CLIMATE CABINET EDUCATION

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ELISABETH HAUB SCHOOL OF LAW

ELECTRIC MUNICIPAL UTILITIES AND THE TRANSITION TO A CLEAN ENERGY FUTURE

A Guide for Municipal Utility Leaders

Climate Cabinet Education combines data science with policy expertise, local partnerships and cross-state experience to support climate leadership in local governments across the US — working towards a clean energy economy that creates jobs, improves community health, and unlocks local opportunity and leadership.

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Ken Colburn retired as RAP's director of US programs in 2020. He continues to contribute to the clean energy transition part-time through his LLC, Symbiotic Strategies.

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Pleiades Strategy works with mission-driven leaders striving to build an open, democratic, climate-safe future rooted in justice and equity. Experienced in policy research, communications, and partnership development, we assist organizations in understanding and shaping the policy landscape to accelerate the clean energy future and realize energy justice. We are deep systems thinkers who relish bringing clarity to complex situations through listening, strong communications, and collaborative building. We operationalize big ideas and thrive when working on multidisciplinary challenges in fast-moving, dynamic environments.

Authors, Researchers and Contributors:

Regulatory Assistance Project (lead author)
- Megan Anderson
- Camille Kadoch
- Ken Colburn
- Ruth Hare
- Donna Brutkoski

Pace Law
- Janine Midgen-Ostrander
- Craig Hart
- Jessica Laird

Climate Cabinet Education
- Emma Fisher
- Nick Arnold
- Ethan Kirkham

Pleiades Strategies
- Frances Sawyer

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D. Expand Clean Energy Generation

As load is changing due to energy efficiency and electrification and becoming more flexible through demand management, supply options are also changing and possess different characteristics than traditional sources. Municipal utilities have numerous options to procure and develop supply. Ultimately, they will be able to match these sources of supply with energy efficiency and demand-side approaches. This section will first discuss how policies to procure or build clean energy sources may act as a threshold consideration for municipal utility decisions. Next, this section will outline various options that municipal utilities have to develop or procure clean energy generation.

1. Policies to Procure or Build Municipal Clean Energy

There are a number of ways utilities can develop and procure clean energy to meet policy goals and as a least-cost option to meet demand.

Municipalities may:

- Procure clean energy through all-source competitive bidding.
- Build or contract a third party to build their own renewable generation, such as solar, wind and storage.
- Engage customers to procure flexibility from energy efficiency, demand management and time-varying rates and obtain distributed resources on the distribution grid through net metering, user-friendly interconnection regulations and electrification tariffs.

Determining which method or mix of methods to use can be daunting. The process outlined in Table 3 may help.

Table 3. **Steps to help municipalities choose procurement methods**

Internal assessment	The utility should assess resource needs, including determining the optimum procurement of resources in front of and behind the meter. The utility should also assess whether other municipal goals for customer involvement or other goals would have a bearing on the types of resources selected beyond cost considerations. Many of these steps will take place in the planning processes we have discussed.
Issue a request for proposals for competitive all-source procurement	This process will provide municipalities with an assessment of the variety of resources available to meet their needs and the cost of procuring it.
Get bids for self-build	Obtain bids for creating on-site renewable or clean energy.
Weigh and assess the results	The information obtained in this process will help municipal utilities determine which option or mix of options is right for them.

a. Competitive Bidding of All Sources to Serve Load

Historically, energy generating sources were mainly coal, nuclear or gas, resource types that require large, central generating plants. Given the cost of these large plants, they were usually owned by utilities. Today, generation sources include renewable energy, either utility scale or distributed generation, and grid resources such as demand response and storage, all of which can be provided by third-party providers in addition to utilities. Renewable energy purchases by local governments are growing rapidly. In 2018 and again in 2019, renewable energy purchases made by local governments were over three times those made in 2017.[137] According to research by the World Resources Institute, the vast majority of renewable energy procured by local governments between 2015 and 2020 was obtained through off-site procurement versus on-site renewable energy generation.[138] As municipal utilities begin to take more control of their generation, this trend may change.

As municipal utilities have more choices for energy needs, they can adjust their energy purchasing practices to allow for this diversity. All-source procurement means that whenever a municipal utility believes it is time to acquire new generation resources, it may conduct a unified resource acquisition process. In that process, the requirements for capacity or generation resources are neutral with respect to the full range of potential resources or combinations of resources available in the market. A competitive procurement process is usually accomplished through requests for proposals (RFPs) as part of the process of selecting adequate generation resources. In an RFP, the municipal utility describes the resources it wishes to procure.[139]

Competitive bidding is not a new concept for municipal utilities, as many types of contracts may have competitive bidding requirements pursuant to state law. Experience offers some best practices to follow for competitive procurement.[140]

- **Ensure that the need for new resources is well defined, transparent and linked to findings from a well-vetted resource planning process.** A need for new resources may arise from emerging electric system reliability requirements, from changing economics of resource options, or from policy goals that reflect environmental, equity, economic development and resource priorities. Modeling assumptions and tools should be as transparent as reasonably possible and accessible to all stakeholders. Resource planning scenarios should be specified and evaluated in consultation with a diverse

137 Gonçalves, T., & Liu, Y. (2020, June 24). *How US cities and counties are getting renewable energy.* World Resources Institute. https://www.wri.org/insights/how-us-cities-and-counties-are-getting-renewable-energy

138 Gonçalves & Liu, 2020. Note this data includes cities and other forms of municipal government in addition to municipal utilities.

139 Shwisberg, L., Dyson, M., Glazer, G., Linvill, C., & Anderson, M. (2021, March). *How to build clean energy portfolios.* RMI. https://rmi.org/how-to-build-ceps/; and Wilson, J. D., O'Boyle, M., Lehr R., & Detsky, M. (2020, April). *Making the most of the power plant market: Best practices for all-source electric generation procurement.* Energy Innovation Policy & Technology and Southern Alliance for Clean Energy. https://energyinnovation.org/wp-content/uploads/2020/04/All-Source-Utility-Electricity-Generation-Procurement-Best-Practices.pdf

140 Adapted for municipal utilities from Shwisberg et al., 2021.

group of stakeholders so that those needs are well understood and validated.

- **Ensure that all resource providers have opportunities to offer all capabilities from each of the resource options they bid.** Bidding should be open to all resource providers that meet reasonable bidding requirements, and bidders should be allowed to submit bids that include all resource types to enable portfolios that use combinations of supply- and demand-side resources.
- **Work with bidders prior to, during and after solicitations to understand what data they need to give their best bids.** Supporting bidders to deliver diverse and competitive solutions requires municipal utility contacts to be available to answer questions. In the interests of transparency and to ensure a level playing field, the municipality should document and publish all bidder questions and municipality answers and be open to modifying the solicitation and proposed contract terms if that can expand the field of competitive solutions.
- **Ensure that the bidding process is open, transparent and evaluated fairly.** Evaluation criteria used to select bids should be transparent and communicated clearly to bidders prior to bid submission deadlines. A third-party, independent evaluator could be used to supervise the utility bid evaluation to ensure that it follows published criteria. Municipalities should consider trade-offs among bids and additional modeling of resource options if no one portfolio among finalists is clearly superior to the others.
- **Consider whether evaluation criteria for selecting the optimal resource portfolio are aligned with public policy outcomes.** Stakeholders are increasingly concerned about alignment between procurement and public policy objectives, including resilience, equity and decarbonization. Municipalities should carefully evaluate how well their solicitation processes support municipal goals.

Three foundational improvements in competitive all-source procurement practices support the achievement of outcomes that are aligned with objectives and ensure the least regrets outcomes:[141]

1. **Increase transparency.** Bidders obtain the information they need to propose competitive solutions that meet solicitation objectives and reduce the likelihood of bids falling through.
2. **Engage stakeholders and customers.**
   - Stakeholders may propose alternative specifications of the need or portfolio options that the municipal utility did not consider.
   - Stakeholders can provide feedback about whether state and local policy objectives are adequately reflected in a solicitation's scope and evaluation criteria and build public support for outcomes.
   - Stakeholders and bidders can identify barriers that may limit participation in the solicitation.
   - Consistent engagement with bidders can reduce perceived risk, result in more competitive bids from a diverse set of resources and support market maturation.
3. **Link planning and procurement.**
   - Consider all resource options holistically, including distributed energy resources and nonprocurement pathways (i.e., energy efficiency measures or other options that could achieve resource needs without procuring new energy) to save money and reduce environmental impact. Assess the need for procurement of a resource in the context of longer-term planning objectives and risks.
   - Actual price and operational capability information from bids is used to inform planning decisions.

b. Build and Own Municipal Clean Energy

Some municipal utilities have decided to pursue utility-built and -owned clean energy. These projects can include large-scale or utility-scale renewable energy developments on municipal land. They can also include on-site solar PV systems, often installed on rooftops or parking lots or on land at the same location where electricity is consumed. These systems are directly tied to a facility's electrical system and can reduce the facility's need for electricity from the grid.[142] Increasingly, energy storage is co-located with renewable energy systems and may be built or procured along with renewable energy.

Municipal government and municipal utility goals, as well as cost comparisons learned from an all-source RFP, will help inform whether to procure clean energy through third parties, build and own clean energy on-site or a combination of both. Figure 7 breaks down how local governments get their renewable energy.[143]

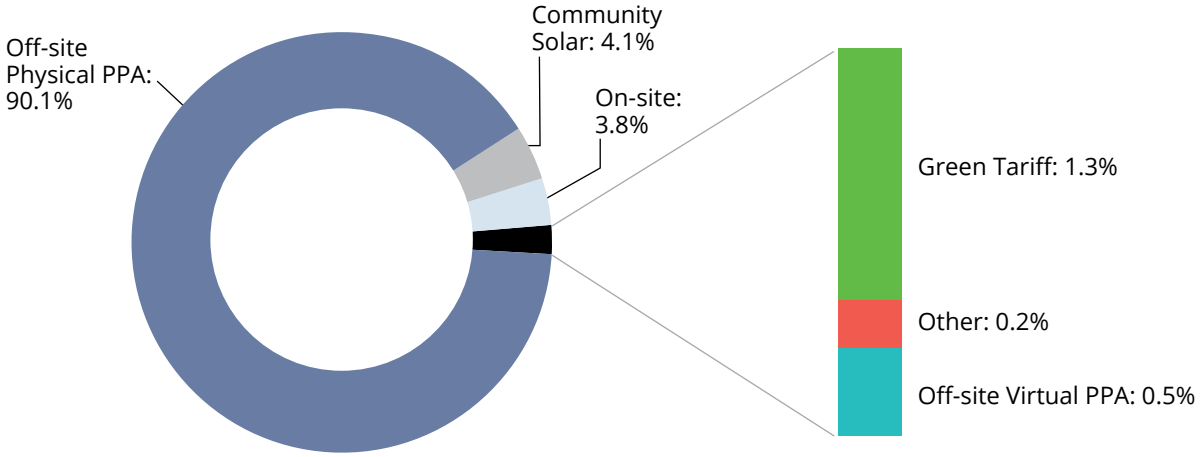
Utility-scale clean energy projects require

141 Adapted for municipal utilities from Shwisberg et al., 2021.

142 American Cities Climate Challenge Renewables Accelerator. (n.d.). *Procurement guidance: On-site solar.* https://cityrenewables.org/on-site-solar/

143 Gonçalves & Liu, 2020.

Figure 7. **Types of renewable energy procured by U.S. local governments, (2015 through first quarter of 2020)**



Source: Gonçalves, T., & Liu, Y. (2020, June 24). *How US Cities and Counties Are Getting Renewable Energy*

coordination and alignment between municipal government officials and municipal utility board and staff. Municipal officials (government and utility) will need to:

- Ensure alignment on goals and priorities.
- Perform or oversee on-site solar siting assessment.
- Analyze and decide on ownership model.
- Run the transaction process — that is, issue an RFP using the process outlined above, select a contractor and negotiate a contract.[144]

On-site clean energy can also offer visibility and educational opportunities, lower costs and — when paired with energy storage — enhance resilience. It also has the potential to provide local jobs and economic development.[145]

"Community solar" refers to projects in which members of the community can subscribe to get the benefits from a solar facility. It is especially useful for renters who cannot install PV units and for low-income customers who can't afford to purchase a PV unit but can benefit from a reduced rate by having a portion of their electricity needs come from solar energy. Community solar programs are another option for municipal government and utilities to procure clean energy, and they can be owned and operated by the municipal utility or can be owned by a developer and subject to the competitive solicitation elements outlined above. Community solar programs can be generally grouped in one of three categories: utility owned, member owned or third-party (developer) owned. Being more flexible and responsive to customer demand allows municipal utilities to occupy a unique space within the community solar market. Some of the first community solar projects in the nation were initiated by municipal utilities. Sacramento Municipal Utility District in California, for example, launched its SolarShares program in 2008 with a 1-MW installation. Sacramento and other municipal utilities have expanded to offer many more community solar programs over the past decade plus. Research indicates that direct interactions between municipal utilities and their customer bases often precipitate the decision to offer a community solar option.[146]

Additionally, community solar can be a way for utilities to extend the benefits of solar to low-income customers by waiving or discounting upfront costs, termination fees and subscription fees that may otherwise be prohibitive, as well as guaranteeing savings on the energy bill of income-qualified customers. In states that have legislation allocating funds for low-income community solar, utilities have a great opportunity to link their customers to those funds and help address energy burden in their communities while they expand their renewable portfolio.[147] (The following section further discusses policies that address energy burden.)

Use of energy storage is rapidly increasing as storage

144 American Cities Climate Challenge Renewables Accelerator, n.d.

145 American Cities Climate Challenge Renewables Accelerator, n.d.

146 National Renewable Energy Laboratory. (2016, December). *Lessons learned: Community solar for municipal utilities.* https://www.nrel.gov/docs/fy17osti/67442.pdf

147 Examples are Massachusetts and Washington, D.C., as shown in this report: Heeter, J., Xu, K., & Chan, G. (2021, July). *Sharing the sun: Community solar deployment, subscription savings, and energy burden reduction.* National Renewable Energy Laboratory. https://www.nrel.gov/docs/fy21osti/80246.pdf

technology is rapidly becoming cost-effective. Storage can be implemented either in front of the meter, typically utility-scale storage, or behind the meter as a customer resource, depending on the desired application. Municipal utilities are increasingly pairing intermittent generation resources, such as solar PV, with energy storage to allow them to capture electricity as it is produced and discharge when it is needed, thus enabling further large-scale solar and wind development.[148] Energy storage can be built and owned by a municipal utility or by a third-party developer.

Working with municipal government on clean energy

Municipal utilities can work with the mayor and city council to assess permitting options that can attract renewable energy or clean energy developers. The municipality can incentivize and control where renewable generation is allowed through zoning and local permitting, leveraging its oversight to influence investment in renewable energy. Some towns have allowed renewable energy development on municipal land and used the associated land lease payments to invest in other infrastructure, such as roads, municipal facilities and schools, to reduce local property taxes.[149]

Community land use plans are an ideal starting point for municipalities wishing to pursue renewable energy objectives. This plan should identify elements that allow for community priorities around renewable energy objectives. Once a community plan is in place outlining renewable energy objectives, local governments with the authority to regulate zoning should include renewable energy development in zoning codes. Finally, providing a clear and predictable permitting process saves time and money for both contractors and municipalities.[150]

148 SolSmart & Cadmus Group. (2019). *Solar + storage: A guide for local governments.* https://solsmart.org/wp-content/uploads/SolSmart_SolarPlusStorage_Guide_06-25-2019.pdf

149 Office of the New York State Comptroller. (2008, April). *Green best practices: How local governments can reduce energy cost and minimize impact on global climate change*. https://www.osc.state.ny.us/files/local-government/publications/pdf/researchbrief_green.pdf

150 Grow Solar. (2017). *Local government solar toolkit: Planning, zoning, and permitting — Wisconsin*. https://www.growsolar.org/wp-content/uploads/2017/10/WisconsinSolarToolkitOCT2017.pdf

Useful Resources on Renewable Energy Procurement

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