

COUNCIL ACTION FORM

SUBJECT: DEVELOPMENT AND OPERATION OF A TWO MW COMMUNITY SOLAR FARM

BACKGROUND:

Ames electric customers have shown interest in the development of a community solar photovoltaic (PV) power project in Ames. A community solar project allows electric customers the opportunity to share some of the benefits of solar power, even if they cannot, or prefer not to, install solar panels on their home, business, or property.

The purpose of this Council Action Form is to request approval of the contract with the preferred developer, thereby moving forward with the project even though the commitment from the ratepayers is less than the 80% threshold that was originally established.

In response to this interest in a community solar project, the City contracted with Wind Utility Consulting, PC to evaluate options for the development of a large community solar project in Ames. Three basic options were evaluated.

- Option 1 is for the City to develop, finance, and own the solar project. All costs would be essentially socialized or spread to all customers, just like the costs for the City's wind energy contract. In essence all customers would participate in the project.
- Option 2 is for the City to develop, finance, and own the solar project. However, Ames customers would have the option to participate in the project. Only those who participate would share in the costs of the project and the benefits.
- Option 3 is for a for-profit company would build and own the solar project, and sell the City the solar power. Since the City is a non-profit entity, it cannot take advantage of the federal income tax benefits available for solar projects. This option allows the private developer to benefit from the tax credits, which would reduce the cost of the project to the City. Any time after six years of operation, the City would have the option of purchasing the solar project from the for-profit company at a greatly reduced cost. Under this option, Ames customers would have the option to participate in the project.

On October 18, 2016, the Electric Utility Operations Review Advisory Board (EUORAB) and the City Council held a joint workshop regarding Community Solar. Tom Wind, from Wind Consulting LLC presented his report on the three possible financial models. Subsequently, EUORAB held a meeting on November 1, 2016 to discuss the report findings and hear from the public. Both the staff and the public present at the meeting favored Option 3: Third Party Ownership with Customer Participation.

Option 3 provides the following benefits:

- Third party ownership allows the project to take advantage of the income tax credits then subsequently taking advantage of the City's low cost financing. In this way, the cost of the solar power would most likely be less expensive than for Options 1 or 2.
- Allowing electric customers to make contributions to support the development and construction of a community solar array will gauge interest in the project through participation.
- Some customers with an interest in solar power may not be able to install or own their own solar array for various reasons, such as: 1) they are renters, 2) their roof or property is not suitable for a solar array, 3) they don't want the hassle of doing their own solar array, or 4) their electricity usage is too low to make a small solar array economically viable. By allowing individual customers to participate, these customers can directly receive the benefits of solar energy.
- Of note, the actual delivered cost of the solar power will be higher than the cost of the City's other sources of power in the near term, and there is no assurance that this solar power will ever be less expensive.

At the November 1, 2016 EUORAB meeting, EUORAB voted to support Option 3 and forwarded their recommendation to the City Council, which was approved on December 14, 2016. Subsequently, the City Council approved the issuance of a Request for Proposal to contract with a third party developer to design, own, and operate a 2 MW community solar farm.

Since that time, Electric Services has been working to implement a community solar project in support of a City Council Goal to expand sustainability efforts. The project, identified as SunSmart Ames, has three components – Site Selection, Power Purchase Agreement with the solar developer, and an Electric Customer Participation Program. Electric Services has been working on each of these three components in parallel. Ultimately, the goal was to present to the City Council an Energy Services Agreement (ESA) with the preferred developer in combination with a Customer Participation program where at least 80% of the project has been subscribed.

It should be remembered that the approach being recommended for our solar farm is similar to the one adopted by the Cedar Falls Utility. This approach calls for a private developer to take advantage of existing federal tax incentives and construct the solar farm. The City's role in this partnership is to purchase the power generated from this private facility through an Energy Services Agreement. In addition, the City is expected to sell to interested electric customers shares of the energy output in the form of power packs. The revenue obtained through these sales will be used to pay for the monthly financial obligation to the private developer under the Energy Services Agreement. In this way, the cost of the farm is not subsidized by the general customer base.

COMPONENT 1 - SITE SELECTION:

The preferred site (outlined in green below) is located adjacent the Ames Municipal Airport. It is ideally suited for solar development and has the public visibility that benefits a community solar farm. This land is owned by the City. The land is currently farmed, and the rent revenue is used to support the ongoing operation of the Ames Municipal Airport.

The City has received initial approval from the Federal Aviation Administration (FAA) that a solar farm at this location causes no hazards to aviation traffic. Upon final selection of a developer, the FAA analysis will have to be updated to reflect the specifics of the preferred developer's design.



COMPONENT 2 - DEVELOPER SELECTION:

On May 2, 2017, a Request for Proposal (RFP) was issued to 94 developers for proposals to build, own, and operate a two megawatt solar farm. The RFP was advertised on the Current Bid Opportunities section of the Purchasing webpage, and was also sent to two plan rooms and one citizen. On June 23, 2017, staff received proposals from 14 developers. The evaluation team was composed of staff from Electric Services, Iowa State University Facilities Planning & Management Utilities, and the City's consultant. Proposals were independently evaluated and ranked in two steps:

STEP 1:

The proposals were evaluated based on compliance with proposal documents. This criterion was rated on a Pass/Fail basis.

STEP 2:

The proposals were evaluated based on: 1) Price of a 25-year Power Purchase Agreement (PPA), and estimated project buyout costs; 2) Annual production estimates; 3) Annual performance guarantees; 4) Performance history and reliability of the equipment specified for this project in similar environments; 5) Strength and experience of the Developer's project team and proven expertise of the project team; 6) System and component product warranties; developer's proposed project financing capability and structure; project schedule; and experience with building at or near an airport location.

Each score was based on a scale of 1 to 10. Overall, 5,000 possible points were available cumulatively for each developer that responded. The price accounted for 50% of the RFP score and the Developer's approach; performance history and strength of developer's proposal; equipment selected; financing; warranties; and guarantees offered account for the other 50%.

The evaluated points and cost per megawatt hour are listed below:

Developers	Total Scores	Power Purchase Agreement per Megawatt Hour
ForeFront Power, San Francisco, CA	3975	\$60.00
Red Lion Renewables, Norwalk, IA	3944	\$60.00
Current Renewable Efficiencies, West Des Moines, IA	3818	\$63.90
Azimuth Energy, St Louis, MO	3609	\$67.50
The Conti Group, Edison, NJ	3472	\$72.00
GroSolar, White River Junction, VT	3435	\$68.00
Sunvest Solar, Inc, Pewaukee, WI	3345	\$71.00
RER Energy Group, Reading, PA	3048	\$85.00
Atwood Electric, Inc., Sigourney, IA	3022	\$80.00
NextEra Energy Resources Acquisitions, LLC, San Francisco, CA	2965	\$89.85
Guzman Energy, Coral Gables, FL	2903	\$89.75
Inovateus Solar, LLC, South Bend, IN	2854	\$88.50
Syncarpha Solar, LLC, New York, NY	2807	\$104.00
United States Solar Corporation, Minneapolis, MN	2691	\$69.00

The top four scoring developers were invited for interviews. Each provided a brief presentation introducing the team members, their roles, and the details in their proposal. Interviews were evaluated based on a clear understanding of the project and scope of

services, response to prepared questions and other questions during the interview, a cohesive team approach, methods for achieving the desired outcomes, their ability to complete the proposed scope of services and defining what sets them apart from other developers. As with the proposal scoring, each criterion was weighted and given a score based on a scale of 1 to 10, with a maximum possible score of 5,000.

Based on the interviews, responses to the follow up questions and the determination of the best value to the Utility rate payers and the City, the evaluation team ranked the final four developers as follows:

Developers	Proposal Score	Interview Scores	Total Score	Rank	Price/ mWh
ForeFront Power, San Francisco, CA	3975	3250	7225	1	\$60.00
Current Renewable Efficiencies, West Des Moines, IA	3818	3205	7023	2	\$63.90
Red Lion Renewables, Norwalk, IA	3944	3065	7009	3	\$60.00*
Azimuth Energy, St Louis, MO	3609	2890	6499	4	\$67.50

* assuming the \$15/mWh state tax credit is extended beyond December 31, 2017

Evaluating on price per megawatt alone is somewhat misleading given each design will operate differently. Depending on the brand of solar panels used and racking system design, the amount of energy produced changes. Therefore, a low cost developer may have a more expensive project when the amount of energy produced is also considered. This is due to the fact that the energy services agreement links the monthly bill to the amount of energy produced. The energy produced also has a bearing on the cost of the power packs sold to the retail electric customer.

Developers	Price/ mWh	Est. yearly energy production (in mWh)	Yearly Cost Of ESA	Est. Cost of ESA Over 25 Year Life of Project (in millions)
ForeFront Power, San Francisco, CA	\$60.00	2,977	\$178,620	\$4.465 M
Current Renewable Efficiencies, West Des Moines, IA	\$63.90	2,637	\$168,504	\$4.213 M
Red Lion Renewables, Norwalk, IA				
Fixed mounted w/ state tax credit	\$60.00	2,408	\$144,480	\$3.612 M
Tilt mounted w/state tax credit	\$60.00	2,748	\$164,880	\$4.122 M
Fixed mounted no state tax credit	\$75.00	2,408	\$180,600	\$4.515 M
Tilt mounted no state tax credit	\$75.00	2,748	\$206,100	\$5.153 M
Azimuth Energy, St Louis, MO	\$67.50	2,563	\$173,009	\$4.325 M

Based on the total scores and a unanimous decision by the evaluation team, staff has concluded that ForeFront Power provides the best value for the ratepayers, offering 13% more energy over the next best proposal for only a 6% increase in total

project cost. Furthermore, the staff believes the system being offered by ForeFront will be able to handle peak demand better due to its design, the developer offers a stable financing package, and the panels will be more visible from Highway 30.

At the time the City approved the Letter of Intent with ForeFront, this project was not to move forward until at least 80% of the project has been committed to by the ratepayers, so the City Council approved a Letter of Intent (LOI) with Forefront Power, San Francisco, CA to:

1. Finalize the negotiations of the purchase power agreement
2. Utilize its marketing support to help attract participation in the project.
3. Extend the term of the proposal.
4. Commit to work exclusively with the developer during the term of the LOI.

COMPONENT 3 - CUSTOMER PARTICIPATION:

Interested electric customers have been subscribing to “Power Packs” in the SunSmart Ames project, and upon execution of a developer’s contract, will pay a one-time fee in return for billing credits equal to their pro-rated share of monthly generation output from the farm. The community solar farm will be entirely paid for through subscriptions made by the customers. **At present, Electric Services has received “Intent to Purchase” forms for approximately 70% of full capacity of the project.**

Staff has been working diligently to inform our customers about this project in an effort to meet the 80% goal. Towards this end, SunSmart Ames brand was created to market the solar project using multiple communication methods. As expected, there was an initial surge of interest that was kicked-off through a series of public meetings held at the Ames Public Library. To continue the momentum, marketing methods included traditional media such as print ads in the Ames Tribune, Ames Bulletin Board, Wheatsfield newsletter, and City Side monthly utility bill newsletter. Radio ads aired on KASI/KCCQ, sponsorship ads were put on Iowa Public Radio and KHOI. Commercials for SunSmart aired on Mediacom channels and City Channel 12.

Representatives of Ames Electric Services promoted SunSmart Ames at events including Eco Fair, Ames Home + Garden Show, Farmers’ Market, Senior Variety Show, and various speaking engagements including civic and religious groups. There were months of social media posts on Twitter, Facebook, and Instagram, as well as boosted (purchased) social media posts. Also, a vinyl banner was displayed in front of the Power Plant promoting the program.

Finally, staff has had great success with SunSmart Ames participants requesting yard signs supporting the program. One of the unexpected aspects of marketing the community solar farm was the grassroots support from residents. Several passionate participants have asked to help market the program, taken flyers to various groups, arranged speaking engagements, and encouraged participation from friends, neighbors, and others.

COMMITMENT TO THE DEVELOPER AND NEXT STEPS:

Staff has received executed contracts from ForeFront Power with a flat cost at \$60/MWh. **However, over the past several days, staff was able to negotiate a slightly lower contract price of \$59/MWh with no changes to the rest of the contract. This lower price will decrease the cost of a Power Pack by an amount yet to be determined.**

To accept this lower price, ForeFront is requiring that the City be the first party to sign the agreement as a good faith indication of intent to proceed. This is atypical; it is customary that the City be the last party to sign such agreements.

Upon approval of the contract with ForeFront, staff will finalize the Customer Agreement that will convert the Power Pack “pledges” into “commitments.” Payments will be requested from customers who indicated a willingness to participate. Beginning in September, pledged customers will receive their information packets and agreements. These packets will continue being sent to pledged customers and new enrollees until the project goes commercial in 2020. It is worth noting that if someone wishes to participate, but failed to pledge, there still is room to participate.

Staff will also be completing work on internal processes, such as billing software additions, and financing, that will be done to implement the addition of SunSmart Ames on a customer’s bill. Staff anticipates these steps may result in additional costs being incurred, which may require later Council approval.

ALTERNATIVES:

1. Award an Energy Services Agreement to ForeFront Power of San Francisco, CA to construct and maintain a 2 MW Community Solar Farm at the Airport site at a contract price of \$59/MWh.

Because the project is not fully subscribed, any unallocated energy will be allocated to Ames electric customers and paid for from the Fuels and Energy budget in the same manner the Wind contract is allocated and paid. It is difficult to determine how much this will cost ratepayers since staff will continue to market this project in the hope of gaining additional participants.

2. Award the contract to ForeFront Power of San Francisco, CA., but reduce the size of the Community Solar Farm to meet revised program demand estimates.

This alternative will likely cause the developer to change the contract price.

3. Delay the project until the minimum number of shares are enrolled in the program.

This alternative may cause the developer to walk away from the project and the City will have to issue a new Request for Proposal.

4. Do not award a contract with a private developer nor move ahead with the Community Solar Farm.

CITY MANAGER'S RECOMMENDED ACTION:

Despite staff's efforts, the original participation goal of 80% has not yet been met. However, the creation of a Community Solar Farm is an important component of the City Council's desire to expand the City's sustainability efforts

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To accept this lower price, ForeFront is requiring that the City of Ames be the first party to sign the agreement. Although this is atypical, staff has received verbal commitments from ForeFront that this price is agreeable, and an agreement has been prepared with the lower price included.

Therefore, it is the recommendation of the City Manager that the City Council approve Alternative #1 and award an Energy Services Agreement to ForeFront Power of San Francisco, CA, to construct and maintain a 2 MW Community Solar Farm at the Airport site.