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ID 18-818 - ILLINOIS COMMUNITY CHOICE AGGREGATION NETWORK REPORT

AN EVALUATION OF COMMUNITY-LED RENEWABLE ENERGY PROJECT DEVELOPMENT OPTIONS

ILLINOIS COMMUITY CHOICE AGGREGATION NETWORK | 10 W. 35th Street, 1600, Chicago, IL 60616

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BACKGROUND

The Village of Oak Park is a recognized leader in local sustainability planning and performance. Important initiatives undertaken by the Village and its residents include: a full-time Sustainability Coordinator; membership in the Illinois Cool Cities initiative; participation in the Region's Greenest Compact with the Metropolitan Mayor's Caucus; inclusion of sustainability objectives in the Village's planning process; and the procurement of Renewable Energy Credits through the Village municipal electric aggregation ('MEA') program.

Recently, Village leaders have turned their attention to the development of local renewable energy resources. To that end, the Village has secured approximately $1 million in funding by way of a surcharge collected through the Village's MEA program ('Local Energy Fund'). The intent of the Local Energy Fund is to support the development of renewable energy resources within the Village – most likely rooftop solar photovoltaic installations. The Oak Park Environment and Energy Commission ('EEC') has submitted to the Village Board ('Board') range of options for utilizing the Local Energy Fund. In turn, the Board has tasked staff to review the EEC's recommendations and form an action plan for the Local Energy Fund.

This document is staff's initial step setting a roadmap for a Local Energy Fund Plan ('Plan') for consideration by the Village Board. As a starting point, staff is applying the goals and principles identified by the EEC in their communications to the Board.[1,2,3] Those goals and principles included:

- **Goals:** In accordance with the original intent of the aggregation funds (Local Energy Fund), we seek to advance the creation of renewable energy sourced right here in Oak Park resulting in reduced carbon.

- **Principles:**
  - Efficiency: Seek to stretch the impact of the funds as much as possible while balancing the need to be inclusive in terms of potential project beneficiaries
  - Transparency: Produce a fair and transparent process to choose investment projects.
  - Focus: Act with current known information, then adjust as new information is introduced. Focus on Solar until proper research on Wind can be conducted and known issues resolved. Work with existing players vetted by community actors. Consider other players on a project basis, or a biennial review process.
  - Participation: Market/Publicize the projects to garner public support as well as encourage private investment in renewable energy.
  - Progress**:** Break ground breaks ground on a local solar resource by August of 2018.

Staff's intent is to develop a set of specific program and project options that meet the goals and principles set forth by the Commission that align with the existing commercial market and regulatory realities concerning renewable energy development in Illinois. Staff has engaged the Illinois Community

[1] "Expenditure of Aggregation Funds, A proposed framework for commission discussion Oak Park Environment and Energy Commission, August 1, 2017." Presentation to the Village of Oak Park Board, February XX, 2018.

[2] "Use of Electrical Aggregation Funds for the purpose of sustainable electricity production" Oak Park Environment an Energy Commission (EEC), August 1, 2017

[3] "Addendum to the Memorandum to the Oak Park Village Board of Trustees from the Oak Park Environment and Energy Commission (EEC) Dated August 1, 2017", January 9, 2018

Choice Aggregation Network, LLC (ICCAN) to assist staff in the development of a comprehensive plan to address the stated objectives of the Commission and the direction of the Board. ICCAN currently advises the Village on MEA issues, and maintains an expertise in energy markets, procurement, and the controlling state policies concerning renewable energy. Using ICCAN as a resource, staff will lead the development of a Plan for review and consideration by the Board. Currently, staff projects that an appropriate level of due diligence for the Local Energy Fund can be completed by May 2018, and a Plan can be presented to the Board by the end of July 2018.

Requirements for Renewable Energy Development

While the Local Energy Fund is sizable (approximately $1 million by August 1, 2018), it is likely insufficient to develop a significant level of solar development on its own. Table 1 illustrates the limits of simply using the Local Energy Fund alone to purchase a solar resource outright. As noted, the Local Energy Fund itself can only support a small portion of the Village's load (65 households), which appears to run counter to the EEC's stated principles.

Table 1: Utilization of Local Energy Funds for a simple purchase of a Solar Resource

Renewable Energy Resource Variable	Calculation	Value
Local Energy Fund	a	$1,000,000
Cost per MW solar capacity	b	$2,500,000
MW of solar supportable by Local Energy Fund	c = a / b	0.4
Solar Capacity Factor (rooftop)	d	14%
Hours per Annum	e	8760
Annual MWh Solar Generation	f = c * d *e	491
Annual MWh of Average Oak Park residence	g	7.5
# Households Local Energy Fund can support	h = f / g	65

Based on these results, it is apparent that the Local Energy Fund must be leveraged along with project financing to deliver a more sizable level of solar development. Generally, project financing establishes an energy resource as independent business entity that presents a singular set of economics to investors. If the economics for an energy resource are positive, then the project can attract funding and can be built. A listing of the primary costs and revenues that impact project finance for solar projects is in Table 2.

Table 2: Costs & Funding Sources for Renewable Energy Resource development in Illinois

Category	Examples	Notes
Costs	Land acquisition and remediation	20-year leases
	Fees and Taxes	Property, Zoning, Permits
	Engineering study, design, review	Time, surveying, materials
	Interconnection with local utility	Can be sizable
	Equipment	Panels, inverters, trackers
	Maintenance, insurance, security	Periodic site work
	Monitoring, repair, replacement	Inverter replacement at 10 years
	Return on capital, debt, deposits	Minimum financeable returns @7%
Revenues	Federal - ITC, depreciation	~30% of capital costs, only available to private sector owners
	Solar Renewable Energy Credits	Per project type, size, customer, rate class, energy supplier
	Utility - Inverter grants	$0.25/watt, available only with application to utility

	PPA - Power Purchase Agreement	W/other incentives: $35-45/MWh for 20 years W/out other incentives: $120+/MWh for 20 years

Staff notes that the number and complexity of the key project finance variables indicates that:

- A blanket approach to solar project development is unlikely as project finance must be determined on a case by case basis and is dependent on variables outside of the control of the Village.
- The wide range of incentives provided by state statute (the Future Energy Jobs Act) indicates that options such as community solar may provide greater net benefits than standard rooftop solar.
- A successful solar development program in the Village likely will require the participation of private developers/owners of the solar assets to capture substantial federal incentives that reduce the cost of energy outputs (paid for through a PPA) from solar projects.

Staff also notes that monetization of all federal, state, and utility incentives is not enough to support project finance for new solar resources. In addition, a PPA that guarantees that the electricity from a solar resource will be purchased by:

- A rated creditworthy party;
- For at least a 20-year period; and,
- At a set price schedule that is likely to be above current market rates.

While project finance presents its own challenges, staff concludes that utilizing project finance offers the best opportunity to meet the goals and principles set forth by the EEC. However, staff also concludes that establishing and managing programs that rely on project finance will require a level of effort and oversight by the Village to ensure compliance with existing accounting, reporting and governance standards.

EVALUATION OF OPPORTUNITIES

With the above-noted commercial and market realities in mind, staff has evaluated the range of approaches for utilization of the Local Energy Fund as presented by the EEC. Table 3 conveys some of the concerns regarding the proposed approaches.

Table 3: EEC Initial Approaches to Local Energy Fund Use

Approach	Description	Challenges
Village minority ownership	Village jointly owns solar array with private resident(s)	Unknown level of liability for the Village Loss of Investment Tax Credit Potential negative impact for project finance
Partial Loan from Village with Private Investment	Village loans partial funding to private resident(s) to purchase solar array.	Unknown level of collection risk for the Village Potential negative tax liability impact for developer Potential negative impact for project finance
Partial Grant from Village with Private Investment	Village grants partial project funds to private resident to purchase solar array.	Unknown project selection criteria Potential loss of Investment Tax Credit Grants not paid back, Fund spent down to $0
Village Wholly Owned	Village owns solar array that serves private residents	Unknown level of liability for the Village Loss of Investment Tax Credit Potential negative impact for project finance
Complete Loan from Village	Village loans total funding to private resident to purchase solar array.	Unknown level of collection risk for the Village Unknown tax liability impact for developer Potential negative impact for project finance

Complete Grant from Village	Village grants total project funds to private resident to purchase solar array.	Unknown project selection criteria Potential loss of Investment Tax Credit Grants not paid back, Fund spent down to $0 faster

The EEC submitted a subsequent approach for renewable energy resource development for consideration by the Board. Table 4 conveys this additional approach and the challenges that Staff has identified as potential barriers the proposal presents from a project finance point of view.

Table 4: EEC Addendum Approaches to Renewable Energy Resource Development

Approach	Description	Challenges
MEA to fund utility-scale renewable energy project through MEA program	Village requires MEA supplier to procure electricity from utility-scale renewable energy resources	**Village must commit to a single supplier for 20+ yrs** - City loses leverage on pricing non-renewable energy supplies - MEA contracts are contracts with individual consumers – which are not considered creditworthy - The Village would need to backstop the credit requirements to build the project **MEA statute requires that consumers must be allowed to exit the MEA program** - Customers could leave the aggregation leaving remaining consumers to carry heavier price obligations. - The risk of losing buyer with no buyout would prevent project finance for the designated renewable energy resource.

In light of concerns raised concerning the negative impacts on project finance posed by some of the approaches proposed by the EEC, Staff has developed a range of alternative approaches to using the Local Energy Fund that are more consistent with commercial project financing requirements. Table 5 conveys these options and their relative advantages to supporting local renewable energy resource development.

Table 5: Alternative Approaches to Local Energy Fund Use

Approach	Description	Advantages
Distributed Generation at Village Facilities	Village engages private developer to install solar arrays on Village facilities to offset utility costs	Lower utility costs benefit all Village residents Village controls rooftops (lower cost) Village's credit can support long-term PPA
Community Solar installation at Village Hall	Village engages private developer to install solar array on Village Hall to which residents can subscribe through the Village MEA program	Community solar credits can be accessed by residents that do not have suitable roofs Village's credit or Local Energy Fund can support long-term PPA Village controls rooftop (lower cost)
Community Solar Subscriptions for Village Facilities	Village engages private developers to secure community solar subscriptions for Village accounts	Community solar credits can be accessed by Village to reduce operating costs Lower utility costs benefit all Village residents Village's credit can support long-term PPA
Credit Enhancement for local rooftop solar installations	Village uses Local Energy Project fund to provide credit enhancement to resident(s) seeking to install rooftop solar	Transfers collection risk to non-Village party Little to no impact to federal tax benefits Potential net beneficial to project finance

These alternative approaches to Local Energy Fund use seek to optimize the leverage and use of available funds, limit the liability of the Village, and provide returns to the broadest population of Village residents.

RECOMMENDATIONS

Staff has evaluated the range of options for using Local Energy Funds presented by the EEC and those generated by staff according to the principles presented by the EEC and the addition of Commercial viability (i.e. the ability to attract project financing). Table 6 conveys the results of the evaluation.

Table 6: Ranking of Options for Use of Local Energy Funds

Project Concepts	Efficiency	Transparency	Focus	Participation	Progress	Comm. Viability
Initial Recommendations from EEC						
Village minority ownership						
Partial Loan with Private Investment						
Partial Grant with Private Investment						
Village Wholly Owned Solar						
Complete Solar Loan						
Complete Solar Grant						
Addendum Recommendations from EEC						
Long-term MEA purchase from Utility-scale renewable energy resource						
Alternative Approaches from Staff						
Solar at Village Facilities						
Community Solar at Village Hall & MEA						
Subscribe Village Accts to Community Solar						
Credit enhancement for Village residents						

Key for above table	
	The approach appears to be likely to fully meet the principle goal
	The approach appears to be have challenges fully meet the principle goal
	The approach appears to be unlikely to fully meet the principle goal

Definitions for Evaluation Criteria as defined by the EEC

Efficiency: Seek to stretch the impact of the funds as much as possible while balancing the need to be inclusive in terms of potential project beneficiaries

Transparency: Produce a fair and transparent process to choose investment projects.

Focus: Act with current known information, then adjust as new information is introduced. Focus on Solar until proper research on Wind can be conducted and known issues resolved. Work with existing players vetted by community actors. Consider other players on a project basis, or a biennial review process.

Participation: Market/Publicize the projects to garner public support as well as encourage private investment in renewable energy.

Progress**:** Break ground breaks ground on a local solar resource by August of 2018.

As noted, several options exist for the Village that meet some or all of the EEEC's principles along with the additional item of commercial viability. If the Village determines that project financing does leverage the Local Energy Funds to maximize positive impacts for the village, then staff recommends that staff be directed to undertake appropriate due diligence to more fully develop options that indicate a high level of commercial viability. In order of priority, staff recommends the further development of the following options:

- Partial Village Grant to Private Residents' Solar Projects
- Full Village Grant to Private Residents' Solar Projects
- Solar installations on Village Facilities
- Community Solar installation hosted on the Village Hall roof
- Subscribe Village facilities to Community Solar installations
- Provide credit enhancement for Private Residents' Solar Projects

Currently, staff projects that an appropriate level of due diligence for the above options for the Local Energy Fund can be completed by May 2018, and a Plan can be presented to the Board by the end of July 2018.