



# BEYOND RENEWABLE:

Incorporating social sustainability & community  
benefits into renewable energy projects



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# INTRODUCTION

In 2016, Traverse City committed to sourcing 100% of the energy used for city operations from renewable sources by 2020. In 2018, the municipal utility Traverse City Light & Power made a similar commitment to 100% renewable sources by 2040. These declarations created opportunities for local energy project development in the region, paving the way for renewables to benefit environmental, social, and economic issues within the community.

Renewable energy projects and infrastructure are not new, but communities across the United States are still struggling to find the best models to harness this opportunity, particularly for underserved geographies and communities.



# LOCAL RENEWABLE ENERGY BENEFITS

Local energy project development in Michigan offers economic benefits, such as payments to individual landowners and tax revenue from the personal property tax on wind turbines (and in some cases solar farms). However, landowner payments can often perpetuate conflict when neighbors do not receive the benefit, while municipalities struggle to make the benefits of wind tax revenue visible enough to communities.<sup>1</sup> Tax revenue spending is often restricted to the particular millages associated with the wind and solar infrastructure, and tax codes are subject to change, making it difficult for communities to forecast those benefits in the long-run.

Research has shown that community perceptions towards local energy project development are primarily driven by two factors:

1. Compensation, or how much benefit individuals receive from the renewables development
2. Attitudes about the development process<sup>2</sup>

Furthermore, there is a preference for “community compensation” — meaning a benefit that accrues to the broader community — rather than benefits to individual landowners, and this compensation must be highly visible.<sup>3</sup> This research highlights the need for ensuring that local energy project development includes a highly visible community benefit component.

The models presented in this guide provide additional ways for communities to ensure they are receiving economic benefits from renewables development and allow for more flexibility in that spending.

1 Hoen, B., Rand, J., (January 30, 2017). Overall Analysis of Attitudes of 1,705 Wind Power Project Neighbors. [Webinar presentation]. Retrieved from [http://eta-publications.lbl.gov/sites/default/files/lbnl\\_webinar\\_attitudes\\_-\\_jan\\_30\\_final\\_013118.pdf](http://eta-publications.lbl.gov/sites/default/files/lbnl_webinar_attitudes_-_jan_30_final_013118.pdf)  
 2 ibid  
 3 ibid

To incentivize communities to explore potential local project models, the US Department of Energy launched the Solar in Your Community Challenge:

“\$5 million in cash prizes and technical assistance [to support] teams...to develop projects...that expand solar access to underserved groups, while proving [replicability].”

TRAVERSE CITY, MICHIGAN STEPPED UP TO THE CHALLENGE.

The Traverse City Rural Independence through Solar Energy (TC-RISE) project hopes to create a series of solar and efficiency success stories that will help rural and urban communities improve their homes, create jobs, and save residents money.

However, in the backdrop of this excitement, Michigan communities are finding a formidable obstacle to their own renewable development plans — their own citizens.

Take Traverse City’s neighbor, Elmwood. Elmwood initially planned to install 5MW of solar panels — largely to support Traverse City’s renewable energy goal — but, soon after the first megawatt was installed, the remaining 4MW were put on hold due to community concerns about their ability to benefit from this project.

Rather than risk similar obstacles in Traverse City, TC-RISE is proactively working to re-center its approach on the generation of community benefits alongside renewable energy. The Groundwork Center’s Dan Worth stated, “Yes, a solar array’s value can be measured in electricity produced, emissions reduced, and revenue earned. But there’s also immense value in bringing a community together to imagine and build its own energy future.”

To begin this process, TC-RISE convened a broad stakeholder committee that includes leaders from Traverse City, Traverse City Light & Power, Consumers Energy, Rotary Charities, Habitat for Humanity, the Traverse City Chamber of Commerce, SEEDS, NMEAC, Citizens Climate Lobby, the Grand Traverse Land Conservancy, and the USDA. This group met to discuss opportunities and challenges for local renewables development in the area.

Traverse City is now ready to begin making decisions about its desired energy future and renewable development. This guide is intended to support that decision-making process for Traverse City and other communities embarking on similar journeys.



# COMMUNITY BENEFITS

## WHAT ARE COMMUNITY BENEFITS?

Community benefits can be tied to any type of economic development project that involves funding from outside a local area and the use of revenue generated from the project - from real estate development to renewable energy projects. Including a community benefits component in a project plan or agreement ensures that one of the outcomes from the project, in addition to profits for the developer, will be measurable improvements in the lives of the area's residents. "Community" is defined here as all residents in a designated geography.

Community benefits schemes fall on a spectrum from providing larger direct dollar benefits to few people to providing smaller, sometimes indirect dollar benefits to many people. As illustrated below, some schemes may be easier to implement but benefit fewer people compared to more robust initiatives.

### Multiple options exist for community benefit strategies

Some strategies provide higher dollar benefits to fewer people, while others provide smaller benefits to a broader population



Your community can incorporate a community benefits component into an RFP and formal contract. This spectrum of benefits structures includes:

BENEFITS STRUCTURE	HOW DOES MONEY FLOW INTO THE COMMUNITY?	WHO OVERSEES THE PROCESS?
Direct payments to landowners	Developers pay landowners directly for use of their lands. In this case, only individual landowners receive benefits rather than the entire community.	Developer
<b>Discounted Electricity:</b> Municipal utilities to provide discounted electricity to customers who contribute space or capital for financing an energy development	Customers either own or invest in renewable sources, receiving discounts on their electricity that those sources generate. Some utilities and developers also provide advice to community members on energy efficiency, which can help reduce their energy bills.	Utility
<b>Local Employment and Procurement:</b> Developers 1) provide opportunities for employment via the development, 2) commit to using local employment and procurement for the development, or 3) offer electricity discounts in exchange for labor	Developers provide employment opportunities for community members for construction and operation of renewable sources. In one example, a 50 MW development created 48 local jobs during construction and 7 ongoing operational roles. Developers may also commit to consuming goods and services from local businesses for the duration of project development.	Developer
<b>Individual Co-ownership:</b> Individual community members or community organizations act as investors or join a cooperative to fund a development	Typically operated by large commercial wind developers, individuals buy shares in the project and are paid an annual dividend. The investment opportunity may be opened up to landowners within proximity to the development or the broader community. Some structures allow a community organization to invest, funneling dividends into that organization's priorities.	Developer in collaboration with a group or organization that oversees co-owners
<b>Community Enhancement Fund:</b> A developer establishes a fund for community initiatives, financed either through a donation or via profits from the development	Dollars fund community programs such as transportation, education, etc. within an established radius of the project.	Generally administered by a community trust organization, local government agency, or funds awarded on an ad hoc basis through a grants process
<b>Community Wholly Owned:</b> An entire community – via the city or a trust – acts as investors or join a cooperative to fund a development	This model overcomes difficulties of community organization co-ownership by allowing a community to develop a wholly-owned energy project. Finding a financial institution willing to provide debt finance to a local organization can be difficult, but some communities have pursued a co-op structure for sole ownership, similar to the co-ownership model, or leveraged municipal bonds.	Local government
Tax revenue	Tax revenues from the energy project are administered by local government to fund community priorities.	Local government



## GETTING BUY-IN: WHO ARE THE STAKEHOLDERS?

To pursue a local energy development project with community benefits, it is critical to engage project stakeholders to understand needs, interests, and build strong buy-in. While key stakeholders may vary by community and project, there are several stakeholders that are critical for any project's success.

# LOCAL GOVERNMENT

## Stakeholder Role

Local government officials can encourage development projects through RFPs, energy policy, and zoning ordinances. They can also serve as key partners to developers by identifying public lands for siting purposes and providing social and political capital. Studies show that development models that put the community, including local government officials and citizens, in the driver's seat are more successful in achieving sustainability outcomes, including economic, social, and environmental sustainability.

## Priorities for Local Development

- Tax revenue
- Economic development and community benefits
- Energy cost savings
- Productive alternative use for vacant land

## Challenges

- Officials are cautious about the lifecycle costs of energy infrastructure
- Negative community perception around renewable energy can damage political reputations
- Concerns around safety and community aesthetics

A development project cannot move forward without support from local government officials. Local government officials have many reasons to support local renewable energy projects, though they may not yet fully appreciate these reasons. They are also key stakeholders when it comes to ensuring that community benefits are incorporated within the project.

When approaching a local official seeking support, they will likely be most receptive to the following incentives of a local project:

1. As outlined previously in this resource, local renewable energy development brings significant tax benefits to the community that can support the other goals that local officials seek to accomplish.
2. Local energy development also brings general economic development benefits to the community apart from taxes. For example, energy projects may employ members of the local community. They can help to promote education and training in a sector that is growing nation-wide. In addition, by keeping energy production local, the local renewable energy project helps keep jobs and capital produced circulating within the local economy.
3. Thanks to technology advances in the renewable energy sector over the last decade, renewable energy is now as cheap or cheaper to produce as traditional carbon-based energy. As such, renewable energy produces cost savings that are passed on to local utilities, the city, and/or customers.
4. Renewable energy provides an opportunity to make productive use of vacant land. Many local officials recognize the opportunity costs associated with vacant land in their communities, yet do not have the resources or expertise to address the challenge. Renewable energy, particularly solar panels, often need large amounts of real estate to be productive. Local officials can help match unproductive land with productive land uses like renewable energy.

Below is a list of roles that can support and facilitate your local renewable energy development goals. The more of these officials that understand the benefits and support the goals of the project, the more likely success will be.

City/Township Government	County Government	Other
Mayor	County commissioner(s)	Local/regional Chamber of Commerce members
City Council members	Head of county planning staff	Regional planning organization
Head of city planning staff		Economic development agencies
Head of city sustainability initiatives		
Planning Commission members		
Zoning Commission members		

Local officials have numerous policy and planning tools at their disposal to support local renewable energy development. While every government context varies (for example, some roles in different locations have different powers depending on state regulations and guidance, local government jurisdictions, and local government structure), there are some general guidelines for what local officials can do to support renewable energy development and community benefits.

## 1. Craft provisions within Request for Proposals (RFPs) and contracts:

Local governments often contract out services to third party providers using the RFP process. The RFP is designed to describe the government's vision for the service or benefit that they wish to deliver. The RFP also serves as the basis of the agreement or contract between the government and the service provider. As such, the language deployed in the RFP is an important tool for shaping the character and policy of the service itself. Including language around community benefits in the RFP will help ensure that community benefits are included in the final contract between the government and the developer.



### Municipality-led Contract Provisions around Community Benefits

#### LAPEER, MI

Lapeer, MI partnered with DTE Energy to develop two utility-scale community solar projects on public lands. City officials wanted to ensure that this solar development had broad community benefits, so they added language to their development contract that outlined a solar taxation schedule and commitments for DTE Energy to fund and organize solar educational programs in the community. The Michigan State Tax Commission has not established an official solar taxation schedule, so by adding this language, Lapeer ensured they would receive local tax benefits similar to those received by a wind project – even if the state changed its solar taxation policies. This additional tax revenue has been used to fund sewage and water infrastructure. The educational programming commitment led to DTE Energy funding and operating an interactive, informational kiosk; regular, publically-available tours of the solar farm; semi-annual events at the solar farm; a solar-themed “play” for local students; and student access to their solar monitoring systems for educational purposes. These events and resources have helped educate the community about the benefits of solar and how it is impacting their community.

## 2. Municipal ordinances to support renewable energy development:

Local government can also promote local renewable energy development by crafting ordinances that allow for small-scale, distributed, or commercial-scale energy development within jurisdictional limits.

### A. Wind

As local planners develop comprehensive plans, area plans, functional plans, zoning codes, and policy incentives, they can craft them in a way that makes wind energy development easier. Ways that the planning environment can support wind development include:

1. Easing height restrictions for turbines
2. Allowing wind turbines as a by-right accessory use subject to standards in selected or all zoning districts
3. Specifying smaller setbacks on turbines
4. Allowing more turbines per lot
5. Streamlining and simplifying permitting processes for new turbines

For a comprehensive treatment of planning for wind energy, see the American Planning Association's 2011 report, [Planning for Wind Energy](#).<sup>4</sup>

### B. Solar

As local planners develop comprehensive plans, area plans, functional plans, zoning codes, and policy incentives, they can craft them in a way that makes solar energy development easier. Ways that the planning environment can support solar development include:

1. Allowing accessory solar energy systems for both residential and nonresidential zoning districts
2. Solar easements, permits, and access provisions that define and protect property owners' rights to sunlight
3. Subdivision solar siting provisions, which orient lots for maximum solar gain
4. Streamlining and simplifying permitting processes for new solar gardens or commercial solar panel installations

For a comprehensive treatment of planning for solar energy, see the American Planning Association's 2014 report, [Planning and Zoning for Solar Energy](#).<sup>5</sup>

## 3. Identifying vacant/under-used lots:

Local officials can develop maps and resources to identify vacant and under-used lots in the community. This centralized resource can aid developers or sponsors of renewable energy projects in siting locations for potential projects. This supports renewable energy development because it reduces the amount of resources that developers must expend on upfront project costs and planning.

## 4. Making use of community networks:

Local officials often have wide-ranging networks across the community and beyond, including connections with local businesses, key residents, and regional partners. Gaining support of local officials can help a renewable energy project tap into existing networks and even connect with regional partners where projects could benefit several communities simultaneously.

<sup>4</sup> Rynne, Suzanne, Larry Flowers, Eric Lantz, and Erica Heller. (2011). "Planning for Wind Energy." American Planning Association.

<sup>5</sup> American Planning Association, Planning Advisory Service (PAS). (2014). "Planning and Zoning for Solar Energy." Info Packet.

## 100% Renewable Energy: City-led Initiative and Policy

Cities have become increasingly the focus of clean energy policy initiatives. One such policy that has received particular attention from cities is a goal of reaching 100% renewable energy.

### BURLINGTON, VT

#### Timeline

**1982:** Construction of McNeil generating station, a biomass incinerator

**2015:** Purchase of Winooski hydropower plant + airport solar array takes city to 100% renewable

**2018:** City's electric makeup is 20% hydropower, 35% biomass, and 20% wind and solar

#### Portfolio

Most of Burlington's electricity portfolio comes from local, city-owned renewable energy infrastructure.

A fifth of the city's electricity portfolio comes from hydropower. The city owns their own plant on the Winooski River, sited on city-owned land. The facility was purchased through a bond, and bond payments were equal to the cost of purchasing energy elsewhere, while also guaranteeing ownership over the power once bonds are retired. The city also purchases power from an older hydroelectric dam in Maine.

A third of the city's electricity portfolio comes from the biomass incinerator plant called the McNeil Generating Station. Pine and timber wood chips, harvested from a 60-mile radius of the city, are transported by railroad to the plant to be burned each day. The plant was approved and constructed in the early 1980s, and in addition to employing laborers, is staffed with foresters who developing green rules and protocols for sustainable harvesting. The city owns half of the plant while minority stakeholders own the rest, meaning the plant constitutes a public-private partnership.

Wind and solar make up most of the rest of the energy portfolio, and both are sourced locally as well. The city airport houses solar arrays on under-used public land, making it a city-owned project. Wind turbines produce power on nearby Georgia Mountains through a 25-year PPA.

#### Key Success Factors

- Early investments in municipal energy infrastructure
- Existence of municipal electric utility
- Support from progressive voter base

### ASPEN, CO

#### Timeline

**2004:** City makes 100% renewable energy declaration

**2007 to 2012:** City plans to acquire another hydropower project that would have brought them to 100% renewable but local residents and conservationists oppose the measure for its environmental impact on Castle Creek

**2013:** City council enters into negotiations with wholesale energy supplier, Municipal Energy Agency of Nebraska to develop a new energy product portfolio through power purchase agreements with out-of-state energy developers

**2014:** Negotiations are finalized, reaching 100% renewable energy

**2018:** City's electric makeup is 46% hydroelectric, 53% wind power, and 1% landfill gas.

#### Portfolio

About half of the city's electricity comes from local, city-owned energy infrastructure. The hydroelectric power is sourced from the Ruedi Dam and Maroon Creek Hydroelectric facilities that were both built in the 1980s. The bonds for these facilities are fully retired, meaning that energy costs from these sources are extremely low and stable and these savings are passed on to customers.

A little more than half of the city's electricity comes from energy purchased through a Power Purchase Agreement (PPA). The city buys RECs from four wind farms in Nebraska and South Dakota. It also purchases a small amount of energy from a biogas facility in Iowa. For the REC contracts, they negotiated for low escalation rates and/or fixed energy costs in order to eliminate the volatility of fuel costs.

#### Key Success Factors

- Former acquisitions of hydroelectric dams in 1980s; in 2004, the city was already using up to 80 percent from renewable energy sources
- Existence of municipal electric utility
- Support from progressive voter base; voters have supported issuing bonds for supporting energy infrastructure investments





# DEVELOPERS

## ENERGY PROJECT DEVELOPMENT BASICS

<b>Stakeholder Role</b>	Energy project developers are the hub of the wheel for solar and wind developments. They are responsible for securing land rights, negotiating with utilities or corporate power buyers, and obtaining building permits and property tax agreements; working closely with engineering, finance and commercial teams; and acting as lead project sponsor financing and construction of the project. Sometimes, they also play the role of community organizer to build public support for the project.
<b>Priorities for Local Development</b>	<ul style="list-style-type: none"> <li>Secure local support for the project from other stakeholders to design a profitable model</li> <li>Identify optimal location for the development</li> <li>Navigate local laws and policies for energy development</li> </ul>
<b>Challenges</b>	<ul style="list-style-type: none"> <li>Generating public acceptance of renewables in areas that have political opposition</li> <li>Adapting projects to inconsistent laws and policies across states and municipalities</li> </ul>

Renewable energy project developers decide which projects to pursue by creating a financial model to help them understand profitability. In the US, developers often operate as for-profit, private entities but they can also be non-profit organizations or the local government.

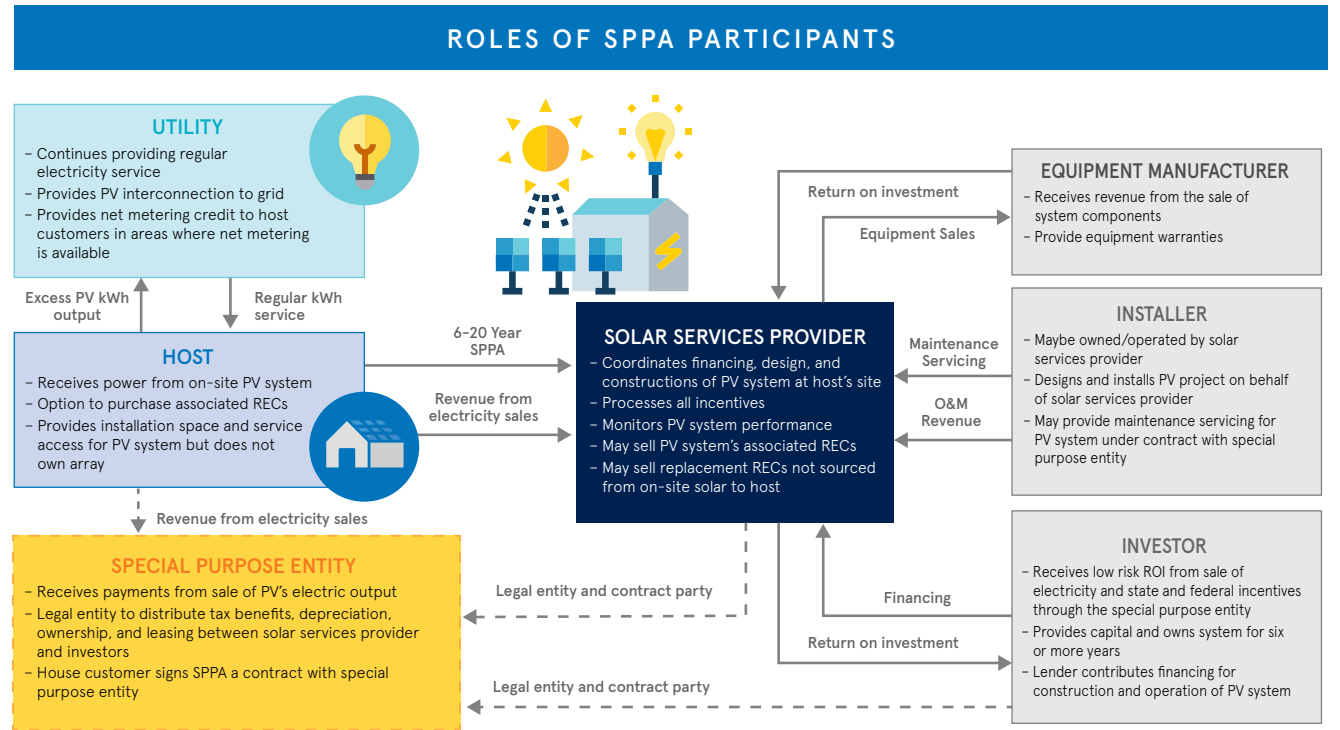
At a basic level, the model typically centers around revenue and costs, with revenue coming from sale of the energy generated. A project with community benefits should incorporate the benefits scheme into the financial model from the beginning, as some of the revenue that would otherwise be profit to the developer will be diverted to community benefits. The parties must come to agreement on an adequate model that meets the profitability needs of the developer while also generating revenue to use for community benefits.

As you advocate for community benefits, there are a few components of a developer's financial model you should be aware of.

## Power Purchase Agreements

Revenue for most energy projects comes from a power purchase agreement (PPA), so creating a new energy project with community benefits will likely involve working with a developer to establish a PPA with a utility. A PPA is a financial arrangement in which a third-party developer owns, operates, and maintains the system, while a host customer (e.g. a landowner) agrees to site the system on its property.<sup>6</sup> The host customer may use some of the energy produced and will typically sell the remainder to a utility; the developer receives valuable financial benefits, such as tax credits and revenue generated from the sale of electricity.

The chart below details the relationship between these stakeholders for a solar power purchase agreement.



Source: <https://www.epa.gov/greenpower/solar-power-purchase-agreements>

A developer may have an incentive to collaborate to include community benefits in their model for the project. For example, some developers already leverage payments to communities in order to build support for their companies and projects. Working with a developer to formalize the benefits model may help accomplish some of their community engagement goals.

<sup>6</sup> Select Solar Power Purchase Agreements. Retrieved from <https://www.epa.gov/greenpower/solar-power-purchase-agreements>

## Investors

Many developers work with investors to fund the upfront investment for new renewable energy projects. As noted in the chart above, investors have financial incentives to participate in renewables projects. For example, the federal Solar Investment Tax Credit was intended to promote the deployment of solar energy in the US by providing a tax credit to investors who put their money into residential and commercial solar development. This tax credit contributed to 59% compound annual solar growth since it was enacted.<sup>7</sup> Many investors have flocked to large-scale solar developments to reap the benefits of the tax credit.

A critical component to maximizing both profit and benefits is obtaining an up-front investment in the project at a low cost of capital through debt or equity. When advocating for community benefits in both large and small-scale energy projects, investors will be concerned about their return on investment. It may be advantageous to find an investor who is willing to make a lower return to promote revenue flowing into the local area as part of benefits scheme.

## Landowners

In most cases, landowners or building owners (in the case of some solar projects) lease their space to a developer that will build a solar array or wind turbine. This will be reflected as a cost on the developer's financial model. Lease payments will provide extra income to the host – in Michigan, this opportunity has been advantageous to many landowners of agricultural properties interested in new revenue streams. Additionally, like investors, landowners also have an incentive to host renewable energy projects. Tax credits vary on a state-by-state basis but aim to promote development of renewables.

### Developer-led Community Benefits Model: Community Enhancement Fund

Community enhancement funds (CEF) are a common community benefit mechanism involving a payment by a developer to fund community initiatives. A CEF can be implemented in a number of ways depending on the partnership agreement between the developer and community and is generally administered by a community trust organization, local government agency, or funds awarded on an ad hoc basis through a grants process. CEFs are fairly easily administered and can be a way to fund much-needed community programs, like public transport. Preconditions for success include a well-informed working group to represent the needs of the community, a plan for achieving long-term outcomes, and clarity and transparency on the size of the financial benefit. Conversely, CEFs are unlikely to have an impact on community acceptance of energy development absent other forms of community consultation, as they can be seen as tokenistic and disingenuous.<sup>8</sup>

For example, the Gullen Range wind farm in Australia contributes \$1,666 per annum for each turbine in its development to a community enhancement fund, amounting to \$120,000 in 2014. The fund supports projects that benefit the community within a 10km radius and is governed by the local council.<sup>9</sup> Developers in the US have also employed this model, contributing funds either tied directly to energy output or as a lump sum donation. To promote one Michigan development, Cypress Creek Renewables, based in California, donated a specific dollar amount for every 2 MW of energy generated; the fund was administered by the local developer.

<sup>7</sup> Select Solar Investment Tax Credit (itc). Retrieved from <https://www.seia.org/initiatives/solar-investment-tax-credit-itc>

<sup>8</sup> "Strategic Options for Delivering Ownership and Benefit Sharing Models for Wind Farms in NSW." Ernst and Young Australia 2015.

<sup>9</sup> ibid



# UTILITIES

## Stakeholder Role

Utility companies purchase and sometimes develop the energy mix that goes to their end customers. While the energy mix is partially dictated by regulatory policy, utility companies have a significant role in determining which energy sources (e.g., wind, solar, coal, nuclear) power the grid. When utility companies develop their own energy, they often have a role in the community and stakeholder engagement process.

## Priorities for Local Development

- Lowering costs for customers
- Meeting customer and business needs
- Meeting regulatory policy standards, such as renewable energy portfolio standards
- Utilities are also focusing on energy efficiency as a way to meet goals

## Challenges

- Lack of a viable energy storage option, which will lead to wasted energy as renewables mix grows
- Local development is difficult and expensive
- Existing long-term power purchase contracts with non-wind and solar energy producers
- Rate structures affect utilities' profitability, and different capital costs of wind and solar affect utilities' rate base

## Utility Company Basics

Utility companies determine where and from which sources the energy that goes to their customers comes from. When pursuing renewable energy, utilities have three options 1) develop it themselves, 2) engage in a power purchase agreement to bring a local or non-local energy development online, or 3) buy renewable energy credits (RECs). In the case of local renewables development, developers typically sell their energy to utility companies, which then sell it to their customers through the grid.

The three main types of utilities are investor-owned, municipal, and cooperative:

1. **Investor-owned utilities** are for-profit entities and are sometimes publicly traded, such as DTE Energy and Consumers Energy. These utilities are profit-driven but also constrained by regulations requiring them to provide affordable energy. Investor-owned utilities are incentivized to develop local energy projects for profit purposes and will invest in community benefits if they will help those projects succeed.
2. **Municipal utilities** are non-profit organizations run by the city or local government, including Traverse City Light and Power. Municipal utilities are driven by community and business demands and lowering costs. Small municipal utilities do not have much purchasing power on their own, but the Michigan Public Power Agency (MPPA) gives them more power when purchasing energy throughout the state.
3. **Electricity cooperatives**, such as Cherryland Electric, are non-profit and driven by their member-owners' values and lowering costs. Electricity cooperatives may invest in local renewable energy projects if it meets the preferences of their members and does so in an equitable way.

### Policy Drivers

Michigan-based utilities' actions are strongly influenced by public policy. There are a few key regulations that influence how utilities operate in the renewables development space in Michigan:

- The Clean, Renewable, and Efficient Energy Act 2018 updated the statewide Renewable Portfolio Standard (RPS) to require utilities to generate 15% of their electricity through renewable sources by 2021
- Public Act 295 (2008) states that every utility has to get 1% of complete energy usage back through energy efficiency programs

#### Utility-led Community Benefits Model: Community Solar in Michigan

Utility companies throughout Michigan are considering community benefits in their renewable energy development. Cherryland Electric, a non-profit utility company that operates in northern Michigan, has offered several programs to make solar energy more accessible to their customers.

Cherryland has developed several community solar projects on their property that customers can invest in and receive bill credits for. Cherryland built, designed, and paid for this project up front. This project enables customers to access solar energy who may not be able to afford the up-front investment.

Cherryland also offers members the option to build solar arrays on their property and sell the electricity back to the utility. Getting neighbors' support is critical for the success of this type of project.

Finally, the utility piloted a low-income community benefit program in partnership with the state of Michigan. Through this program, Cherryland offered free shares in their community solar array as well as electricity bill credits for individuals and families that went through steps to weatherize their homes. This program sought to make renewable energy more accessible to low-income co-op members.



#### Stakeholder Role

Provide input on project through community meetings and other forums.  
Beneficiaries of community benefits.

#### Priorities for Local Development

- Differ among community groups (see discussion below)

#### Challenges

- Perception of project

Though they may not be involved in the technical development, the community is a key stakeholder in every renewable energy project. The community is likely the recipient of energy generated and additional tax revenue, and it will regularly engage with the project's infrastructure and leadership.

If the community has a negative perception of a project, the project is more likely to stall or be abandoned; similarly, if the community has a positive perception of a project, it is more likely to go smoothly and create opportunities for future development.

As a broad stakeholder group, different sections of the community will likely have different priorities for local development. Three segments of the community that are particularly important for the success of a local renewable energy project and its community benefits are highly engaged residents, low-income residents, and landowners.

## Highly Engaged Residents

A survey of residents in Traverse City, a majority of whom (82%) are already participating in Traverse City Light and Power's Community Solar Program, reported that protecting the environment, encouraging local renewable energy, and investing in community as their highest priorities local development.<sup>10</sup> Given that these residents are already participating in the community solar program, which is costly to join, we assume these priorities largely align with the priorities of higher income residents. Trendwise, these are often the concerns of residents targeted for a buy-in community solar project.

## Low Income Residents

According to community organizations surveyed, these community members are more focused on making ends meet and are largely interested in reducing utility costs and short-term cost/benefit opportunities. Residents in this category are likely the primary beneficiaries of benefits that go to the community through the local government; focusing on these community members also strongly supports social sustainability goals.

### Grand Valley Power: Community Benefits for Low Income Residents

Grand Valley Power, a utility in Colorado's Grand Valley, partnered with a local non-profit, Grid Impact, to build a 17kW solar farm to serve low-income families. Local residents who meet the income threshold can apply to become co-op members. If selected, they agree to provide 15 hours in sweat equity to the co-op and to authorize the co-op to keep a small portion of revenue for administration expenses. In exchange, they receive a share in the cooperative, or about 16 solar panels generating 3.5 kW and saving each family ~\$600 in electricity for the year.<sup>11</sup>

## Landowners

From a community perspective, landowners are largely interested in opportunities for development on their marginal lands, limiting conflict with neighbors (which can sometimes occur if a landowner uses their land for something unique or that could be perceived as unsightly), and impact on land prices.

Community members and organizations' interests are maintaining a community that aligns with their values and working with local government and business to supporting the community's needs/interests. If a proposed project does not match community needs/interests — or the alignment is not clearly articulated — a renewable development project risks being sidetracked by community discontent. Given the broad range of, and potentially conflicting, community interests, it is important to engage the community as a core stakeholder in any renewable development project.

<sup>10</sup> A Guidebook for Community Solar Programs in Michigan Communities. Retrieved from [https://www.michigan.gov/documents/mdcd/Michigan\\_Community\\_Solar\\_Guidebook\\_437888\\_7.pdf](https://www.michigan.gov/documents/mdcd/Michigan_Community_Solar_Guidebook_437888_7.pdf)

<sup>11</sup> "Colorado: Grand Valley Power Cooperative." Environmental and Energy Study Institute. Retrieved from <http://www.eesi.org/obf/solar/casestudies>

# PARTICIPATORY PROCESS

Participatory processes are the strategies used to build public knowledge and buy-in for renewable energy projects. Similar to the experience with any capital development project, the city and the developer choose how much, if at all, to engage the community in the development process and decision-making. The more you engage, the higher the project's likelihood of success.

There are three major categories of participatory process: social license to operate, community consultation, and formal contracts. These processes range from least intensive participation/engagement to most intensive participation/engagement. These categories are intended to simplify the range of options; in reality, each category encompasses a range of potential participatory processes.



The most successful participatory processes:

- ARE VERY TRANSPARENT
- OFFER OPPORTUNITIES FOR ENGAGEMENT BEFORE, DURING, AND AFTER DEVELOPMENT
- CAREFULLY AND WIDELY PUBLICIZE COMMUNITY BENEFITS ASSOCIATED WITH DEVELOPMENT

For renewable energy project development, research shows strong community engagement and clear public benefit leads to higher public perception of and buy-in for projects.<sup>12</sup> Therefore, in general, communities should employ a participatory process that includes, at minimum, opportunities for **community consultation**. This approach ensures adequate community and stakeholder input and positive engagement while allowing the city and the developer, who are more knowledgeable regarding project details and financing, to make final decisions based on community input.

<sup>12</sup> Mills S. (2018) Wind Energy and Rural Community Sustainability. In: Leal Filho W., Marans R., Callewaert J. (eds) Handbook of Sustainability and Social Science Research. World Sustainability Series. Springer, Cham



**STEPS FOR ENGAGEMENT:**

1. **Identify all relevant project stakeholders**
  - a. Consider: community groups, landowners, utilities, developer, city/county government
  - b. Who else do you need engaged for project success?
2. **Create a stakeholder committee**
  - a. Committee should have at least 1 representative from all stakeholder groups
  - b. Set expectations for committee & committee responsibilities
    - At what points in the process will the committee provide input?
    - What is the committee’s level of control over decisions related to community benefits? Are they the: Decider? Recommender? Focus group?
    - Is the committee expected to create proposals for community benefits or to respond to proposals from the city/developer?
    - Does the committee have a say in the amount of funding dedicated to community benefits?
    - Will the committee consider the scale (\$ value, % of project revenue, etc.) of community benefits in addition to the use of these funds?
    - Will the committee engage in issues beyond community benefits for this project? If so, in what and how?
  - c. Create a regular meeting schedule and timeline for committee involvement
3. **Create opportunities for broader community involvement at key decision points**
  - a. For example, hold a community meeting to explain the current proposal and ask for community input
  - b. Ensure these opportunities are well-publicized and accessible for all stakeholder groups
  - c. Consider allowing the broader community, or the stakeholder committee, to select their preferred community benefits from a slate of options that make financial sense for the city and the developer
4. **Publicize community benefits**
  - a. Research shows that communities that well-publicize these benefits have higher rates of community support for renewables development



# MORE RESOURCES

Database of State Incentives for Renewables and Efficiency: <http://www.dsireusa.org/>

Methods for Analyzing the Benefits and Costs of Distributed Photovoltaic Generation to the U.S. Electric Utility System:  
<https://www.nrel.gov/docs/fy14osti/62447.pdf>

Rocky Mountain Institute: A Review of Solar PV Benefit and Cost Studies:  
[https://rmi.org/wp-content/uploads/2017/05/RMI\\_Document\\_Repository\\_Public-Reprrts\\_eLab-DER-Benefit-Cost-Deck\\_2nd\\_Edition131015.pdf](https://rmi.org/wp-content/uploads/2017/05/RMI_Document_Repository_Public-Reprrts_eLab-DER-Benefit-Cost-Deck_2nd_Edition131015.pdf)

Wind Energy Stakeholder Committee's Lessons Learned: Community Engagement for Wind Energy Development in Michigan:  
[https://static1.squarespace.com/static/564236bce4b00b392cc6131d/t/5a848c6771c10b7697cb6c50/1518636136391/Lessons+Learned\\_WESC+Report\\_Final.pdf](https://static1.squarespace.com/static/564236bce4b00b392cc6131d/t/5a848c6771c10b7697cb6c50/1518636136391/Lessons+Learned_WESC+Report_Final.pdf)

A Guidebook for Community Solar Programs in Michigan Communities:  
[https://www.michigan.gov/documents/mdcd/Michigan\\_Community\\_Solar\\_Guidebook\\_437888\\_7.pdf](https://www.michigan.gov/documents/mdcd/Michigan_Community_Solar_Guidebook_437888_7.pdf)

Becoming a Solar-Ready Community: A Guide for Michigan Local Governments:  
[http://cec-mi.org/wp-content/uploads/2013/09/Guide-Book\\_Solar\\_FINAL\\_web.pdf](http://cec-mi.org/wp-content/uploads/2013/09/Guide-Book_Solar_FINAL_web.pdf)

## Federal Energy Incentives and Programs

Production Tax Credit (PTC)  
<https://www.awea.org/policy-and-issues/tax-policy>

Investment Tax Credit (ITC)  
<https://www.seia.org/sites/default/files/inline-files/SEIA-ITC-101-Factsheet-2018-June.pdf>

American Recovery and Reinvestment Act (2009)  
<https://www.energy.gov/recovery-act>

Federal and State Tax Incentives for Renewable Energy and Energy Efficiency  
[http://www.thinkgeoenergy.com/wp-content/uploads/2018/01/RC\\_Garciano\\_Green\\_Tax\\_Incentive\\_Compedium\\_January\\_2018.pdf](http://www.thinkgeoenergy.com/wp-content/uploads/2018/01/RC_Garciano_Green_Tax_Incentive_Compedium_January_2018.pdf)

## Urban Planning for Renewable Energy Installations

Rynne, Suzanne, Larry Flowers, Eric Lantz, and Erica Heller. 2011. "Planning for Wind Energy." American Planning Association.

American Planning Association, Planning Advisory Service (PAS). 2014. "Planning and Zoning for Solar Energy." Info Packet.



