic development organizations.

*Free advice and expertise* — Municipalities can either provide in-house support for customers who want to install solar PV, or partner with experts to answer questions about solar and guide project development. These services, through a program or supporting office, are impartial and provide a go-to source of trusted information.<sup>27</sup>

# Partnering with local experts in California and Wisconsin

The City of Berkley, California, sourced solar PV expertise from the non-profit Community Energy Services Corporation to advise customers on siting and technology choices and help build basic energy literacy among citizens. Madison, Wisconsin, also partnered with experts, hiring Midwest Renewable Energy Association to provide impartial advice to residents and businesses. The association's 'Grow Solar' includes free site surveys, solar assessments and solar installer price quotes.<sup>28</sup>

*Removing permit barriers* — Local incentives may include waiving permit fees, although these fees have only a small effect on overall project economics. Reducing permitting barriers by easing or removing some requirements is even more effective.

<sup>26</sup> NY-Sun, "PV Trainers Network: Benefits of Training and Education." https://training.nysun.ny.gov/why-training-and-education



<sup>&</sup>lt;sup>27</sup> American Planning Association, *Solar Community Engagement Strategies for Planners,* Solar Briefing Paper 1 (2013), 8. <u>https://planning-org-uploaded-</u>

<sup>&</sup>lt;u>media.s3.amazonaws.com/publication/online/Solar-Community-Engagement-Strategies.pdf</u> <sup>28</sup> Midwest Renewable Energy Association, *Grow Solar*. <u>http://www.growsolar.org/</u>

*Production incentives and rebates* — An incentive for local solar PV generators helps reduce the payback period of capital investments and generates more consistent revenues. The incentive may be adjusted to account for changes in the electricity rate, like the Town of Banff's Solar PV production incentive.<sup>29</sup> Or it may involve installation rebates, as in Starland County.<sup>30</sup> The Government of Alberta also funds solar PV rebates for Alberta municipalities and schools.

#### Alberta Government solar incentive programs

Alberta Municipal Solar Program — Rebate program for projects built and funded by Alberta municipalities and community-related organizations on public buildings or land. http://www.mccac.ca/programs/AMSP

Solar For Schools - — Rebate program for projects built and funded by Alberta Public, Charter, Separate, and Francophone School Authorities on school buildings or land. <u>http://www.mccac.ca/programs/SFS</u>

# **INTEGRATING SOLAR INTO BROADER ENERGY STRATEGIES**

Solar PV can be a key part of a municipality's energy strategy as part of a broader approach to climate change action including managing government energy use and greenhouse gas emissions.

# Solar PV as part of climate change action

Local government can take a leadership role in addressing climate change, while also hedging cost risks through best practices in energy and emissions management. This means going beyond business-as-usual operations and proposing alternatives that reverse trends of higher energy use and costs and steadily growing environmental impact. These alternatives can help establish new priorities for local government to achieve more sustainable and efficient operations, and provide insights into important decisions for years to come.

## Edmonton's Community Energy Transition Strategy

Edmonton's strategy is designed to position the city as a capable participant in the energy transition, which is described as a historic economic development opportunity. The strategy identifies several courses of action hinged on managing risk, which includes acting to reduce reliance on fossil fuels and their volatile prices, avoiding contributions to climate change, and improving regional air quality by using cleaner sources of energy like solar PV. This mandate is supported by several courses of action from 2014 to 2021, including tactics that encourage uptake of solar PV with supporting programs and a fast-track process for permitting systems.<sup>31</sup>



<sup>&</sup>lt;sup>29</sup> Town of Banff, "Solar Photovoltaic Production Incentive." <u>https://banff.ca/solar</u>

<sup>&</sup>lt;sup>30</sup> "Starland Solar Initiative."

<sup>&</sup>lt;sup>31</sup> City of Edmonton, "Edmonton Community Energy Transition Strategy."

https://www.edmonton.ca/city\_government/environmental\_stewardship/energy-transition.aspx

# Amsterdam Solar Vision 2013

The City of Amsterdam has established a lofty goal of having at least 45,000 homes generating electricity from their own solar PV systems by 2020 for a total of 160 MW of solar PV installed. This goal is based on a careful analysis of available roof space (11 km<sup>2</sup>) that can host solar PV systems. The goal is supported by public communication, knowledge sharing, lobby activity with regional government, and financing, and generally by exposing residents to solar PV projects.<sup>32</sup>

It is important to integrate solar PV demonstration projects into existing local improvement plans, including building energy efficiency retrofits and waste, water and transit infrastructure investments. Of course, decisions to replace or retrofit assets should always account for all lifetime operations and maintenance costs. So when facilities and buildings are due for upgrades and renovation, decisions should address how to reduce energy use and lifetime, also called 'life cycle,' costs. This includes identifying all local options for clean energy, including solar PV.

Best practices address behavioural, organizational, and technology management, all of which aim to 1) lower cost of energy, 2) minimize exposure to energy price volatility, 3) increased staff productivity and 4) strengthen government social responsibility.

Another layer of engagement that can build strong and long-term relationships with citizens uses new "smart city" approaches. These use social media and online crowdsourcing platforms to collect ideas and facilitate citizen innovation. Engaging citizens with solar PV projects in this way is one of many ways to make a smarter city and give citizens a voice in local government. "Smart" high-tech solutions can also be effectively combined with physical spaces designed to bring together key players, encouraging them to collaborate around new solutions. Players include utilities, regulators, municipal planners and policymakers, businesses, citizens and solar installers.

#### Smart city initiatives that connect communities

World-class examples of smart cities include Barcelona, New York City and Amsterdam. These city governments use online and physical spaces to connect with citizens, and then deliver better services such as transit<sup>33</sup> and healthy and resilient communities<sup>34</sup>. In Calgary, Civic Innovation YYC<sup>35</sup> is a platform for involving citizens in developing new project ideas and initiatives. Projects could address themes such as climate change mitigation and developing local renewable



 <sup>&</sup>lt;sup>32</sup> Gemeente Amsterdam, Zonvisie Amsterdam: Burgers en bedrijven gaan voor de zon! (2014).
http://www.servicepuntduurzameenergie.nl/uploads/downloads/Zonvisie%20Amsterdam%2031%
20maart%202014.pdf

<sup>&</sup>lt;sup>33</sup> Laura Adler, "How Smart City Barcelona Brought the Internet of Things to Life," *Data-Smart City Solutions*. February 18, 2016. <u>http://datasmart.ash.harvard.edu/news/article/how-smart-city-</u> <u>barcelona-brought-the-internet-of-things-to-life-789</u>

 <sup>&</sup>lt;sup>34</sup> HIS, The Smart City and its citizens: governance and citizen participation in Amsterdam Smart City (2013). <a href="http://www.eukn.eu/fileadmin/Files/News/2015/20150408smartcityCCapra\_v2.pdf">http://www.eukn.eu/fileadmin/Files/News/2015/20150408smartcityCCapra\_v2.pdf</a>
<sup>35</sup> City of Calgary, "Civic Innovation YYC."

http://www.calgary.ca/CS/IIS/Pages/innovation/CivicInnovation.aspx?redirect=/civicinnovationyyc

resources like solar power. And Edmonton's smart city approach<sup>36</sup> includes projects that help the city achieve its energy transition goals, for example, Blatchford District Energy and Smart Vehicle Technology.



# **CONTACT US**

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<sup>&</sup>lt;sup>36</sup> City of Edmonton, "Edmonton: Leveraging Technology and Innovation." <u>https://www.edmonton.ca/city\_government/initiatives\_innovation/smart-cities.aspx</u>

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