

July 12, 2017

City of Northfield  
801 Washington St  
Northfield, MN 55057

I am happy to present the following Community Solar Garden subscription options.

Fixed Option: 1,912,500 Kwh subscription starting at \$.1099 / kWh escalating at 1% per year for 25 years.

Floating option: 1,912,500 Kwh subscription with a PPA cost of \$.011 below the ARR Bill Credit for 25 years.  
(Please see attached Spreadsheets showing annual financials.)

Notes:

1. IPS Community Solar subscription offer benefits

A. Local: Innovative Power Systems is a local MN based company dedicated only to solar and only in MN.

- We have been in the solar business since 1991, which is longer than any other company.
- We have over 1,000 installations across the state, which is more than any other company.
- We have been recognized by Solar Power World Magazine as one of the top 250 Solar Contractors in the US every year since 2013.
- There has been a lot of discussion about the benefits of doing work with a local CSG developer. Out of the three firms being considered the IPS headquarters are closer to Northfield than any other.

Innovative Power Systems: Roseville, MN - 48 miles

Novel Energy: St Charles, MN - 80 miles

Renesola: Corporate HQ in China

B. Sites: We have more CSG capacity installed in MN than any other competitor.

- 17MW currently operating
- 9.5 MW currently in construction
- 13 MW will start construction in 2017
- 39 MW in late stage development, some of these sites will be started in 2017
- 75 MW+ in initial planning stage for 2018

C. References: Innovative Power has a long list of government entities as CSG subscribers. A select list follows:

Municipal Subscribers: City of Maple Grove, City of Minnetonka, City of Red Wing, Blue Earth County, Metropolitan Council, Schools: University of Minnesota, St Cloud School District, Red Wing School District, Forest Lake School District, Annandale School District, Rockford School

**2670 PATTON ROAD | ST. PAUL, MN 55113 | 651-789-5305 | IPS-SOLAR.COM**

District, Paynesville School District, Lester Prairie School District, Columbia Heights School District, Goodhue County Education District, Lester Prairie School District, Chisago Lakes School District, Triton School District, Trinity School/People of Praise, Zumbrota/Mazeppa School District

2. We have selected to partner with solid and secure financiers. The team we have put together ensures that your community solar garden is properly planned and constructed. The financial strength of the garden owners can't be beat. We only involve financial partners that plan a long-term hold for the investment they make in our gardens. That way you know who you will be dealing with for the whole contract. Some other developers projects are funded by hedge funds that will sell off their interest in a short time.
3. Termination / transfer of contract: We offer simpler, more flexible terms for early termination or transfer of your subscription than other garden operators.
  - a. Subscriptions can be transferred to any of your other facilities at any time with no charge.
  - b. Subscriptions can be transferred to another entity, with operator approval, at any time with no charge.
  - c. Subscriptions can be terminated by you at any time if there is a default by us (the operator).
  - d. In the event of a Subscriber default (IE, Early termination by you), the Subscriber shall be liable to Operator only for actual, direct Damages. There are no additional fees or expenses as some other garden operators have.
4. Timing / Legislative issues: There are some very important issues that should prompt you to make a decision sooner rather than later.
  - a. The gardens being built now are 5MW in size and enjoy certain economies of scale. Those savings allow us to offer better PPA rates than we will be able to offer in the future. Future sites will be 1MW and will not have the same economies of scale.
  - b. The bill credits in the current subscription offerings are based on the Applicable Retail Rate (ARR) of all Xcel customers. The future gardens will be based on a Value of Solar (VOS) bill credit which will be determined by the MN Public Utilities Commission. The VOS bill credit will be lower than what is available now. It will also escalate at a locked in rate over time whereas the ARR credit continues to escalate as Xcel rates escalate over time. The ARR is most certainly going to give much greater savings over time.
  - c. Future Xcel rates: Seeing as the Bill Credits are based directly on the Retail Rates of Xcel, there needs to be thought given to where rates will go in the future. There is some understandable hesitation to enter into a 25 year agreement based on a somewhat unknown bill credit. Some thoughts to consider:
    1. Think back 25 years ago to 1992. What have Xcel rates done since then? The information we have obtained directly from Xcel shows annual increases of around 3.5% since 2000. We follow the electric industry very closely and have not seen a single study that predicts lower electric rates 25 years into the future.

2. Utilities like Xcel do not change operating procedures quickly. Any technology changes to the way they generate electricity would need to have a long and established history before they would implement it into their operations.
  3. The Star Tribune article discussing Xcel rates shows that rates will indeed be flat in 2018. That is only one year and is only a small fraction of a 25 year period. As noted in the article, other dockets under negotiation at the PUC may still cause an increase in the rates Xcel can charge. Even with rates flat in 2018 you still save money with a CSG subscription.
  4. In order for you to actually start losing money, rates would need to drop farther than they have *ever* dropped. For example, in our Fixed proposal you would need a 12% drop in rates or 12 years of flat rates before you were to start going negative. This amount of decrease in Xcel rates has never happened and is not at all likely. The PUC regulates the rates that Xcel can charge. Xcel is so large and serves so many Minnesotans that it will not be allowed to fail.
  5. A long-term contract is actually a benefit to the city in that it provides predictable future costs throughout the term of the agreement. Do you know what your Xcel bill will cost in future years?
  6. If there is a phenomenal new technology that greatly boosts the output of future solar panels, it wouldn't change the output of the panels we install today. The output of this garden is based on estimates using current technology and can be counted on in the future.
- d. Fixed versus Floating rate: When we compare the two options side by side, the savings of the Fixed Rate option is the hands down winner.
- i. Floating Rate Option: This will provide a consistent albeit lower savings over the full term of the contract.
  - ii. Fixed Rate Option: When viewed over a 25 year span Xcel rates are most certainly going up. If you subscribe to a Solar Garden with a fixed rate, every time rates go up your savings increase. If you are not a fixed rate subscriber, you will simply be paying more.

Respectfully Submitted,

Brian Keenan  
Innovative Power Systems, Inc.  
MN Contractor License #20101407



Prepared for:



## Community Solar Garden Cashflow - Fixed rate

PPA Rate: \$ 0.10990  
 PPA Annual Escalator: 1.00%  
 Bill Credit \$ 0.12296  
 Grid Escalator: 2.75%

Type of Service: General  
 Total Subscription (kWh): 1,912,500  
 Term (Years): 25  
 Degradation Factor: 0.50%

| Year | Annual kWh | Bill Credit per kWh | Annual Credit | PPA Cost per kWh | Annual Cost | Annual Savings | Annual Savings | Cumulative Savings |
|------|------------|---------------------|---------------|------------------|-------------|----------------|----------------|--------------------|
| 1    | 1,912,500  | \$0.1230            | \$235,161     | (\$0.1099)       | (\$210,184) | \$24,977       | 12%            | \$24,977           |
| 2    | 1,902,938  | \$0.1258            | \$239,373     | (\$0.1110)       | (\$211,224) | \$28,149       | 13%            | \$53,126           |
| 3    | 1,893,423  | \$0.1287            | \$243,685     | (\$0.1121)       | (\$212,270) | \$31,415       | 15%            | \$84,541           |
| 4    | 1,883,956  | \$0.1317            | \$248,098     | (\$0.1132)       | (\$213,320) | \$34,778       | 16%            | \$119,319          |
| 5    | 1,874,536  | \$0.1348            | \$252,615     | (\$0.1144)       | (\$214,376) | \$38,239       | 18%            | \$157,558          |
| 6    | 1,865,163  | \$0.1379            | \$257,238     | (\$0.1155)       | (\$215,438) | \$41,801       | 19%            | \$199,358          |
| 7    | 1,855,837  | \$0.1412            | \$261,970     | (\$0.1167)       | (\$216,504) | \$45,466       | 21%            | \$244,825          |
| 8    | 1,846,558  | \$0.1445            | \$266,813     | (\$0.1178)       | (\$217,576) | \$49,237       | 23%            | \$294,062          |
| 9    | 1,837,325  | \$0.1479            | \$271,769     | (\$0.1190)       | (\$218,653) | \$53,116       | 24%            | \$347,178          |
| 10   | 1,828,139  | \$0.1514            | \$276,841     | (\$0.1202)       | (\$219,735) | \$57,106       | 26%            | \$404,284          |
| 11   | 1,818,998  | \$0.1550            | \$282,031     | (\$0.1214)       | (\$220,823) | \$61,209       | 28%            | \$465,492          |
| 12   | 1,809,903  | \$0.1588            | \$287,343     | (\$0.1226)       | (\$221,916) | \$65,427       | 29%            | \$530,919          |
| 13   | 1,800,854  | \$0.1626            | \$292,778     | (\$0.1238)       | (\$223,014) | \$69,764       | 31%            | \$600,683          |
| 14   | 1,791,849  | \$0.1665            | \$298,340     | (\$0.1251)       | (\$224,118) | \$74,222       | 33%            | \$674,905          |
| 15   | 1,782,890  | \$0.1705            | \$304,031     | (\$0.1263)       | (\$225,228) | \$78,803       | 35%            | \$753,708          |
| 16   | 1,773,976  | \$0.1747            | \$309,854     | (\$0.1276)       | (\$226,342) | \$83,512       | 37%            | \$837,219          |
| 17   | 1,765,106  | \$0.1789            | \$315,812     | (\$0.1289)       | (\$227,463) | \$88,349       | 39%            | \$925,569          |
| 18   | 1,756,280  | \$0.1833            | \$321,909     | (\$0.1302)       | (\$228,589) | \$93,320       | 41%            | \$1,018,889        |
| 19   | 1,747,499  | \$0.1878            | \$328,146     | (\$0.1315)       | (\$229,720) | \$98,426       | 43%            | \$1,117,315        |
| 20   | 1,738,761  | \$0.1924            | \$334,528     | (\$0.1328)       | (\$230,857) | \$103,671      | 45%            | \$1,220,985        |
| 21   | 1,730,068  | \$0.1971            | \$341,057     | (\$0.1341)       | (\$232,000) | \$109,057      | 47%            | \$1,330,043        |
| 22   | 1,721,417  | \$0.2020            | \$347,738     | (\$0.1354)       | (\$233,149) | \$114,589      | 49%            | \$1,444,632        |
| 23   | 1,712,810  | \$0.2070            | \$354,572     | (\$0.1368)       | (\$234,303) | \$120,269      | 51%            | \$1,564,901        |
| 24   | 1,704,246  | \$0.2122            | \$361,564     | (\$0.1382)       | (\$235,462) | \$126,101      | 54%            | \$1,691,002        |
| 25   | 1,695,725  | \$0.2174            | \$368,716     | (\$0.1395)       | (\$236,628) | \$132,088      | 56%            | \$1,823,090        |

\* Bill Credit assumes 2.75% Grid Escalator

\* Bill Credit includes \$0.02 REC with no escalation

NPV at 5% discount \$874,950



Prepared for:



## Community Solar Garden Cashflow - Floating rate - \$0.011

### Inputs

PPA Rate: n/a  
 PPA Annual Escalator: n/a  
 Bill Credit \$ 0.12296  
 Grid Escalator: 2.75%

Type of Service: General  
 Total Subscription (kWh): 1,912,500  
 Term (Years): 25  
 Degradation Factor: 0.50%

| Year | Annual kWh | Bill Credit per kWh | Annual Credit | PPA Cost per kWh | Annual Cost | Annual Savings | Annual Savings | Cumulative Savings |
|------|------------|---------------------|---------------|------------------|-------------|----------------|----------------|--------------------|
| 1    | 1,912,500  | \$0.122960          | \$235,161     | (\$0.11196)      | (\$214,124) | \$21,038       | 9.8%           | \$21,038           |
| 2    | 1,902,938  | \$0.125791          | \$239,373     | (\$0.11479)      | (\$218,441) | \$20,932       | 9.6%           | \$41,970           |
| 3    | 1,893,423  | \$0.128701          | \$243,685     | (\$0.11770)      | (\$222,857) | \$20,828       | 9.3%           | \$62,797           |
| 4    | 1,883,956  | \$0.131690          | \$248,098     | (\$0.12069)      | (\$227,374) | \$20,724       | 9.1%           | \$83,521           |
| 5    | 1,874,536  | \$0.134761          | \$252,615     | (\$0.12376)      | (\$231,995) | \$20,620       | 8.9%           | \$104,141          |
| 6    | 1,865,163  | \$0.137917          | \$257,238     | (\$0.12692)      | (\$236,722) | \$20,517       | 8.7%           | \$124,658          |
| 7    | 1,855,837  | \$0.141160          | \$261,970     | (\$0.13016)      | (\$241,556) | \$20,414       | 8.5%           | \$145,072          |
| 8    | 1,846,558  | \$0.144492          | \$266,813     | (\$0.13349)      | (\$246,501) | \$20,312       | 8.2%           | \$165,384          |
| 9    | 1,837,325  | \$0.147916          | \$271,769     | (\$0.13692)      | (\$251,558) | \$20,211       | 8.0%           | \$185,595          |
| 10   | 1,828,139  | \$0.151433          | \$276,841     | (\$0.14043)      | (\$256,731) | \$20,110       | 7.8%           | \$205,704          |
| 11   | 1,818,998  | \$0.155048          | \$282,031     | (\$0.14405)      | (\$262,022) | \$20,009       | 7.6%           | \$225,713          |
| 12   | 1,809,903  | \$0.158761          | \$287,343     | (\$0.14776)      | (\$267,434) | \$19,909       | 7.4%           | \$245,622          |
| 13   | 1,800,854  | \$0.162577          | \$292,778     | (\$0.15158)      | (\$272,969) | \$19,809       | 7.3%           | \$265,431          |
| 14   | 1,791,849  | \$0.166498          | \$298,340     | (\$0.15550)      | (\$278,629) | \$19,710       | 7.1%           | \$285,142          |
| 15   | 1,782,890  | \$0.170527          | \$304,031     | (\$0.15953)      | (\$284,419) | \$19,612       | 6.9%           | \$304,754          |
| 16   | 1,773,976  | \$0.174666          | \$309,854     | (\$0.16367)      | (\$290,340) | \$19,514       | 6.7%           | \$324,267          |
| 17   | 1,765,106  | \$0.178920          | \$315,812     | (\$0.16792)      | (\$296,396) | \$19,416       | 6.6%           | \$343,683          |
| 18   | 1,756,280  | \$0.183290          | \$321,909     | (\$0.17229)      | (\$302,590) | \$19,319       | 6.4%           | \$363,003          |
| 19   | 1,747,499  | \$0.187780          | \$328,146     | (\$0.17678)      | (\$308,924) | \$19,222       | 6.2%           | \$382,225          |
| 20   | 1,738,761  | \$0.192394          | \$334,528     | (\$0.18139)      | (\$315,402) | \$19,126       | 6.1%           | \$401,351          |
| 21   | 1,730,068  | \$0.197135          | \$341,057     | (\$0.18614)      | (\$322,027) | \$19,031       | 5.9%           | \$420,382          |
| 22   | 1,721,417  | \$0.202007          | \$347,738     | (\$0.19101)      | (\$328,802) | \$18,936       | 5.8%           | \$439,318          |
| 23   | 1,712,810  | \$0.207012          | \$354,572     | (\$0.19601)      | (\$335,731) | \$18,841       | 5.6%           | \$458,159          |
| 24   | 1,704,246  | \$0.212155          | \$361,564     | (\$0.20115)      | (\$342,817) | \$18,747       | 5.5%           | \$476,905          |
| 25   | 1,695,725  | \$0.217439          | \$368,716     | (\$0.20644)      | (\$350,063) | \$18,653       | 5.3%           | \$495,558          |

\* Bill Credit assumes 2.75% Grid Escalator

NPV at 5% discount

\$282,850

\* Bill Credit includes \$0.02 REC with no escalation