STATE OF MINNESOTA

BEFORE THE

PUBLIC UTILITIES COMMISSION

In the Matter of a Request by Xcel Energy to Issue Renewable Development Fund Cycle 4 Requests for Proposals and Petition for Approval of a Standard Grant Contract	))))	Docket No. E-002/M-12-1278

SUPPLEMENTAL REPLY COMMENTS OF MINNESOTA GO SOLAR LLC

Minnesota Go Solar LLC ("Go Solar") submits these reply comments in accordance with the Commission's December 16, 2013, Notice of Extended Period for Reply Comments on Xcel Energy's December 12, 2013 (the "Xcel Reply Comments"), filing regarding the Renewable Development Fund ("RDF") Selection Report.

I. INTRODUCTION.

The Xcel Reply Comments do little to support the proposition that the RDF selections adhered to the RDF statute. To the contrary, the Reply Comments refer to the RDF statutory criteria as only "policy guidance". The plain language of the statute confirms that the RDF statutory criteria are more than mere suggestions. The only evidence that Xcel adhered to the statutory requirements is Xcel's bare assertion that it did so. On the other hand, a review of the minutes and notes of the advisory group (the "AG")[1] meetings, as well as the other documents produced by Xcel, tell a different story.

[1] The Xcel Reply Comments have disclosed for the first time that there was a third Xcel Energy representative on the AG. The Xcel Reply Comments state that Mike Bull was in attendance at the June 12, 2013, selection meeting but did not represent Xcel. The AG meeting minutes state to the contrary—listing Mike Bull, Tami Gunderzik and Kevin Schwain as member of the AG and as Xcel representatives on the AG and showing Mike Bull as an active

II. THE ADVISORY GROUP MINUTES AND NOTES.

The minutes of the AG selection meeting show an absence of any discussion of the RDF statutory criteria. The meeting minutes state that Paul Lehman explained the goals for the meeting as "gaining input and feedback from the group so that the Company can make an informed decision." [PC 1]. The direction that Paul Lehman provided to the AG was: "Besides the scoring, the group should look at diversity in location, project types, and technology." [PC 1]. No mention of the RDF statutory criteria was mentioned.

After that direction from Lehman, certain members of the AG outlined certain extra-statutory criteria, and criteria that were neither approved by the Commission, listed in the statute, *nor disclosed in the request for proposals as being a factor or a consideration*. Rather, the selection process was analogized to an ice skating competition with the AG being delegated the task of providing the "artistic" scoring to complement the "technical" scoring provided by Sargent & Lundy (the "IE"). Even in a skating competition, however, the technical score is a predefined weight of the final score, and in the case of the artistic score, there are factors and criteria disclosed to competitors in advance. Here, Xcel and the AG felt unconstrained by the technical scores, engaged in a process that gave no predefined weight to the IE evaluation, and used criteria that were not disclosed. If the Commission approves such a process, then there is really no oversight at all, and in the future the Commission should save everyone the trouble of going through a review process that is a mere façade or a rubber-stamp.

III. THE ARTFUL DODGER.

The Xcel Reply Comments would make Jack Dawkins smile. They are a modern day utility version of artful dodging—making a series of statements that make it sound as if

participant in making selections. *See*, PC 1. Note, for ease of citation, Go Solar has included its attachment exhibits in printed case [PC] format with specific page references to the printed case.

justifiable choices were made, but upon close examination are inherently contradictory and fall under their own weight.

One such excerpt is found at page 18 of the Xcel Reply Comments in which Xcel attempts to justify its deviation from the IE report.

> The advisory group considered the independent expert's evaluation as well as observations from within the group that represents various stakeholders of the RDF. Given that 63 percent of proposals submitted were for solar initiatives, the technical score ranking heavily reflected the total resource cost component of the various bids. However, this total resource cost calculation, while a marker of cost effectiveness, does not consider other factors, including incremental cost to our customers through a PPA or net metering arrangement that increases the amount of support our customers must provide to a particular project. Consistent with the RDF selection process, the advisory group was not obligated to select projects solely on the basis of technical rankings but can make selections to ensure a diverse mix of resource types.

There are several observations to make regarding those statements, which Xcel proffers as justification for deviating from the IE's scoring[2] and creating additional previously unannounced criteria.

First, the relevance of the percent of proposals from solar being 63% seems irrelevant to any criteria. The RFP asked for energy production proposals and limited the individual facility size to less than 1MW. What type of proposals did Xcel believe that it would receive? In any event, Xcel makes that statement intending to lead the reader to believe that because of such high percentage of solar proposals, Xcel was justified in discounting, or discarding, the statutory and pre-announced RFP criteria. Xcel's statement, however, is more curious because 10 out of the 13 (or 76%) of the recommended projects were solar, confirming the irrelevance of that statement.

[2] The Xcel Reply Comments confirm that the scoring matrix done by the IE incorporated the statutory framework and other selection criteria announced to proponents. *See*, Xcel Reply Comments at p. 3. Deviation from the only determination that is both objective, and free of conflict of interest should carry a heavy burden.

Second, Xcel's statement that the total resource score "does not consider other factors, including incremental cost to our customers through a PPA" shows that Xcel does not even understand the scoring. As Go Solar has said in its previous filings, Go Solar should have received the highest number of points in the total resource cost ("TRC") category, but did not because of being inappropriately penalized for a proposed PPA rate at avoided costs. As a result, contrary to Xcel's assertion, not only was Go Solar's score improperly lowered by 15 points by a hypothetical PPA rate (and taken into account in the IE scoring), but Go Solar still, even with that improper penalty, scored higher than any other project.

Third, Xcel is correct when it states: "total resource cost calculation . . . does not consider . . . [a] net metering arrangement that increases the amount of support our customers must provide to a particular project." That point was made by Go Solar in its petition. It was also emphasized by AG member Ben Gerber.[3] Yet despite Xcel's mention of that as a reason to ignore the scoring, there is not one instance where any quantitative analysis was done that reflected the additional cost of net metering projects. As Xcel's comment correctly implicitly notes, a net metering project is the equivalent of a PPA at full retail rates. Yet neither the technical IE score nor Xcel's alleged "artistic" score takes that into account. That results in all net metering projects being scored much higher than they should have been. Thus, Xcel mentions it as a reason to deviation from the IE scoring but yet does not implement that factor in its selections, and indeed selects projects inconsistent with that statement, confirming that it is just an attempt at obfuscation.

Fourth, Xcel's concluding statement in that explanation makes no sense. Xcel states:

[3] *See*, PC 2.

> Consistent with the RDF selection process, the advisory group was not obligated to select projects solely on the basis of technical rankings but can make selections to ensure a diverse mix of resource types.

Read in conjunction with the immediately preceding sentences, that statement makes no sense, and highlights the fact that the words on the page are but mere fluff and a smokescreen. Xcel had just explained how the TRC does not reflect the true, and much higher, cost of net metered projects, but then proceeded to select almost all net metered projects, all of which benefitted from an artificially high score because their true, much higher, cost was not taken into account. Xcel had just explained how because such a large amount—63% of the projects—proposed were solar, it needed to come up with its own additional criteria. Then Xcel proceeded to select solar for 10 (76%) out of the 13 projects. Xcel's rationale for the deviation from statutory and pre-announced RFP criteria is simply not intelligible or supportable, and is a mere artful dodge of the fact that it lacks any such justification for its deviation.

IV. THE CHANGING ADDITIONAL CRITERIA AND THE INCONSISTENT SELECTIONS.

One of the more striking features of the entire process is how from the beginning of the selection meeting the AG and Xcel created new criteria for selection, then proceeded to alter, or apply or not apply, that new criteria during the meeting on an ad hoc basis. Then when all was said and done Xcel and the AG produced a set of selections (out of order from the IE score and the statutory criteria) supposedly justified by those additional, inconsistently applied, criteria. Xcel and the AG did so while at the same time discarding projects such as Go Solar that had all of the purportedly favorable new criteria which has been used by Xcel to justify the out of order selections.

At the beginning of the AG selection meeting, the minutes reflect the following criteria as being important to the AG[4]:

> Ben: many of the proposals are asking money to do things that are already done, for example, putting solar panels on building roofs. Is this what we want to fund? In his opinion, the funding goal should be more experimental and valuable. There is a problem if the ratepayers first pay for solar panels from RDF and then pay again in rates because of lost sales.
>
> Kevin: looking for market penetration of renewable energy, low cost, and balance. All projects need not be fancy and experimental.
>
> Linda: on Ben's side: there needs to be something there, innovative aspects and whether those aspects are convincing.
>
> Tami: awareness and visibility are factors to consider, too. I see the evaluator scoring as the technical marks, and the artistic marks are for the group to decide.
>
> Mike: there are two fundamental issues: 1) royalty issues, especially in the UMN proposals, and 2) RECs, which RDF needs to get.

As the meeting progressed there are other examples of creating new criteria along the way, such as, without limitation, the following:

1. EP4-9 moved up from a Tier 2 project based solely upon the fact that it is located in Wisconsin[5], a criteria not previously announced, which is the equivalent of a criteria that says the RDF will fund the best project in Wisconsin even if it is much worse then almost two dozen projects in Minnesota. Clearly that new criteria that the best project in Wisconsin gets selected does not comport with either the RDF statutory criteria or the pre-announced criteria in the RFP.

[4] *See*, PC 1.

[5] *See*, PC 2, Comments of non-AG member/AG member Mike Bull.

2. EP4-15 MN Renewable Energy Society, a Tier 3 project and one of the lowest scored, moved up without explanation, but presenting a clear conflict of interest. (See PC 2);

With respect to EP4-15, AG member Ben Gerber stated:

> I am extremely uncomfortable funding the MRES project at any level. It was extremely deficient in detail and received a do not recommend from our scoring agency. After the board meeting I looked up MRES and Eric Jensen is their Board Chair. While it may be okay to support the project if it received a recommendation from the disinterested reviewing party this is not the case. I would likely submit a dissenting letter to the PUC if we fund this project out of principle as a ratepayer advocate on the board.

These examples call into question the entire process and cast doubt on every decision made by Xcel and the AG. They also show how the process significantly and without justification deviated from the statutory criteria and the criteria in the RFP.

V. XCEL'S PURPORTED REASONS FOR DEVIATING FROM THE IE SCORING AND NOT SELECTING GO SOLAR FOR ANY AWARD ARE UNSUPPORTABLE.

In its Reply Comments, at Attachment K, page 1, Xcel provides its reasons for deviating from the IE scoring and not selecting Go Solar for any award.[6] Those are stated as:

> Was disfavored by the advisory group as it would require too large of a portion of the funds anticipated to be awarded to EP projects (over a third of available funds). The energy price per kWh was high relative to other EP proposals and the locations for constructing the facilities were still open, which adds uncertainty. From prior experience, RDF proposals that do not have specific sites identified or a very clear plan to identify sites have significant project delays. Further, the overall timeline proposed for the project was not long enough based on the Company's prior experiences negotiating power purchase agreements for projects of the scale proposed.

Go Solar will address them in reverse order:

[6] Although Xcel has alleged that it only considers full or no award, that is a rule or procedure not previously announced, and is also contradicted in this RDF Cycle by Xcel's award to MnSCU. *See*, Xcel Reply Comments at pp.18-19. It is also contradicted by Tami Gunderzik's meeting notes which indicate that discussion was held regarding reducing the Go Solar proposal to five sites. *See*, PC 36. *See also*, PC5, Comments of Heather Westra regarding EP4-36 suggesting a lower award than requested.

The Timeline for a PPA. Xcel claims and the minutes confirm that one member of the AG claimed that the "timeline allows only 4 months to negotiate PPAs, which is too short." If anyone has followed the recent Xcel wind acquisition docket, they know that 4 months to negotiate a PPA is more than enough time. In fact, this year in the case of Docket 13-603, the PPAs for hundreds of megawatts of wind were negotiated in less than two months. Moreover, in the case of Go Solar, there is an existing precedent PPA agreement for the Slayton Solar project that could have been used for a PPA, which would have shortened the time even more. There was clearly no basis on which to consider 4 months too short a time to negotiate a PPA with Xcel.

The locations of the sites. Xcel claims (and the AG minutes confirm) the same member of the AG stated that the locations for constructing the facilities were "still open, which adds uncertainty." [PC 4]. Xcel's justification for rejecting Go Solar and rejecting the IE and statutory criteria is thus that from "prior experience, RDF proposals that do not have specific sites identified or a very clear plan to identify sites have significant project delays." Attached is the complete Go Solar proposal. [PC 40 to PC 120]. The sites were identified and selected as shown on Appendix E. [PC 100 to PC 120]. Although contracts to obtain site control had not been executed, a clear plan was in place to do so, and to select alternate sites if the originally selected site was no longer available. Therefore the proffered reason is simply not justified.

Moreover, in Docket No. 12-1240, in the case of the Geronimo solar proposal neither the Commission nor the Department had any concern that site control had not been achieved by the time that the proposal was submitted by Geronimo. Applying a different rule here (which would yet be another criteria or rule not previously announced), is simply not justified.

The energy price per kWh. In its Reply Comments Xcel asserts that a reason for rejecting the IE scoring for Go Solar was that Go Solar's "energy price per kWh was high relative to other EP proposals." That alleged reason is neither supported by the AG meeting minutes nor Xcel's comments regarding the lack of accounting of the cost of net metering proposals.

Indeed, the AG meeting notes and the IE evaluation contradict Xcel's proffered reason. The meeting notes state Go Solar:

"scored high because of the price". [PC 3].

"price is good" [PC 3].

"scored high in every area." [PC 3].

As Go Solar has previously stated, even with being unfairly and inappropriately being penalized for selling at avoided costs, the independent evaluation was that the "price was good". Of course, if net metering projects were properly assessed their equivalent PPA cost at retail rates, Go Solar's proposal would be even further ahead. As a result, Xcel's unsupported statement as to the price per kwH is simply wrong.

The requested grant amount. Admittedly, the amount requested by Go Solar was higher than other requests in nominal dollars)(other than the University of Minnesota aggregate requests), but was consistent with the awards given in previous RDF cycles to the #1 ranked proposal. It was, however, very low on a per kwh basis and on a facility basis. Furthermore, Go Solar submits that based on (1) it being ranked #1 by the IE, (2) garnering the highest percentage of available points in the history of the RDF, (3) requesting by far the lowest grant per kW, (4) creating more jobs than all Recommended Projects *combined*, (5) creating double the economic impact of all Recommended Projects *combined*, and (6) creating a highly visible, large scale project on 20 different sites across Minnesota, the Go Solar proposal provided more than

sufficient justification to satisfy the RFP. Moreover, Go Solar's proposal was clearly scalable so that if Xcel had wanted to reduce the amount of the grant, it could have easily included conditions that it expected the number of projects being funded be something less than 20, as Tami Gunderzik's notes indicate was contemplated. [PC 36].

In addition, Go Solar had satisfied many of the other criteria that Xcel has used to justify the selection of other projects. An objective comparison of the selected projects with Go Solar clearly shows that almost all the factors that were used as positives to select those projects were also a feature of Go Solar's proposal. Therefore, even using the skating competition analogy, the artistic scores for Go Solar were as high or higher than selected projects.

VI. XCEL HAS FAILED TO ADDRESS WHY CERTAIN SELECTED PROJECTS WERE NOT REJECTED.

Xcel's Reply Comments fail to address why certain selected projects were either not rejected immediately for failure to adhere to the RFP, or allowed to benefit from clearly unrealistic assumptions.

Those projects were discussed in Go Solar's petition and are noted again here.

1. The retention of certain green attributes for the Metropolitan Airport Commission and the SGE Partners, LLC, projects is specifically *contrary* to a firm condition in the RFP[7]. As a result, those projects *should have been eliminated*.
2. Unless the Cornerstone Group project is going to be located in New Mexico, or in geosynchronous orbit over Minnesota, it clearly benefitted from an erroneous assertion of its energy production.

[7] The RFP states: **"As a condition of accepting any grant award, Xcel Energy will receive all "green attributes" of the energy such as renewable energy credits, green-tags or certificates."**

VII. A CONTESTED CASE IS WARRANTED.

Unless the Commission orders a re-evaluation of all proposals with a new advisory group, a contested case is required for the full development of the facts. While Xcel has produced over 10,000 pages in response to Go Solar's information requests, it has refused to respond to many critical requests including providing information related to other proposals, particularly those that were selected out of order, or selected based upon previously unannounced criteria.

Xcel expects the Commission and all parties to merely accept its unsworn statements as the full and complete record. However, the fundamental issue of whether the AG was advised of and followed the statutory, Commission and RFP criteria requires cross-examination of the AG members as well as a full production of all documents. The AG minutes clearly reflect additional unannounced criteria as being decisive in the selection process. Those criteria establish a prima facie case that neither Xcel nor the AG followed the statutory or pre-announced criteria. In addition, as the selection results plainly illustrate, those criteria were applied inconsistently, and to the detriment of Go Solar.

The 2012 statutory changes mandate that Xcel "must strongly consider . . . the potential benefit to Minnesota citizens, businesses, and Xcel Energy's ratepayers." Minn. Stat. § 116C.779(f). While the "strongly consider" language might be viewed as a mere suggestion by some, the burden is upon Xcel to show that it did "strongly consider . . . the potential benefit to Minnesota citizens, businesses, and Xcel Energy's ratepayers." Indeed, putting aside for the moment the fact that Xcel did not satisfy that criteria in the case of Go Solar, the selection of the best project in Wisconsin, objectively ranked as a Tier 2, and behind 23 other projects, plainly illustrates how that criteria ran off the rails.

From a statutory perspective, Xcel has not shown that it strongly considered the potential benefit to Minnesota citizens, businesses, and Xcel Energy's ratepayers. To the contrary, the documents establish a prima facie case that Xcel used a standard-less process to deviate from the scoring matrix and selection methodology that Xcel itself admits "incorporate[s] the statutory policy guidance."[8]

As shown in Table 7 of Go Solar's Petition, Go Solar was ranked #1 by the IE in the specific category of providing the greatest potential benefit to Minnesota citizens, businesses, and Xcel Energy's ratepayers. It is noteworthy that in that category the *non-solar* projects scored at the bottom of the list, recognizing that those projects have the lowest potential benefit to Minnesota and ratepayers. It is therefore surprising that within the recommended group *over 45% of the amount awarded for energy projects went toward the three projects that provide the lowest benefits to Minnesota and ratepayers*. Such a large amount to energy projects that provide the lowest benefit to Minnesota citizens, businesses and ratepayers is in direct conflict with the statutory requirement in Minn. Stat. §116C.779(f) that Xcel "must strongly consider . . . the potential benefit to Minnesota citizens, businesses, and Xcel Energy's ratepayers."

In addition, the 2012 statutory changes require that for renewable electric energy generation projects Xcel "***must***, when feasible and reasonable, give preference to projects that are the most cost-effective for a particular energy source." Minn. Stat. § 116C.779(h). Here those commands of the Legislature were ignored. In none of the almost 10,000 pages produced by Xcel is there one mention of either the AG or Xcel considering, much less following, those directives.

[8] *See,* Xcel Reply Comments at p. 3.

Go Solar was without question the most-cost effective. There has been no assertion that providing that preference was not feasible and reasonable. Moreover, as shown in Table 10 of Go Solar's petition, Go Solar's proposal provided, by far, the best value per RDF grant dollar, all while offering to sell energy and capacity at Xcel's avoided costs, keeping ratepayers neutral and providing a far greater financial benefit than self-generation projects that effectively sell at retail rates.

TABLE 10

Proposal	Organization	Technology	project size (kW AC)**	DC solar project sizes (kW)	Requested Grant Amount	Requested Grant Amount per kW
EP4-038	Minnesota Go Solar, LLC	solar	20,000.00		$7,439,000	$372
EP4-009	Mondovi Energy Systems	biomass	2,000.00		$2,000,000	$1,000
EP4-005	Best Power, Int'l, LLC	solar	770.95	907	$900,000	$1,167
EP4-020	Target Corporation	solar	350.00	418	$583,513	$1,667
EP4-039	Goodwill Solar, LLC	solar	595.00	700	$1,075,250	$1,807
EP4-042	Aurora St. Anthony Limited, LLC	solar	214.20	252	$398,000	$1,858
EP4-013	Metropolitan Airports Commission	solar	1,003.00	1180	$2,022,507	$2,016
EP4-007	Anoka Ramsey Community College	solar	389.30	458	$828,900	$2,129
EP4-024	Bergey Windpower Co	wind	500.00		$1,106,600	$2,213
EP4-003	Minneapolis Public School	solar	412.25	485	$917,250	$2,225
EP4-011	Innovative Power Systems, Inc.	solar	821.95	967	$1,850,000	$2,251
EP4-043	Cornerstone Group	solar	129.20	152	$310,310	$2,402
EP4-004	SGE Partners LLC	biomass	1,100.00		$5,000,000	$4,545
EP4-022	Minneapolis Park and Recreation B	solar	170.00	200	$969,741	$5,704
** For Recommended Solar a derate of 85% was used (except for Target and Go Solar which specified an AC size)						

Moreover, as Table 11 of Go Solar's petition shows, the Recommended Projects require almost *six* times the grant award per MW as the Go Solar proposal.

TABLE 11

	Total AC nameplate	RDF Grant $	RDF Grant $ per MW
Minnesota Go Solar, LLC	20,000	$ 7,439,000	371.95
ALL Recommended Projects Combined	8,456	$ 17,962,071	2,124.22

As Tables 10 and 11 reinforce, the Go Solar proposal is not only the most cost-effective proposal by far, but is also the proposal that does the most to "increase the market penetration of renewable electric energy in the state at reasonable cost."[9]

VIII. XCEL ALSO IGNORED THE TERMS OF THE RFP.

In addition to ignoring the statutory criteria from the 2012 legislative changes, Xcel and the AG proceeded contrary to the RFP. The terms of the RFP clearly state that the AG would recommend how *far down* the ranked list of proposals it proposed to make awards.[10] That procedure or process plainly requires that the AG would start with the IE list in each technology category and in the overall category, and propose how far down the IE list it would propose to make awards. The process set forth in the RFP did not allow for the deletion of projects in the list, it just enabled the AG to narrow or expand the group of projects from which Xcel would make the selection. That group of projects, however, under the procedure described in the RFP, must be a group that contains all the projects with a higher score than the lowest scored project in the group.

In addition, once the 2013 energy legislation was enacted regarding solar gardens and the new solar standard (the "2013 Solar Law"), Xcel was given the opportunity to revise its two RDF proposals and communicate directly with the AG with respect to the two Xcel proposals for RDF grants for its own projects. No other proponent was provided with the same opportunity as

[9] *See*, RFP, pp.3-4.

[10] The RFP states at p. 33:

> To facilitate development of a balanced portfolio of projects, Xcel Energy will request that the independent evaluator rank proposals in descending order against all proposals as a single group, and then again within each resource type. For instance, after ranking all projects in a single list, biomass projects will be grouped and then ranked against other biomass projects; solar projects will be grouped and then ranked against other solar projects, and so forth. The advisory group will recommend how far down the ranked list of proposals it proposes to make awards.

Xcel reserved for itself. Every proponent of an RDF proposal should be provided with the same opportunity that Xcel reserved for itself regardless of what, if any, effect that opportunity had. In the case of Go Solar, it is evident that in light of the 2013 Solar Law, should Xcel not have wanted to enter into a PPA that the Go Solar proposal would represent 20 of Minnesota's first solar gardens.

IX. THERE IS NO REASONABLE BASIS ON WHICH TO DENY AN AWARD TO GO SOLAR.

How the most diverse project, that provides the greatest benefit by far per RDF dollar to Minnesota citizens, businesses, and Xcel Energy's ratepayers and is the most cost-effective for a particular energy source, cannot be considered an RDF project defies the plain language of the 2012 legislative changes. It is that defiance that confirms without question that the AG was not adequately instructed as to the legislative directives for the RDF.

Go Solar's proposal was ranked #1 overall by the IE, garnered (despite incorrectly overstating Go Solar's per kwh cost[11]) more points than any other project, and would create more jobs than all recommended projects combined. In addition, the independent RDF evaluator concluded that the Go Solar proposal provided the largest "potential benefit to Minnesota citizens, businesses, and Xcel Energy's ratepayers" (*see*, Minn. Stat. § 116C.779(h)).

Despite being rated #1, the lowest cost per watt of RDF funding, creating more jobs than all other selected projects combined, and offering to sell at avoided costs, Xcel has not recommended any (even partial) funding for the Go Solar proposal, marking the first time in the history of the RDF that the top-ranked proposal was not recommended for any funding.

[11] As a result of the erroneous calculation, Go Solar received a score of 45 instead of the 60 points it should have received, which would have put Go Solar's total overall score at 204.7, even farther ahead of the nearest project, and garnering the highest percentage of available points in RDF history.

Furthermore, the uniqueness of the Go Solar proposal cannot be understated, particularly as it compares to the other recommended projects. With a single grant that is proportionate to what other #1 ranked proposals have received in each of the three prior RDF cycles, the State of Minnesota would almost ***triple*** its currently installed solar resources and create highly visible projects using 20 different sites across a diverse set of communities.

The Go Solar project's focus was fivefold:

- promote the expansion and attraction of solar renewable energy projects and companies in the Xcel Energy service area;
- increase the market penetration of solar renewable energy resources on a scale not done before in Minnesota at reasonable costs, by almost tripling Minnesota's installed solar resources;
- Provide the largest potential benefit ***by far*** to Minnesota citizens, businesses, and Xcel Energy's ratepayers as compared to any other project that would be proposed. Minn. Stat. § 116C.779(f);
- Provide solar resources at the most cost-effective for a particular energy source. Minn. Stat. § 116C.779(h); and
- create highly visible projects using 20 different sites across a diverse set of communities.

Because Go Solar asked for such a low per kW grant based upon a low per kWh production incentive, a bonus of the Go Solar project was that it would also illustrate how a solar renewable energy credit market would enable the rapid deployment of solar in Minnesota at reasonable costs, which fits in line exactly with the RDF mission.

Based upon the statutory criteria prescribed by the Legislature, the Go Solar proposal was the clear winner. In spite of its highest ranking, Xcel is recommending no award for Go Solar, instead awarding over 45% of the amount awarded for energy projects to the three projects that the independent evaluator concluded provided the lowest benefits to Minnesota citizens and ratepayers in the recommended group.

If either Xcel or the AG intended to evaluate and select proposals based upon criteria that was not included in either the RFP or the RDF statute, then fundamental fairness requires that those criteria be announced and clearly set forth prior to the time for submission of proposals. Any criteria that differ from that in the RDF statute or the RFP must be set aside.

Unless a contested case is ordered, the only way to address the deficiencies in the entire process is for a new advisory group to be formed, which would have members that are not affiliated with ***any*** proponents proposal, and for the new advisory group to be educated as to the statutory priorities under the statute, and the process described in the RFP that the AG would follow.

A new panel is the only way to insure the soundness of the process and to properly address projects such as Go Solar, and others, particularly those that have been rescored. EP4-44, for example, has been rescored giving it a total score of 158.5, which would have resulted in its selection if the AG had followed both the statute and the rules provided in the RFP. Neither were followed and as a result, EP4-44 was one project that received absolutely no discussion at all during the AG process.

In addition, every proponent should be given the same opportunity that Xcel had to adjust or add additional narrative to its proposal to explain how the proposal would be affected or how the proposal's evaluation should be affected by or evaluated in light of the 2013 Solar Law.

Anything less would simply not be fair and would result in Xcel and the AG continuing to attempt to justify decisions that are inconsistent with the statute and the process set forth in the RFP.

X. THE COMMISSION HAS THE AUTHORITY AND DUTY TO ORDER XCEL TO REMEDY ITS ACTIONS.

Xcel has failed to timely and properly implement the RDF grant and Minn. Stat. § 116C.779. Xcel in administering the RDF grant incentive has substituted Xcel's intentions for those of Minnesota policymakers. The risk that Minnesota law is completely frustrated with respect to the RDF Grant is amplified by the potential conflict of interest that Xcel may have in administering ratepayer funds intended to benefit development of energy projects that could have an adverse effect on the capacity need that Xcel has identified and for which Xcel has proposed a self-build gas-fired power plant.

It would be inappropriate under the Commission's affiliated transaction policies and work against the purposes and requirements of the RDF Statute for Xcel to have any role in administering ratepayer funds in the event of such a conflict. The legal and policy ramifications of such a scenario would be particularly troublesome in light of the fact that in essence, any such conflict would be in direct opposition to the intent of the Legislature to provide funding to projects that are most cost-effective for a particular energy source and have the largest potential benefit to Minnesota citizens and businesses and the utility's ratepayers, and meet a host of public policy goals.

Moreover, the Department of Commerce has previously warned of the possibility for a conflict of interest invalidating Xcel's RDF selection process.[12]

[12] *See*, Department of Commerce Comments, January 22, 2002, Docket No. E002/M-00-1583, pp. 5-6.

The Commission has the authority and duty to order Xcel to remedy its actions. Minn. Stat. § 116C.779, subd. l(b) provides that "[e]xpenditures from the [RDF] account may only be made after approval by order of the Commission." The Legislature gave the Commission final jurisdiction over the RDF, because the funds in the RDF are provided by Minnesota consumers. Therefore, the Commission must ensure that the RDF is administered in compliance with State law and in the public interest. Failure to fund the Go Solar project would be contrary to the criteria set forth in the RDF statute and be contrary to the public interest.

The public will receive substantial benefits from funding the Go Solar Project, as is clearly illustrated by the ranking of the Go Solar project by the IE and the other benefits of the Go Solar project discussed above.

For the reasons stated above, in its initial petition and comments and its initial reply comments, Go Solar asks the Commission to order the formation of a new advisory group, or in the alternative to order a contested case proceeding, and stay any further action on any of the Recommended Projects until either the new review is completed or the completion of the contested case proceeding.

Dated: December 31, 2013

Respectfully submitted,

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Certificate of Service

I certify the attached *SUPPLEMENTAL REPLY COMMENTS OF MINNESOTA GO SOLAR LLC* has been served this day, December 31, 2013, via U.S. mail and e-mail as designated on the Official Service List for the proceeding on file with the Minnesota Public Utilities Commission.

/s/ Thomas Melone

Thomas Melone

RDF Advisory Group Meeting
June 12, 2013
8:30 a.m. – 5:00 p.m.

In Person: Briggs and Morgan, 2200 IDS Center, 80 South Street, Minneapolis
Present:

Advisory group: Mike Bull (Xcel Energy), Ben Gerber (MCC), Tami Gunderzik (Xcel Energy), Eric Jensen (Environmental, Izaak Walton), Kevin Schwain (Xcel Energy), Linda Taylor (Environmental, UMN), Lise Trudeau (Residential, DOC), Heather Westra (Prairie Island).

Sargent & Lundy, LLC: Ryan Swanson, Matthew Thibodeau, Todd Kantarek

Xcel Energy Staff: Paul Lehman, Mark Ritter, Mara Koeller, Leena Kurki, Zev Simpson (Briggs & Morgan).

I. CALL TO ORDER/APPROVAL OF MINUTES

Mark Ritter called the meeting to order. Lise made a motion to approve minutes from the last meeting. Linda seconded, minutes approved.

II. LEGISLATIVE UPDATE

Rick Evans, Xcel Energy lobbyist, gave a legislative history and update of the current RDF Cycle 4. Main points: UMN IREE $5 million was cut; new solar program, TBD, $5 million; made in Minnesota solar panel preference.

Mark distributed a spreadsheet, rate rider revenue and balance forecast 2011-2017, and explained the numbers. Paul: it will take about four years to generate enough funds to give grants at the current cycle funding level.

III. REVIEW SELECTION PROCESS

Paul explained the goals for the meeting: gaining input and feedback from the group so that the Company can make an informed decision. Besides the scoring, the group should look at diversity in location, project types, and technology.

Ben: many of the proposals are asking money to do things that are already done, for example, putting solar panels on building roofs. Is this what we want to fund? In his

opinion, the funding goal should be more experimental and valuable. There is a problem if the ratepayers first pay for solar panels from RDF and then pay again in rates because of lost sales.
Kevin: looking for market penetration of renewable energy, low cost, and balance. All projects need not be fancy and experimental.
Linda: on Ben's side: there needs to be something there, innovative aspects and whether those aspects are convincing.
Tami: awareness and visibility are factors to consider, too. I see the evaluator scoring as the technical marks, and the artistic marks are for the group to decide.
Mike: there are two fundamental issues: 1) royalty issues, especially in the UMN proposals, and 2) RECs, which RDF needs to get.

The group decided to take a quick first round review of proposals in order to move up any proposals that are now not recommended, but should be considered for funding, and to move down proposals that are now recommended, but should not be considered for funding.

IV. REVIEW ENERGY PRODUCTION PROPOSALS

Move Up for Discussion

Heather: add EP-34: Lowertown Ballpark, money is already in place.

Eric:
Add EP- 15: MN Solar Garden and EP-23: Green Peak Solar Cooperative, both are community projects and pricing pulled them down in ranking.
Add EP-17: DNR, EV charging stations.
Add EP-19: Adonis Eco-Housing, developing affordable solar homes statewide.

Linda: only one small wind project was recommended. Add EP-24: MN Clustered Small Wind Project, Bergey. Do not add EP-28: Future Force, since it is a refurbish project.

Mike: add EP-12: Xcel Energy's Buy All/Sell All, and EP-9: Mondovi community-based anaerobic digester since it is the only project in WI.

Linda: add EP-21: Farmamerica combined wind, solar, battery proposal.

Additional moved up: EP-41: City of Hutchinson municipal landfill solar project and EP-22: Mpls Park and Recreation Board.

Discussion on EP-35, Revier Cattle Company: non-farm feedstock was preferred on digesters; expensive; not novel or strong enough proposal; also had some technical flaws. Therefore, not moving up.

Discussion on EP-8, Salvation Army: it is about emergency preparedness, therefore not moving up.

Move Down Not to Discuss

Considered EP-37, Michael Foods Biomass: keep to discuss.

Discussion on EP-38, MN Go Solar:
Linda: how to create a solar REC system, is RDF appropriate place to look at? REC system is the innovative part, could it be done independently without building the solar? Expensive.
Lise: only one stakeholder.
S&L: scored high because of the price and solid team.
Decision: keep to discuss.

Drop EP-33: 1MW Lincoln Wind Project: this is a refurbish projects, and we have had problems with refurbish projects before. Do not want to fund.
Decision: move down.

Discussion on EP-29, Dragonfly Dodge Center Solar Project: not innovative or novel.
S&L: scored high because of lump sum, proven PV manufacturer, concept not so novel, but lower than average cost.
Decision: keep to discuss.

Drop EP-5: School Sisters of Notre Dame: not especially innovative or novel.
Decision: keep to discuss.

Discussion and Review of the Revised List

Discuss the revised list of proposals under consideration. Sort proposals to three categories: strongly support, favor, and against. Go down from the highest to lowest score.

EP-38: Minnesota Go Solar ($7,439,000)
S&L: scored high in every area. Involves twenty-one 1 MW solar projects, spread across the state. Price was good; accept lump sum; 25-year PPA. It is a large project,

asking over $7. Considering a 25-year PPA, which is longer than the typical 15-to 20-year PPAs.
Linda: not so impressed, timeline allows only 4 months to negotiate PPAs, which is too short. Locations are still open, which adds uncertainty. Concerns of timeline: they are capable, but want to negotiate one PPA for the entire project.
Zev: PPA negotiations will probably take 6-8 mo plus Commission approval.
Lise: Solar RECs are interesting, but the proposal needs more perspective. Only one stakeholder. Good, but very expensive project—not suitable for a RDF project
Eric: helping to develop RECs market is not so difficult to do. Not impressed. Mike: agrees, expensive, not to be funded. PPA information did not mention that pricing would be really low.
Decision: against.

EP-20: Target Midway Solar Project ($583,513)
S&L: Involves solar panels on the roof of the Midway store. They have done this in the past; experience is there; interconnection agreement has been initiated; 50% cost sharing; within the Innovation Corridor; all electricity used on site.
Linda: where is the innovation, this is proven technology.
Mike: concerned about the number of contract amendments.
Zev: amendments are not a deal breaker, Target wants the flexibility of selling the store, and this will be an issue only during construction. Negotiations likely to result in a reasonable outcome.
Eric: there was some confusion in the proposal regarding the amount of power installed. Strengths are that Target can do this and the project will happen. But nothing special.
Heather: Could this happen without RDF, does Target need the money? Many communities do not have that money.
Eric: I do favor a $500,000 project in the Innovation Corridor, just need residential/commercial balance. Many other projects are proposed by companies, and also the solar companies make money from the RDF.
Linda: lots of visibility and a MN corporation, worth supporting.
Group comments: Midway Target is one of the most visible roof tops in the Corridor, it is visible from the trains. Target is an amazing marketer, will make solar installation public. This is the first Target store solar installation, if it is successful, they will probably do more. Also, an inner-city target with diverse customers.
Decision: favor.

EP-48: Blue Lake Wastewater Treatment Plant, Oak Leaf Energy ($2,000,000)
S&L: resources and price are good; developer is good with numerous projects; lump sum at the end; financing well thought-out. Local government, all electricity used on site. Location is Shakopee, within Xcel Energy's service territory.

Group comments: proposing two separate PV arrays, interconnecting at the same point to better align for where used. Location is next to the Metropolitan Council's Blue Lake Wastewater Treatment Plant, next to the highway, major visibility. Good cost, and the Commission knows the project. The project will reduce the costs of waste water services, benefits for the community. Partnership: MET will buy the electricity, lease buy back. RDF proportion is 30% of the funding. Some contract issues, but negotiable.
Ben: government entity, no lost sales.
Decision: favor.

EP-43: Lyndale Garden Solar Project, Cornerstone Group ($310,310)
S&L: high visibility, part of a larger redevelopment effort. Project scope had lower score because of the risk element of the redevelopment.
Linda: like it a lot, good location, Cornerstone has good amount of experience and access to real financing, which was identified. Also, not expensive and MN-made equipment.
Group comments: good project and pricing, all money goes to equipment, no indirect costs.
Mike: good project, small amount, part of the development is affordable housing; this is a good aspect. Risk is the success of the redevelopment.
Decision: strongly support.

EP-36: Austin Wastewater Treatment Facility Biogas Project, City of Austin ($3,565,000)
S&L: 1 MW upgrades to an existing wastewater treatment facility anaerobic digester. All electricity used on site, price was one of the best. Pluses: cost sharing more than 50%; non-agricultural feedstock; grant funds for equipment and installation only. Asking $3.5 million, Xcel Energy gets all RECs,. Not in the service territory, so no lost sales.
Lise: project has received some St. Paul funding to explore feasibility, good ground work. Good potential to reduce green gas emissions. Worthy project.
Kevin: it is a negative that the project is not in the service territory, how does it benefit MN ratepayers? There are two other biomass projects that would be preferable to this one.
Ben: project does not affect Xcel Energy's sales, which is good.
Lise: will reduce wastewater costs. Local government costs will not flow to ratepayers.
Heather: can we come back and suggest $2 million, and ask them to adjust their funding?
Mark: in the past, we have not done that.
Tami: bad precedent. However, we cannot fold because of the amount.
Decision: favor.

EP-13: Solar PV Parking Ramp, Metropolitan Airports Commission ($2,022,507)
S&L: little over 1MW, solar PV over airport parking ramp, so it will not take any parking space. Scored well everywhere; OK cost, willing to take lump sum after construction, but not after in commission (did not get points for that). Zev: some contract amendments because of the nature of MAC entity, but negotiable.
Mike: I love this one. MAC's first step to further project developments; first green airport in the country; visibility; sponsorship program. However, they want to retain RECs. We will need to negotiate, but if they will not give RECs, then we will not give funding. Price is reasonable, more than 50% is their own cost. This is paid by user fees and other businesses that operate at the airport. All energy is consumed at site.
Heather: asking less than half of total project cost, which is positive.
Eric: is a roof of parking ramp really novel?
Decision: strongly support.

EP-6: Saint John's Solar Farm, Best Power ($172,213)
S&L: expansion of existing solar farm that RDF funded; 20-year lease; low risk; existing interconnection; self-funded 58%; have experience; single lump sum; within Xcel Energy's service territory.
Eric: good project and inexpensive. But we already gave them money, what we want to do now? Innovation: will compare to Mpls Convention Center and create a public website for info sharing.
Mike: very cheap energy and within Xcel service territory.
Decision: favor.

EP-39: Goodwill, St. Paul, Solar Proposal ($1,075,250)
S&L: within the Innovation Corridor; low cost; net metering project; will sell all power to Xcel; good technical proposal; accept lump sum; substation within a block; PPA and Geronimo pluses.
Lise: highly visible location, diverse community, strongly support.
Linda: also strongly support. Geronimo has access to financing and is very professional. Project will happen and be done within timeline.
Heather: strongly support. A solid project and a worthy organization.
Decision: strongly support.

EP-11: Green Line Solar Corridor, Innovative Power Systems ($1,850,000)
S&L: five solar PV systems on five different buildings, total 967kW. Scored very well; accept lump sum; total resources good; 90% of energy is consumed on site; subject to net metering. Negatives: some discrepancies in schedule.
Kevin: Xcel Energy strongly supports. This is a good project since it involves five different sites and four different contractors.

Decision: strongly support.

EP-29: Dodge Center Solar Project, Dragonfly Solar ($1,650,000)
S&L: project will add solar power to existing wind farm. Positives: existing sub-stations; good technology; resource cost average; lump sum at completion. Innovative: trying some newer modules and technology, optimized tracking. This is next generation technology and would be the first application in the US. All power will be sold to Xcel Energy, like the wind power is sold already. Not within Xcel Energy service territory.
Mike: do not love it, maybe favor.
Linda, Mike. Zev: Contract issues are significant, although not unusual comments from developers, RDF does not fit their regular business model.
Decision: favor.

EP-42: Old Home Plaza Solar Project, Aurora St. Anthony Limited ($398,000)
S&L: technically good; have site control; cost sharing 56%; have experience; location within Innovation Corridor; urban redevelopment site; affordable housing and historic renovation.
Eric: partnership with Metropolitan Council, St. Paul, and others. Includes also a homelessness program component. Sundial Solar is solid, they know what they do. Electricity consumed on site. This project is more expensive ($398,000) than EP-43 Cornerstone Lyndale Gardens, which requested $310,310. However, this is within the Innovation Corridor and also almost twice as large as the Cornerstone project, at 252 kW. They sound very similar.
Decision: strongly support.

EP-18: Gustavus Adolphus College Solar Project ($480,000)
Linda: move against, this is not Xcel service territory. This is a nice project for them to have, but in terms of our funding, maybe not.
Heather: agreed, nothing special. No innovation, good for them, but why would we fund it. They could negotiate with the municipality.
Eric: it is rebate for solar now.
Decision: against.

EP-46: Slumberland Solar Proposal, Geronimo Energy ($1,503,000)
S&L: location in Little Canada, a few missing budget pieces.
Mike: This is like the Gustavus project, nothing innovative. Geronimo and the proposal are technically solid. Move against.
Lise: the Goodwill project is more favorable.
Ben: agree, take off the list.
Decision: against.

EP-7: Coordinated Solar PV Project, Anoka Ramsey Community College ($828,900)
S&L: 458kW solar system plus charging station at their training center; 55% cost sharing; tenKsolar equipment, all energy consumed on site, some unique features.
Ben and others: liked it, especially the electric vehicle charging station part, how to use it in training. The 458kW tenKsolar equipment part is not very innovative. The main thing is how to integrate students, develop training curriculum, and utilize the charging station in education. For a tenKsolar project, this has the most benefit and potential. Funding request includes only maintenance and installation.
Needs contract modification: contract needs to include a curriculum part with demonstration, education, and hands-on training for students.
Decision: with curriculum contract modifications, strongly support.

EP-2: Municipal Solar Energy, City of Hopkins ($708,204)
S&L: involves a total of 475kW of PV solar at four city building, e.g., fire station.
Positives: lower than average cost, government entity, within service territory.
Eric: this is the same old, nothing special in installing tenKsolar on fire station and liquor store. Proposal was a little inconsistent and not always accurate (e.g.; federal tax credit over 40%). Benefits: visible location, local project.
Mike: not very strong, sloppy proposal. Others agreed.
Decision: against.

EP-5: School Sisters of Notre Dame Solar Park, Best Power ($900,000)
S&L: 907 kW solar garden, not tenKsolar, location in Mankato, Best Power has had two previous grants from RDF. Positives: technically sound and they can get this done. New, more efficient technology that has been promising in other places, like California, Europe, and Canada. Slightly unproven technology might pose a risk. Not much detail on interconnection, points were taken for that.
Heather: there is already a lot of solar in Mankato. Cost share was good, about 50%. Budget was a little odd, PPA is reasonable and cheap for solar. They could have other options, maybe RDF is not the best fit.
Other comments: this is as strong as Saint John's (EP-006). Also, cover letter mentioned using project in physical science curriculum. Location is also new for RDF, Mankato.
Decision: favor.

EP-45: City of Rogers Solar Energy Project ($1,470,544)
S&L: costs are a little higher than average.
Ben: nothing innovative or special, installation of tenKsolar equipment at four large municipal buildings, total of 630 kW.
Decision: against.

EP-14: Innovation Corridor Solar Array, Murphy Warehouse ($2,016,118)
S&L: roof-mounted solar array at the Murphy Warehouse, all energy consumed on site. Installation of tenKsolar equipment, their other warehouses already have some. Cost share only 5%. Innovation: equipment will be installed in an angle, which would catch more 3-6 pm sun. Inconsistency in proposal: total demand 400kw, but proposed a 650kw array; maybe could sell energy at certain times, but this was not proposed.
Linda: this is not so special. The tiny cost share is a good reason to knock down, only $106,000. Other proposals include more like 50% cost share, also this is a private company that gets tax credits etc. Low cost sharing is an issue.
Decision: against.

EP-3: Edison High School Green Campus Solar Project, Mpls Public School ($917,250)
Mike: 300kW roof panels, two EV charging stations, and 112 kW installed on awnings; 53% cost sharing. This Northeast Minneapolis neighborhood of Holland has a broader focus on sustainability and green energy efforts, for example, programs on Mississippi river water run-off and electricity as art program. Edison High School is an inner-city high school with focus on sustainability; they also have good math and science curriculum. For example, their new ballpark has LED lightning and it is really the kids who are taking the lead.
Linda: I really like this. I realize that incorporating panels to awnings is expensive, but not a big part of the project. I like the climate controlled spaces and battery storage, also Edison is an inner-city high school.
Decision: strongly support.

EP-9: Community-Based Anaerobic Digester, Mondovi ($2,000,000)
S&L: anaerobic digester in Mondovi, Wisconsin. Asking $2 million for 2,000kW. Why ranked lower: description of power generation was not adequate or sufficient (lots of ones and zeros in scoring), interconnection costs, and distribution/transportation, although S&L engineering folks did not have a problem with the technical aspects.
Ben: cost-effective for biomass, interesting renewable base-load demonstration. I like that they are taking all this waste, and using it efficiently, but have trouble understanding all the technical details. Proposal is well presented, though, with great detail and good explanations for a lay person. It is a rather large project, with total cost of more than $13 million.
Mike: location is important, this is the best Wisconsin proposal. The technology and location are unique for RDF. However, they are requesting $2 million for a $13 million project, is the other $11 million there? The financial plan was not very good. City was going to have bonding authority, which is a big time commitment. On the other hand, the Wisconsin location is also a concern, are there benefits?

Zev: benefits to Minnesota may be that we learn more about the biogas industry. There are maybe 30-40 anaerobic digesters in Wisconsin and maybe 6 in Minnesota. This project has the ability to store at certain times of the week for peak-demand use, which is positive. Also, NSPW does pay 8% of the cost for RDF.
Other comments: the project wants funds up front, not at the end. A deal killer if they are not willing to negotiate. Also, another concern is the Minnesota benefits.
Decision: strongly support.

EP-24: MN Clustered Small Wind Project, Bergey Windpower ($1,106,600)
S&L: install 50 small 10kw turbines in central, rural Minnesota. Well put together proposal, cost was 27 cents per kwh. The Oklahoma manufacturer of wind turbines will get 2/3 of funds; projects are within Xcel service territory; cost share is 65% from people who would allow turbines on their property. About 90 persons have expressed interest in the project, but there are no details in the proposals how to negotiate with the property owners.
Linda: Bergey is good and developed one of the first certified turbines. They are a player in the industry and interested in influencing the best practices and policies. They do not have any image issues, good quality products. In Minnesota, small wind has PR problems, and we need a good quality public project. They would choose sites that are very good and use the best practices.
Zev: when the sites are selected, it will take time to get zoning and other similar issues resolved.
S&L: Proposal described people involved and equipment well, also very detailed interconnection budget. Payment is not a lump sum at the end.
Lise: sites will be built, they are very professional, and working currently on a number of projects. Money is going to equipment.
Linda: very thorough proposal, impressed. Again, we specifically asked for small wind, and this is one of the better options. Could you do 25 turbines instead of 50, do we want to do that?
Ben: legitimate project, we should look at wind, we are now heavy on solar.
But this is very expensive wind because it is small wind.
Mike: we asked for small wind and this is the best, I strongly support.
Ben: my opposition is to cost, not the idea. Ranked high regardless of cost.
Decision: strongly support.

EP-4: South St. Paul Anaerobic Digestion, SGE Partners ($5,000,000)
S&L: combined electricity, green biogas, and heat project, asking RDF funding only for the electricity production. Asking $5 million, total project cost $30 million. They will sell all power to Xcel Energy at the GD tariff price, which is low price. Power portion of total gas usage was lower, and they scored lower because of that aspect. They will use feedstock and organic waste from restaurants and food processors,

already secured. There is interest from Dakota county to maybe contract separately. Within Xcel service territory. There are some permitting and community acceptance issues, also need PPA.
Zev: one contract issue. We want all RECs of the total facility, they want to separate electricity and gas RECs.
Ben: this is urban biogas project, more innovative, future energy. More similar to base load energy, and close where the load is consumed. But it is very expensive.
Lise: many positives: very well written, creates a lot of jobs, tax base in South St. Paul, lump sum at the end.
Ben: I do like this better than Mondovi from a community perspective, jobs created and income tax are better.
Lise: they are also innovative in odor control, this is best of all biomass proposals. Also, positive is the urban setting.
Linda: hard time swallowing the $5 million.
Ben: if this works, there is ability to scale up and take it as an example. Possibility to be more productive and to learn more, I prefer this. Also will help the city and they did justify the cost: Xcel energy avoided cost and close in line with previous cycle funds.
Lise: support moving organic matter from waste stream, we do not know where to put, but this proposal has a solution.
Kevin: out of the three biogas projects, company would prefer Mondovi and City of Austin.
Ben: strongly support. They have several options for funding, partner equity, term loans, etc., and also willing to invest own capital of $10 million, which is mitigating risk. Also has St. Paul Port Authority support.
Decision: strongly support.

EP-37: Natural Systems Utilities, Michael Foods Project ($2,000,000)
Heather: maybe I was too fast in suggesting removing this. It seemed that they want to expand their own business, which is not a goal of RDF. But I want to bring back to discuss.
S&L: in Chaska, using potato peels as feedstock. High cost, $2 million requested, total project $9 million. Why not recommended: digestion method is still open, energy cost was high, and technical aspects were not fully developed. They have done studies on different digestion methods. Positives: lot of feed supply and a good idea. Bonus: service territory (although it is not) and lump sum at completion.
Kevin: near the bottom of his list, when looking at all biomass.
Decision: against.

EP-41: Municipal Landfill Solar Project, City of Hutchinson ($958,369)
Decision: Additional materials submitted after deadline will not be reviewed.

Linda: proposing ground-mounted tenKsolar equipment on a closed, capped landfill, using a unique structure not to penetrate the landfill. Cost is about average. Next door is the municipal wastewater treatment plant.
Lise: not in Xcel Energy service territory.
Ben: is this innovative?
Linda: there is no landfill solar yet in Minnesota. A lot of trouble financing. Lise: indifferent.
Heather: I like this, could be demonstrated in other communities--how to use a capped landfill in a positive way.
Linda: in general, concern is that we are covering MN with ground-mounted solar equipment. Landfills are wasted property and a huge problem. If this is intended to show how not to penetrate to the capped portions of landfills, it is an interesting project and technically feasible.
Decision: favor.

EP-22: Minneapolis Parks and Recreation Board Solar Project ($969,741)
S&L: install one 150kW and five 10kW tenKsolar solar equipment on carports, rooftops and canopies in high-traffic areas in parks that owned by Mpls. Positive: shows awning technology; parks are city-owned, however, the sites are not finalized. Other negative: expensive and low cost share, only $100,000 or about 13%.
Ben: project is visible; governmental entity; lost sales are not a concern; problem is that the five 10 kW installations will drive the cost, but this is also the innovative part. This is an opportunity for public education, but how risky is the new technology?
Mike: visible project, sites will be in places where people see them; low cost share, but lump sum at the end.
Decision: strongly support.

EP-23: Green Peak Solar Cooperative ($2,300,000)
Eric: move off the list.
Decision: against.

EP-19: Statewide Affordable Solar Homes, Adonis Eco-Housing ($2,046,673)
Move off the list: we have other low-income housing projects that are less expensive, this was the least cost-effective.
Decision: against.

EP-12: Buy All/Sell All Solar Rewards Program, Xcel Energy ($10,800,000)
S&L: there was so little detail in the proposal, that is why it got a low score. Also expensive at almost $11 million.
Kevin: there is a significant gap and need for this. CIP is not the right place for solar rewards. RDF could be one possible funding source. I do feel strongly that the statute

says the goal is to penetrate renewable energy and this is a reasonable thing to do. This is also cost-effective, more so than the individual projects. I understand we have a mandate to fund, so is it reasonable to fund through RDF?
Mike: my concern is that there is nothing to focus on that level of size. There is also a significant amount of support, keep discussion going.
Linda: CIP is not the ideal place to fund solar rewards, but RDF is the wrong place to fund solar rewards. My biggest concern is environmental: RDF was originally intended to fund slightly risky things, move technology forward, and integrate new technology and financial structures. The intent was to push the market to do new things. Solar rewards would be doing the same thing all over again. I am very firm that solar rewards program does not belong in RDF and as a group we should not fund it.
Ben: In principle I like this idea, but it is an attempt to fix bad legislation. Legislature needs to go back to fix what they did, RDF is not the way to fix it. Cost-effective manner is important, but it is unfair to fund if we are lacking a lot of details. Just because Xcel proposes something, we should not fund it. Bad proposals should not be funded.
Lise: How would the design look like, Xcel Energy should work with legislature, regulators, etc.
Kevin: granted, RDF is maybe not the best place for this. But solar rewards is increasing renewable energy and achieving the purpose of the RDF legislation.
Eric: the question is do we fund Xcel solar proposal or other solar proposals; there is no room for others. It is not OK to ask for a lot of money, and then say do not take anything else into account than cost-effectiveness.
Mike: we are supporting larger than 100kW projects and smaller than 40kW projects, but nothing for 40-100 kW size. This would fit that.
Linda: this is an amended proposal. When was this amended, how was it accepted, and did we get/accept any other amended proposals?
Paul: seems like the work product of the group is "do not fund."
Ben: I don't believe buy all/sell all is as great as Xcel Energy thinks.
Lise: do appreciate Xcel proposal in, but we should not fund.
Decision: against.

EP-34: Lowertown Ballpark, City of Saint Paul ($555,750)
S&L: negatives are expensive price and low cost sharing (about 20%). Project is located in the Innovation Corridor; all money paid after completion, but in three lumps of production milestones.
Heather: high visibility; project will reach many people and capture ratepayer attention; they will put details on scoreboard between innings.
Eric: high visibility, but crazy expensive. Why is there no explanation on the costs, seems that they did not do their research. Also, if they are asking for $550,000, why did they not wrap this to the other projects of millions of dollars?

Decision: favor.

EP-21: Combined Small Wind, Solar, and Battery Project, Farmamerica ($600,000)
S&L: located in southern MN, visiting center/training campus at MN farming museum. Negatives: high cost, no confirmed contractor, no cost share, inconsistent budget. Lump sum at the end.
Linda: within Xcel service territory; very rural, agricultural system, this is a demonstration project. It will gain a lot of visibility.
Ben: Why did they not get bids beforehand, it is easy to do. Not too much direction, for example, not sure if they need a project manager.
Linda, Lise: they have raw ability and interest, but not experience. Will we give them direction? They both favor.
Decision: favor.

EP-17: EV Charging Stations, MN Department of Natural Resources ($641,000)
S&L: within Xcel service territory; install charging stations in state parks; start to create a chain from MN to Iowa and Canada; includes 50% cost share. Expensive, which hurt the score. Funds are only for equipment and web.
Linda: DNR managed their last RDF project extremely well, but is it best to have EV charger in a state park? Public education aspect is very strong.
Ben: I do not think it makes sense for us to fund this just for charging stations. Linda: take of the list.
Decision: against.

EP-15: Minnesota Solar Garden Project, MN Renewable Energy Society ($2,661,320)
Comments: there is no site selection yet; RDF is not the right place to fund; state is already giving incentives; not an innovative proposal; very expensive.
Mike: demonstration project, how it can be done.
Lise: this could establish a model.
Ben: no site selection, lot of risk, expensive project. It should be more thought out and get the community and neighbors involved in the very beginning of planning. This was fishing.
S&L: score was low because schedule was lacking in detail; scope and definition were light; no interconnection cost in budget; no discussion on overseeing implementation; and substantial consulting fee for development.
Eric: this was the best community proposal.
Linda: more like a R&D project, can we move to a different bucket?
Zev: you have the flexibility to look how you want, can move money around. But on paper, we cannot put to RD.
Ben: this is exploratory, since they did not do due diligence.

Kevin: hard to do due diligence, when there is not much regulation or anything in place. Xcel supports, since somebody needs to go first. This explains why not so detailed.
Lise: established partnership, keep that, and put some best practices forward. Contractor has experience in Colorado.
Decision: favor.

IV. REVIEW RESEARCH AND DEVELOPMENT PROPOSALS

Move Up For Discussion

Move up RD-19: Community Energy Solutions, Anaerobic digester project using food waist. Move up

Move up: RD-16, RD-14, RD-4, RD-18, and RD-1.

Discussion on RD-17:
Mike: good idea, but unfocused. Keep down.

Discussion on RD-3: keep down.

Move Down Not To Discuss

Drop RD-6: AF-Energy Corporation's project on small wind generator efficiency.
Lise: not worth funding.
Decision: move down.

Drop RD-21: Solar Cell & LED Technology's Project
Heather: proposal was very poorly written; had no cost share; it was unclear who was going to do what.
Eric: agrees, this is also a California company.
Decision: move down.

Discussion and Review of the Revised List

RD-7: InterPhases Solar, New CIS Solar Cells Project ($1,000,000)
S&L: prove out and develop new CIS solar cells. They got funding in cycles 2 and 3, but the projects do not overlap. This continues to enhance and develop prior work.
Discussion: We just got their final report for cycle 3, what were the results? They did what they were supposed to do.

Ben: their web site is not sophisticated and $1 million seems like a lot to give again. People involved have good credentials, but who is getting the money? How reliable is the project and how to keep people accountable? We could probably use funds better, but I give that they have great grant writing capabilities. There is high likelihood of royalty returns.
Discussion: solar cells involve thin film on different scales, a roll goes to each segment and then discontinues to roll, the result is a foil film on one side. In previous cycles, they developed the concept and further developed efficiencies in manufacturing. They could find a partner to bring to a marketable product. This is a small shop, with family members. One of them first developed this in her doctorate. Their next step could be finding private equity partners.
Heather: proposing 2% royalty of all sales, is that reasonable?
Zev: net revenue is easy to track.
Ben: maybe we should take the risk in order to get the investment equity, revenues of the product that we funded to develop. Or should we evaluate the project just based on what they are offering now? This not a Minnesota company.
Mike: I don't think we can drop the project that scored the highest, since it scored 20 points more than the next, this is a big difference.
Decision: favor.

RD-11: UMN-Duluth & NNRI, Biomass Torrefaction Project in Rural Area ($1,889,499)
S&L: This project develops an innovative biomass boiler system, which is linked to an electric generator. It is a mobile contained unit to market to MN forestry industry and agriculture. It has good technology, uses bio-coal through torrefaction, and is not very expensive.
Linda: most money will go the boiler and steam-run generator. Take it to where the biomass is. This project is by UMN Duluth, Natural Resources Research Institute (NRRI). This is an interesting project, with 25% matching funds.
Ben: I do not like the non-royalties. They seem arrogant, almost saying that you should be grateful that we take your money.
Zev: UMN allocates 65% of indirect costs to large projects. They are proposing not to apply indirect costs (65%), therefore they want to keep all royalties. Royalties will cover the overhead. UMN sometimes make exceptions to certain funding sources, like federal money.
Ben: is the outcome going to be commercially viable? I question the practicality of a mobile biomass generator within Xcel service territory.
Linda: I like NRRI and the project. It utilizes South-American technology in the US, which is cool.

Lise: interesting project, torrefaction is more efficient, but it goes to steam generator only. NRRI always picks useful projects. We have a lot of waste biomass, but the question is how to use it.
Ben: they are asking a lot of money. NRRI might be a great organization, but we are evaluating the project. It is a very technical proposal, not sure if understand everything.
Discussion: the project is generating distributable energy in MN, which is the goal of RDF. They have experience in developing this technology; the proposal is good and detailed.
Decision: favor.

RD-5: University of Florida Biomass Project ($1,109,538)
S&L: mobile, high-rate anaerobic digester, with smaller tanks. They were funded in last cycle 3. Now their research will focus on the characteristics of the feedstock, what combination of feedstock is optimal. It is about making the product and process optimal. Locations are in MN, Alexandria and Morris. Feedstock includes dairy manor, organic food, and ethanol.
Zev: there were a lot of contract amendments for their last cycle proposal, but we were successful with them. Government entities, like Florida University, have more the type of "take or leave it" contract. RDF and Xcel Energy need to be willing to compromise.
Ben: if it takes $25,000 in legal fees to negotiate the contract, we need to think that, too. I question the practicality of mobility.
Eric: mobile units can be very beneficial, we can bring them to the piles of waste that are all over. Also, you can bring the unit to different locations of the same company. Benefit is that they will partner with Enterprise MN to identify markets and to market the product to users, this is part of funding. Xcel Energy needs to decide if they want to put effort in the contract negotiations.
Decision: favor.

RD-13: UMN Virtual Wind Simulator ($1,391,684)
S&L: project is about practical implementation of a detailed simulation model to model performance and turbulence in wind farms. In cycle 3, they got funding to develop the simulation software. They scored high because the proposal is good; the research team remains the same; and they have access to resources. They will use the $7.5 million UMN wind turbine, which was funded outside RDF.
Kevin: Xcel Energy sees value in this one, it is useful. This has real applications, since the computer simulator will be used at the UMN wind turbine and also at Xcel Energy's wind farm. This is broader and has more potential than RD-16.
Decision: strongly support.

RD-16: UMN, Preventive and Corrective Maintenance for Large Wind ($299,472)
S&L: project is about using the UMN wind tunnel to explore turbine malfunction scenarios and to determine preventive maintenance strategies for operational turbines. It is about reducing the O&M costs of existing wind farms.
Discussion: is there need for this kind of research and do they have any industry partners? Some problems are that they are proposing a doctoral student for 4 years and they are doing modeling in the wind tunnel only.
Decision: against.

RD-12: UMN St. Anthony Falls Lab & S-L-H Sciences, Noise Annoyance Thresholds ($625,102)
Discussion: research is about wind turbine noise annoyance from low-frequency sound and infrasound. Study would use human subjects in a laboratory setting. This got high scores, but are there any benefits to MN ratepayers? This research could be very helpful when deciding on sites for turbines and will also inform debate on turbine noise. The sound data is already collected. More than 50% for salaries.
Ben: I think there is already a lot of scientific research on this.
Linda: there is research, but it is all bad. MN Health Department did a literature search and review, and most studies on turbine noise and vibration were anecdotal without any test environment.
S&L: wind developers are hungry for this kind of research. The results would help in developing set-back regulation and distance. This would address barriers to markets.
Decision: strongly support.

RD-2: UMN-Morris, Optimizing Renewable Energy Generation on MN Dairy Farms ($928,408)
S&L: project will research effective methods for on-site, small wind and PV solar generation on dairy and other live-stock farms. Also a demonstration project installing solar and wind capacity. Part of the project is funded by IREE. Positives: project is at their own dairy farm; team is in place; technically good and well managed.
Discussion: this will increase visibility, tours and other such things are feasible. Solar energy on an organic dairy farm would fit well, also they say this would be the first net-zero daily milking operation in the US. Project team is good.
Mike: strongly support.
Heather: strongly support. This can be applicable to so many farms. They will conduct economic feasibility and life-cycle analysis.
Decision: strongly support.

RD-8: City of Red Wing Biomass Project ($1,999,500)
S&L: instead of burning waste on-site, Red Wing is proposing to process and shred waste on-site and then haul to Xcel Energy's burning station. This proposal does not

produce any power. Proposal would add two new shredding equipment in the existing Red Wing Waste Campus facility.
Heather: as a citizen, I do not think this would be wise use of funds. Why should RD money finance addition of two new shredders?
S&L: proposal got lower scores because of duplication of prior efforts; this is not novel or new idea. It got so high score in overall because this duplication did not have as much weight as the other things that scored high.
Linda: all over the country and the world people are shredding waste, where is the research coming?
S&L: benefits for MN ratepayers got a score of 40, other proposals were at the 30-40 point range as well.
Eric: my issue is that they did not do their homework, for example, there is no load calculation. Also, they talk about converting composting material into burned material, this raises environmental flags.
Linda: garbage just should not be considered as renewable energy.
Decision: favor.

RD-9: Small Wind Turbines, LLC ($446,944)
S&L: they are proposing to compare their small wind turbine technology to conventional wind turbine technology (10, 20, and 40kW turbines). There is no duplication of prior efforts, they are field-testing now. Management is good and very experienced. They propose 75% cost sharing, most money will go towards equipment, and revenues will be used to fund other activities. Benefits to ratepayers: score 30.
Discussion: how are they going to choose what to test against, is this a flaw? Also, who has 10, 20, and 40 kW turbines in MN or US?
Lise: this reads like a marketing case for their own technology. They are going to show that it is more efficient, is this science or marketing? Also, if they are going to take the cost share from power sales, this might never happen.
Eric: there are some good people on the team.
Mike: No funding—there is not much research there, details lacking.
Eric. No funding.
Lise: small wind industry needs to focus on quality control first. Then they can start tweaking efficiency. The last thing they need is more innovative products. No funding.
Decision: against.

RD-4: Xcel Energy, Creating IT Infrastructure for Community Solar Gardens ($390,000)
Discussion: is there anything else than developing the system, if not, then no money.
Linda: this is part of the cost of responding to legislative mandate. Since this is required by law, it will be covered in rates. No funding.

Kevin: there are many stakeholders, and the proposal includes a billing system, integration and testing.
Heather: if Xcel Energy can cover the costs from rates, why would they not?
Kevin: this proposal fits the mission of RDF and is an opportunity to take funds and put them against something we have to do. Yes, this is a legislator mandated thing, but there will be no increase in rates if funded through RDF.
Linda: a transparent way to pay for solar is to go through the regulatory process.
Ben: this is a more visible docket than a rate case. I think there is some justification, the project is about technology and integration.
Eric: this is mandated by law, therefore it is not something to be funded from RDF.

Paul: we could consider three options: 1) funded from the RDF $30 million, 2) consider part of administration of RDF program, like labor etc. subject to 5% cap, or 3) nothing to do with RDF, since mandated by law. What is your input?
Linda: we should ask will this project happen without RDF money. If yes, we should not fund. This is mandated by law and Xcel gets cost recovery.
Mike: actually solar gardens are mandated, this IT and billing infrastructure is not.
Kevin: there are options instead of creating a billing system, like hand billing if the projects are small. There is no intent to hide costs anywhere. Going through a rate case has much less oversight, this would just be an expense item among others, and you would need to know where to look for it.
Zev: Xcel Energy is trying to set the best practice here.
Eric: this is an administrative, burdensome project.
Kevin: Xcel Energy really wants to do this, we are not threatening to walk away from solar gardens if this does not get funded from RDF.
Lise: I would put this in the favor category. If not in RDF, will be left in the back room. If in RDF, should be implemented in coordination with another project.
Decision: favor.

RD-18, Open Access Technology International ($1,945,223)
S&L: project is about creating and evaluating the performance of integrated software, hardware, and installed solar infrastructure. Involves installing 250kW of tenKsolar at their headquarters, creating a smart house.
Discussion: MN-based company, solar specialists, pretty critical work that is ongoing also elsewhere. Negatives: no discussion on market barriers or who will do what. About 90% of funding is for capital and salaries. This is not novel in the US.
Eric: this is a relevant issue to tackle, based on my knowledge and experience. Big weakness is that they had very limited information on how they are going to share results.
Kevin: this is RD dream world. We have a mandate for 10% solar, and this will show how we will get there. This is applicable research for Xcel Energy's service territory.

Eric: you should do this in a warehouse, not in a smart house. This sounds like "let's benefit ourselves."
Decision: against.

RD-1: UMN, Developing Gasification Technology from Solid Waste ($999,999)
Discussion: they are developing novel gasification technology for small power generation, combined conversion small mobile facility.
Lise: the proposal is long, very specific to this project, and well planned. There is no cost share.
Discussion: Demonstration of microwave plasma gasification has been done in other states, not a novel idea. Also, royalties and cost share are weak points.
Lise: the question is whether this is original and not duplicative, I would say we drop.
Decision: against.

RD-19: Community Energy Solutions, CES First Light Biogas Generator ($250,000)
Lise: no funding. The plan lacks detail and is poorly explained. This guy wants to use bacteria and something else to generate power, but will not tell how this will happen. He promises an 8% methane conversion from biomass, but will not explain how this will be done. This reads like a marketing plan, execution is not very well planned.
Linda: no funding.
Decision: against.

RD-14: Barr Engineering, Health-Assessment Tool for Turbine Towers and Foundations ($161,081)
S&L: Develop a portable system of sensors that will measure the health and life expectancy of wind turbine towers and foundations. The question is why we need a new, simplified and mobile system. The goal and deliverables did not match.
Lise: this would be user-friendly and a better product.
Linda: this is cheap and useful. A wind farm owner would buy one sensor, and move it from turbine to turbine. Many towers are now 20 years old, so the timing is good.
S&L: scores were low because they did not give enough data and background information. They just said that more detail will be provided later.
Ben: they are looking at the stress and tilt of foundations and towers. This is not a terrible thing to look at in a cost-effective way. Not a big amount of money, but lacking data. BARR is a reputable company, and the research would help them in the development of foundations and towers.
S&L: their only deliverable is a report. They will not actually develop or deliver a mobile sensor. The production and marketing will be done separately later.
Ben: maybe they are doing this to avoid royalties. Not to have a product is a problem. Is the project in itself good enough to do?
Kevin: deliverables are not strong.

Paul: it is not totally unreasonable to say that first we do research, then product testing, and then commercialization. This might be the step 1, which does not take a lot of money.
Linda, Mike: strongly support.
Heather: is the absent of royalties a non-starter? Many other applicants addressed royalties honestly and the Commission puts high value on them.
Paul: I don't think royalties are a non-starter, but they are important.
Ben: if you would go to private equity market for funding, they would take a part of your company and royalties.
Decision: strongly support.

Move Proposals From Favor To Strongly Support or Vice Versa

EP-20: Target proposal
Eric and Ben: good value, move up.
Decision: move to strongly support.

EP-48: Blue Lake Wastewater, Oak Leaf
Zev: need some collateral assignments for financing.
Eric: well-known developer.
Decision: keep in favor.

EP-29: Dragonfly Solar, Dodge Center
Decision: keep in favor.

EP-6: Saint Johns, Best Power
Decision: keep in favor.

EP-5: School Sisters of Notre Dame
Decision: move to strongly support.

EP-4: South St. Paul Anaerobic Digestion, SGE Partners Biomass
Decision: keep in strongly support.

EP-15: MN Solar Garden Pilot Project
Ben: extremely deficient in application. Site control is not even potential yet. Why would we fund something that was not even recommended? Need to justify to the Commission.
Paul: support would highly depend on resolving all deficiencies. If those are resolved, is this a good project?
Heather: why would we give another chance if they did not get it right the first time?

Zev: is it worth supporting, this is the best community project. No dollars are at risk since they get a lump sum at completion.
Decision: keep in favor.

EP-34: Lowertown Ballpark
Decision: keep in favor.

Advisory Group left all research proposals as they are. Proposals ranked favorable will make the reserve list, if some recommended proposals fall through. Group members will rank reserve list from 1-10 and email results on Friday, June 14.

V. REVIEW HIGHER EDUCATION PROPOSALS

These were scored by advisory group members (Bull, Gerber, Jensen, Schwain, Taylor, Trudeau, Westra). The final score for each criteria is the average of member scores.

Ben: UMN proposal has outrageous bureaucracy, travel costs, flying in consultants, etc. This is inappropriate and inefficient. Also, I did not like the advisory board, only need a peer review type of committee. Also, dollars for policy development are not right.
Linda: I think they finally heard what has been said about overhead, lack of transparency, and how to choose projects. They got the message.
Lise: they really put in some detail. But others seem to want it more and be more appreciative.

HE-1: Minnesota State Colleges and University (MnSCU)
Requested: $5,500,000.
Decision: strongly support some amount of money.

HE-2: University of St. Thomas
Requested $2,157,215.
Mike, Lise: strongly support.
Kevin: our engineering group would like to learn about micro grids, but this is not within our system. Maybe we should consider a separate RFP on micro grids? This reads like a RD project, not a block grant.
Lise: OK, can we do this as a RD project?
Heather: I liked the project, can we structure it as RD, and keep in this category just to fund it.

Zev: there is some wiggle room, but also statutory requirements for the block grants. It becomes a fairness issue, for example, how the indirect costs are treated and the requirement of peer review committee.
Lise: if we give RD grants to UMN and block grants to MnSCU and St. Thomas, everyone would get something, seems fair.
Ben: agrees about fairness.
Linda: St. Thomas project needs to benefit Xcel Energy service territory, Owatonna is outside of it. Maybe the students and faculty who live in the Xcel service territory will benefit.
Kevin: Xcel Energy is very interested in micro grid, but not this project. This proposal is difficult, because our engineers would not have access to the project.
Linda: I really like this project, but where is the direct benefit to Xcel Energy's ratepayers.
Mike: fund MnSCU at $5.5 million and nothing else.

Linda: we need more discussion on the UMN proposal, politically we need to think this thoroughly. They did not get the money from legislature in RDF for IREE and laid people off. Are we are creating a political problem for the fund?
Lise: UMN is getting many RD projects. Also, we spent a lot of time with the UMN, and they still did not get the proposal right. It is a bad proposal, which is very frustrating. I like the idea of supporting UMN, but it is a bad proposal.
Ben: we have neglected MnSCU for a long time, they will develop many concrete things, jobs, training programs, etc.
Heather: maybe we should give UMN something, a portion. I did not like their proposal language and did not appreciate the lecture on indirect costs.
Mike: I do not want the policy development or the advisory committee. If they change their proposal, I could give them something.
Zev: block grants have more flexibility in negotiations. RDF can set the terms and work with them.

Linda: this is not a one-time decision, we are making a long-term commitment. The problem with IREE was that they did not have any other plans. They were relying on the RDF money as their main resource, and when that was gone, they were in trouble.
Lise: I think UMN could have found another funding source for IREE.

Any consensus on UMN: Mike no, Linda no, Lise no, Eric reduced amount, Ben no, Tami reduced amount, Heather reduced amount, Kevin yes.
Comments: UMN is top heavy with fluff. The substance, what they are trying to accomplish, is good. How they are trying to do it is expensive with unnecessary costs. Block grants give us flexibility, maybe we can work with UMN.

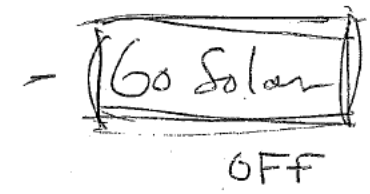
Decision: strongly support MnSCU at $4.5 million.

Decision: strongly support St. Thomas at $1.5 million on the condition that they move the project location to St. Paul campus to provide benefits to Xcel Energy.

Ben: want a meeting with UMN to discuss scope and contract issues.
Linda: agreed. There are serious issues that need to be resolved before we can give the money: scope, contract issues, advisory board, unnecessary costs like travel, and the policy piece.
Kevin: go to the Commission first, before talking to UMN. Can they even do the program at the reduced funding level?
Heather: still bothered by the UMN language, royalty issues, and treating Xcel Energy as a for-profit sponsor. At the end, the money will come from the ratepayers.
Paul: this is good feedback for the Company, and it needs to think first how to approach these substantial issues.

Linda: I like what UMN proposes to do, but don't like their history and attitude. However, UMN definitely has the best track record in research.
Mike: I agree with reduced UMN funding if it is only for research: no speakers, travel from Europe, advisory board, or the policy piece.
Eric: we should value high-level research and education.

Decision: strongly support UMN at $3 million, on the condition that the royalty issues can be resolved and the scope is defined so that it is for research and does not include the policy piece, an advisory committee, or unnecessary speaker/travel costs.



"good project but not right for RDF"
Mike –
Linda – not Right
~concern
Zev – PPA 6-8 mos

+ TGT → not innovative
→ good project in corridor

+ OAK LEAF

Met Comm
* ~contingent upon

++ Cornerstone

Lyndale Garden – tied to redevelopment

+ Austin — Ben: concerned about lost sales !!!

++ MAC — RECs! contingent upon Rec...
Ben supports ↗ Mike supports

++ Goodwill —

++ HPS —

+ Dragonfly

Arrora/Solunt

~ "Don't love it"
~ legal issues
Mike – similar to cornerstone
– against ?

– Gustavus — move down –

Linda: rec. "NO"
Heather: "NO"

- Geronimo/Slumberland "nothing special..."

++ ARCC
"all on-site"
"strongly support"
* contingent upon curriculum developed to install + maintain solar

- Hopkins ~ sloppy proposals

+ Best/NotreDame ~ lease/100%

- Rogers – nothing special and more expensive

- Murphy – very low cost share = Linda = Ben

++ Edison – more innovative, decent cost share
Mike + Linda +

++ Mondovi – city has binding? Ben prefers
* ~~Plus~~ contingent on funds after
* – contingent on RECs

+ Berger costly
* contingent

Gap in legislation
more cost effective

++ SGE
* jobs
* model

+ Hutch Linda's technical interest

MPLS — Ben → strongly favor
Linda: RIP is wrong /
RDF is wrong, originally intended for risky things
must show
very firm: SR does not belong
Ben: attempt to fix legislation
: "lacking details"
Eric: push out other proposals

XEL —

Ben: the big price is very important
Heather — liked it... energy on snowboard
— St. Paul SDs at night
EXPENSIVE:

\+ St. Paul

Farmademica — sentimental wind
expensive

\+

DNR — — Linda: DNR did this well
: great at education
Ben: not for RDF to fund

— Lise = Yes Linda = Yes
Ben = NO
Eric = YES

MRES

\+

RDF is not right
no site
expensive
~

④ more efficient than this..
③ in-line w/ RDF statute
① ★ legislation gap ② ★ fund home for SR?

R&D

+ Inter phases — best chance at royalty
- get IP from previous efforts

+ U of M - NREL $1.9M
- Ben: similar to others?
* contingent on IP resolution

+ U FLA
- Mobile / fast A.D.
- variety of feedstocks
- unresolved IP issues w/ previous
* contingent

U of M modeling
* letter from Nathan

13

++ U of M sound
- concern on cost Ben, Linda
- is this valuable? Ben
Australia & Canada

++ U of M NZ dairy

+ Redwing
- citizen reached out
- Linda: → New Port
→ Flu R/Elk River

Why R&D?
How novel?

- Eric: ≠ composting
- Linda: garbage ≠ fuel

Small Wind LLC

Zev: is cost share from energy sales?

Xcel Biz

Linda – mandated / not needed
Ben – more visible
Eric – mandated / not needed

litmus test: would this happen anyway

Ben – how do we know this won't
Lise – we don't want this to be on the back burner

OATI

~ S&L critical of ideas
~ not novel in US

U of M
Microwave gas.

U of M
BARR

TT

* contingent on IP
* contingent on final deliverable

~ Ben

MRES

~ reasons : no risk for RDF
~ All but Ben favor moving into
⇒ KEEP ON ~~ALL~~ BACK UP

ST PAUL

~ Ben favored, Eric didn't
~ KEEP ON BACK UP

ST THOMAS

fairness issue → Zev
separate
lots of challenges

need to move location

U of M

Mike ⇒ no policy, no advisory wanted
Zev ⇒ do this on our terms, not
Heather ⇒ didn't want a lecture
Linda ⇒ like proposal / don't like proposal / tone
Ben ⇒ don't fly people in

need to resolve contractual issues

MnSCU

→ what is wind-down report

[PC 32]

PC Pilot feedback
-Lisa Kaufmann

RDF-6/25

Semi-Update -okay to transition of funding from technical → AG

POO Wants - 1) Timelines w/ projects
-add "teeth" to keep projects moving
2) Explain project benefits and measurements
3) Lessons learned so far in the selection report

Issue
-Higher Ed
-don't like partial funding

Filing - Share drive
-RFP Process complete

NM-2014-5% 2020-8%

7/8 - RDF

1) Filing - goal to file 7/16

2) Delays - move on reserve list
- presentation of addt'l data to ~~Dept~~ PUC
- 3 Recommended emphasized
- MNSCU fund, negotiate other 2

Red Wing - Statutory definition of Renewables - Linda - Lise

- XE - concern about grant and rate recovery → double recovery
- Why "13" from Lise

Linda ZeV
Heather

RDF Advisory Group Meeting

August 13, 2013

1:30 – 3:00 p.m.

Agenda

Red Wing
- not new technology
- just using an existing technology that sheds better, closer to the plant

In Person: Conference Room 6E

Teleconference Number: 612-330-5656 or 1-866-672-3839
Meeting # 6980810

I. Call to Order/Approval of Minutes

II. 4th Cycle Selection Report and Supplemental Report

III. Crown Hydro (AH-01) update - do they need a new environmental review?
- FERC - license update needs-?
⇒ if all good will move forward fall 2014

IV. Diamond K Dairy (EP-51) update
- rcvd $228,000, construction started
- completed sometime this winter

V. Final Project Report – University of Minnesota -Wind (RD3-42)

VI. Other Business – Next Meeting (September 10, 2013)

Sept 10
- 1:30
2nd Tuesday

RDF Advisory Group Meeting

October 8, 2013

1:30 – 3:00 p.m.

Agenda

In Person: Conference Room 7E

Teleconference Number: 612-330-5656 or 1-866-672-3839
Meeting #6755271

I. Call to Order/Approval of Minutes

II. Final Project Report – University of Minnesota –Cropping (RD3-28)

III. 2014 RDF Rate Rider ~22 Mil recovery, $.00075/kWh
→ legislative mandate (12 mil in 2014)

IV. 4th Cycle Update/Comments – 21 total (3 from MN Go Solar, DER; 17 others)
- extend final respone to Dec,

V. Other Business – Next Meeting (November 12, 2013)

S&L audit
- is number/math correct
- is scoring appropriate

- cus sales
cuwdance

Proposal	Elec. Copy	Organization	Technology	Type	Grant Request	NOTES
EP4-1	yes	ECOCORP	biomass	EP	$2,000,000	14MW on 150k -
EP4-2	no	City of Hopkins	solar	EP	$708,204	
EP4-3	no	Minneapolis Public School	solar	EP	$917,250	
EP4-4	yes	SGE Partners LLC	Biomass	EP	$5,000,000	
EP4-5	yes	Best Power, Int'l, LLC	solar	EP	$900,000	
EP4-6	yes	Best Power, Int'l, LLC	solar	EP	$172,213	
EP4-7	no	Anoka Ramsey Community College	solar	EP	$828,900	
EP4-8	no	Salvation Army	solar	EP	$460,000	
EP4-9	yes	Mondovi Energy Systems	biomass	EP	$2,000,000	
~~EP4-10~~	~~yes~~	~~Valley Casting, Inc.~~	~~solar~~	~~EP~~	~~$1,450,000~~	
EP4-11	yes	Innovative Power Systems, Inc.	solar	EP	$1,850,000	peak def broad. - too cost effective - partial fund - 967 KW $1,913/KW
EP4-12	no	Xcel Energy Services, Inc.	solar	EP	$10,800,000	[illegible]
EP4-13	yes	Metropolitan Airports Commission	Solar	EP	[$2,022,507	$1,714/Kw - 1,770,000 + 5.5/KWH, match w/solar developer - developer = owner TBD
EP4-14	yes	Murphy Warehouse Company	solar	EP	$2,016,118	
EP4-15	yes	MN Renewable Energy Society	solar	EP	$2,661,320	Solar Garden w/ bill credit - $2,661/KW, PPA for 20 yrs @ .07¢ now. partner need
EP4-16	yes	OSEMI, Inc.	Solar	EP	$1,750,000	
EP4-17	yes	MN Department of Natural Resources	solar	EP	$641,000	
EP4-18	yes	Gustavus Adolphus College	Solar PV	EP	$480,000	
EP4-19	no	Adonis Eco-Housing	Solar PV	EP	$2,046,673	
EP4-20	yes	Target Corporation	solar	EP	$583,513	350 KW - $1667/KW - good technical, cost sharing, high awareness, energy conser
EP4-21	yes	Farmamerica	solar/wind	EP	$600,000	
EP4-22	yes	Minneapolis Park and Recreation Board (MPR	solar	EP	$969,741	smaller systems, follows intent of legislation
EP4-23	no	Green Peak Solar LLC	solar	EP	$2,300,000	
EP4-24	yes	Bergey Windpower Co	wind	EP	$1,106,600	
EP4-25	yes	Hince Farms, Inc.	Solar PV	EP	$350,000	
EP4-26	yes	Positive Energy Systems, LLC	Solar PV	EP	$2,000,000	
EP4-27	yes	Positive Energy Alternatives	solar	EP	$2,000,000	
EP4-28	yes	Future Force Inc.	wind	EP	$2,778,400	
EP4-29	yes	Dragonfly Solar, LLC	solar	EP	$1,650,000	Not innovative
EP4-30	no	Gelco Corporation d/b/a GE Fleet Services/Dr	Solar	EP	$3,129,400	
EP4-31	yes	Heliacal, LLC	Solar PV	EP	$1,999,481	
EP4-32	yes	Emerald H@, LLC (in partnership with Norfol	wind	EP	$3,855,000	
EP4-33	yes	PowerWorks Wind Turbines	Wind	EP	$1,998,416	Refurbishment project
EP4-34	yes	City of St. Paul	Solar PV	EP	$555,750	$5557/KW, could move forward. [illegible]
EP4-35	yes	Revier Cattle Company	other	EP	$6,756,225	
EP4-36	yes	City of Austin	biomass	EP	$3,564,000	[illegible] (1MW)
EP4-37	yes	Natural Systems Utilities, LLC	Biomass	EP	$2,000,000	
EP4-38	yes	Minnesota Go Solar, LLC - SREGMA	Solar PV	EP	$7,439,000	S/SE - 20 1MW sites in lowsload - reduce to 5 sites - ? Sch Gibson - not Xcel federal LT-PPA prices; good project - [illegible] $ significant, the cost & energy use on site ?
EP4-39	yes	Goodwill Solar, LLC	Solar PV	EP	$1,075,250	consider
~~EP4-40~~		~~Duplicate of EP4-011~~				
EP4-41	yes	City of Hutchinson	solar	EP	$958,369	

3/29 elec =

EP4-42	no	Aurora St. Anthony Limited, LLC	Solar PV	EP	$398,000	
EP4-43	no	Cornerstone Group	solar	EP	$310,310	solar garden/community - limited benefit
EP4-44	no	Region Five Development Commission	Solar PV	EP	$1,993,659	
EP4-45	no	City of Rogers	Solar PV	EP	$1,470,544	
EP4-46	yes	Geronimo Energy	solar	EP	$1,503,000	
EP4-47	no	North Central Regional Council of Carpenters	solar	EP	$1,102,395	
EP4-48	yes	Oak Leaf Energy Partners Ohio, LLC	Solar PV	EP	$2,000,000	
		46 Total EP Projects			$93,701,238	
HE-1	yes	Minnesota West Community and Technical College		HE	$5,500,000	aligns w/RDF objectives, indirect costs-facilities w/no incremental expense can we add partnering req
HE-2	yes	University of Minnesota		HE	$6,900,300	direct to projects, Royalty sharing ?
HE-3	yes	University of St. Thomas		HE	$2,157,215	located in Muni, diesel gen set, funding "green facility" upgrade Biodiesel Intellectual property ± test beds
		3 Total HE Projects			$14,557,515	
RD4-1	yes	Regents of the University of Minnesota	Biomass	RD	$999,999	
RD4-2	yes	Regents of the University of Minnesota	S&W	RD	$982,408	
RD4-3	yes	Angel Alternative Energy	Solar PV	RD	$593,604	
RD4-4	no	Xcel Energy Business Systems	Solar PV	RD	$390,000	
RD4-5	no	University of Florida	Biomass	RD	$1,109,538	
RD4-6	yes	AF-Energy Corporation	S&W	RD	$1,573,680	
RD4-7	yes	InterPhases Solar	Solar PV	RD	$1,000,000	
RD4-8	yes	City of Red Wing	Biomass	RD	$1,999,500	shred, Red Wing RDF needs fuel - why R&D?
RD4-9	yes	Small Wind Technologies, LLC	wind	RD	$446,944	
~~RD4-10~~	~~no~~	~~Sheri Zukie~~	~~hydro~~	~~RD~~	~~$2,000,000~~	
RD4-11	yes	Regents of the University of Minnesota	Biomass	RD	$1,899,449	
RD4-12	yes	University of Minnesota	wind	RD	$625,102	
RD4-13	yes	Regents of the University of Minnesota	Wind	RD	$1,391,684	
RD4-14	yes	Barr Engineering Co.	wind	RD	$161,081	feasible, will U of MN facility provide reliable data - is this an issue - Xcel will use
~~RD4-15~~	~~yes~~	~~Regents of the University of Minnesota~~	~~Biomass~~	~~RD~~	~~$946,110~~	
RD4-16	yes	Regents of the University of Minnesota	Wind	RD	$299,472	
RD4-17	yes	University of Minnesota - Morris	other	RD	$2,078,708	
RD4-18	no	Open Access Technoloty International (OATI)	solar	RD	$1,945,223	
RD4-19	yes	Community Energy Solutions	biomass	RD	$250,000	
~~RD4-20~~	~~no~~	~~Business and Real Estate Investment, LLC~~	~~other~~	~~RD~~	~~$2,152,000~~	
RD4-21	yes	Solar Cell & LED Technology	solar	RD	$1,000,000	
		18 Total RD Projects			$18,746,392	
		67 Total Proposals			$127,005,145	

Denotes restrictions between reviewers

Denotes ineligibility

ECOS ENERGY LLC INFORMATION REQUEST

☐ **Non Public Document – Contains Trade Secret Data**
☐ **Public Document – Trade Secret Data Excised**
☒ **Public Document**

Xcel Energy
Docket No.: E-002/M-12-1278

Response To: Minnesota Go Solar LLC c/o Ecos Energy LLC
Information Request No. 1
Date Received: September 12, 2013

Question:

On May 30, 2012, a press release was made announcing that "Xcel Energy has awarded Outland Energy Services a long-term service contract to provide operations and maintenance services at three Xcel Energy wind farms totaling 328 MW until 2017. In Minnesota, Outland will provide full-time services for the 201-megawatt (MW) Nobles wind farm in Nobles County and the 100.5 MW Grand Meadow wind farm in Mower County. Both sites utilize GE 1.5 MW wind turbines. In Colorado, Outland will provide full-time services for the 26.5 MW Ponnequin site, which utilizes both Vestas 660 kW and NEG-Micon 750 kW wind turbines."

On June 1, 2012, the day after the Xcel press release went out, Nathan Svoboda from Xcel called Steve Scott of Outland Energy Services and asked him for "color" regarding "Outland's owner" and the lawsuit against Xcel, which was a reference to the net zero docket pending at that time at the Federal Energy Regulatory Commission. According to Nathan Svoboda, an attorney inside Xcel saw the release and connected the dots of Outland to the Allco claims. Nathan conveyed that something transpired immediately after the press release and quite a bit of anger within Xcel was generated by the selection of Outland for the wind farm maintenance contract once the dots were connected.

A. Identify the attorney that Nathan Svoboda was referring to.

B. Please provide copies of all emails or other correspondence between the dates of May 30, 2012, and June 14, 2012, mentioning or relating to any of the following terms (i) Outland, (ii) Ecos Energy, (iii) Allco, (iv) Jeffers, and/or (v) Melone.

Response:

A. Nathan Svoboda does not recall the attorney referenced in Information Request No. 1.

B. Xcel Energy objects to the scope of this Request on the ground that it seeks information that is not relevant to the matters at issue in this Docket. Xcel Energy also objects to this Request as overly broad as to the content of the Request, and because the Request is made to cause undue burden and needless increase of expense to Xcel Energy. Xcel Energy objects to this Request to the extent it seeks the production of documents protected by the attorney-client privilege, the attorney work product doctrine, and/or any other applicable privilege.

Subject to and without waiving the foregoing objections, Xcel Energy will produce non-privileged, responsive documents to the extent such documents exist and can be located. Xcel Energy will supplement its response to this Request if and when additional documents are located.

Response By:	Paul Lehman
Title:	Manager, Compliance and Filings
Department:	Regulatory Compliance and Filings
Date:	October 14, 2013

"XCEL ENERGY RDF PROPOSAL"

Application for Grant Funding from

Xcel Energy's Renewable Development Fund

4th Funding Cycle

20 - 1 MW_{ac} Solar Energy Facilities
State of Minnesota

Submitted by: Christopher Little
Director of Development
Minnesota Go Solar, LLC
222 S 9th St, Suite 1600
Minneapolis, MN 55402
Phone: (651) 268-2053
E-mail: chris.little@ecosrenewable.com
Date: April 1, 2013

THE INFORMATION PROVIDED IN THIS APPLICATION IS CONFIDENTIAL AND, IN PARTICULAR, THE DATA PROVIDED HEREIN RELATING TO PROJECT COST, ENERGY PRICING, AND OTHER ECONOMICS OF THE PROJECT IS CONFIDENTIAL WHETHER OR NOT SPECIFICIALLY SO INDICATED IN THE TEXT HEREOF. IN ADDITION, THE INFORMATION PROVIDED IN THIS APPLICATION, AND, IN PARTICULAR, SUCH COST, ENERGY PRICING AND OTHER ECONOMIC INFORMATION CONSTITUTES "TRADE SECRET INFORMATION" UNDER MINN. STAT. §13.37 AND IS PROTECTED FROM DISCLOSURE UNDER MINNESOTA LAW AS NONPUBLIC DATA.

Contents

SECTION 1 – SCOPE OF WORK

1.1. Executive Summary

On January 7, 2013, Minnesota Go Solar, LLC's ("Go Solar"), parent company, Minnesota-based Renovo Renewable Energy LLC, completed Minnesota's largest solar generating facility, a 2MW DC solar facility located in Slayton, Minnesota. The Slayton solar project was constructed by a Minnesota-based contractor, and designed by a Minnesota-based engineering firm. Project funding was provided by customers of Xcel Energy through a grant from the Renewable Development Fund, 3rd cycle. Go Solar was formed to take solar to the next level in Minnesota, with the same project team that successfully completed Minnesota's largest solar facility. Go Solar proposes to construct twenty (20) – one (1) megawatt (MW) alternating current solar photovoltaic ("PV") generating facilities ("Solar Projects") in Xcel Energy's ("Xcel") service territory. The Solar Projects will be located near sufficient load centers in small and medium sized cities throughout southeast and southwest Minnesota. See the map in Figure 1 below and the maps attached in Appendix E. By leveraging the Minnesota-based Go Solar team's experience, and the cost savings that come from a larger collection of projects, the Go Solar projects will increase the market penetration within the state of renewable electric energy resources at reasonable costs. The grant requested herein, $7.439 million, approximates a production incentive equal to just $22/MWh. The Go Solar projects will promote the start-up, expansion, and attraction of renewable electric energy projects and companies within the state.

The Go Solar projects would more than double Xcel Energy's current solar generating capacity and can also be used to create a template for a solar renewable energy credit ("SREC") program in the State of Minnesota by demonstrating the economic viability of a renewable energy production incentive that is deployed on a large scale throughout Minnesota. At the time of this proposal, Minnesota legislative leaders are currently considering several proposed bills that incentivize solar in the state, however, none of the proposed bills are considering a production incentive mechanism that has achieved considerable success in other states. The twenty (20) – one (1) MW_{AC} Go Solar projects would demonstrate how the State of Minnesota can expand its solar generating capacity by a combination of (i) a long-term power purchase agreement at a utility's project avoided cost, and (ii) a fixed production incentive (i.e. SRECs) over a specified term.

In addition, the value of the Go Solar projects to Minnesota's economy and to its greenhouse gas emissions ("GHG") goals would be significant. Based upon the National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impact Model, the economic benefits associated with Go Solar projects at the Minnesota state and local level (including onsite labor impacts as well as solar module and supply chain impacts) would be $99.7 million. With respect to GHG, Minnesota is one of a few states that have adopted statewide laws to limit greenhouse gas emissions.[1] In its January 2013 Biennial Report to the Minnesota Legislature, the Minnesota Department of Commerce confirmed that the 2015 GHG reduction target of 15% will not be reached. While GHG emissions were reported to have declined an overall 3% between 2005 and 2010, the Biennial Report notes that the drop was due primarily to the economic recession[2]. Now that the recession is hopefully over, the Biennial Report acknowledges that GHG emissions are back on the rise. In addition, Solar is also the only renewable resource that will continue to provide GHG benefits for the next 45-60 years.

[1] See, Minn. Stat. 216H.02.
[2] See, Biennial Report, p.4.

2.1. Project Goals

As the price of solar modules and ancillary solar equipment continues to become more affordable and more efficient, the price to generate a kWh of solar energy has declined over the past year, and is expected to continue to decline. Combining this factor with solar energy's ability to deliver power during peak demand periods, the State of Minnesota and other states are considering legislation (or have implemented legislation) to expand the solar generating capacity within the state's borders. Legislation for solar incentives currently being considered in the State of Minnesota, including H.F. 956, has been limited to net metering facilities. Supporters have also proposed a 10 percent solar mandate on utilities. Both efforts have a goal of expanding solar generating capacity in the State of Minnesota, however, limiting solar generation to net metered facilities will create limits and barriers on the ability of Minnesota to substantially increase its solar generating capacity while also limiting the geographic location of any new solar generating facility. While net metering can be an effective way to incentivize the development of solar in small increments within highly urbanized areas, it requires the owner of the solar facility to consume the bulk of the energy produced. This mainly limits the incentives to rooftop solar installations of those that are consuming large amounts of electricity (i.e. manufacturing facilities). A net-metering incentive mostly eliminates the ability of smaller and medium sized rural cities from being able to capitalize on renewable energy solar resources.

A fixed price SREC program, combined with a fixed long-term PPA at avoided costs, on the other hand, provides a production based incentive to a solar generator regardless of whether or not the owner of the facility is consuming the electricity. SRECs remove the geographic and growth barriers that are placed on solar development that would otherwise be created by a net-metering program. By constructing 20 – 1 MW_{AC} Solar PV generating facilities throughout the state of Minnesota, Go Solar would hope to achieve the following goals:

1) Demonstrate how the State of Minnesota can expand its solar generating capacity by a combination of (i) a long-term power purchase agreement at a utility's project avoided cost, and (ii) a fixed production incentive (i.e. SRECs) over a specified term.
2) Create a framework for the terms and prices for such a program in the State of Minnesota that would be economically viable for solar developers and Xcel Energy or other utilities in the state, as well as minimize costs for ratepayers.

In addition, by leveraging the Minnesota-based Go Solar team's experience, and the cost savings that come from a larger collection of projects, the Go Solar projects will increase the market penetration within the state of renewable electric energy resources at reasonable costs. The grant requested herein, $7.439 million, approximates a production incentive equal to just $22/MWh. The Go Solar projects will also promote the start-up, expansion, and attraction of renewable electric energy projects and companies within the state, both with respect to the Go Solar projects, and the future solar projects that would benefit from a fixed price SREC program, combined with a fixed long-term PPA at avoided costs.

These goals are compliant with the goals of §116C.779 and aligned with the RDF mission because the Go Solar projects (i) would increase market penetration of renewable energy at a reasonable cost ($22 per MWh), (ii) could be used to create a framework of a viable production incentive to further increase market penetration of renewable energy at a reasonable cost, (iii) promote the development of renewable energy projects and attract existing and start-up companies to invest in the energy infrastructure of the State of Minnesota and (iv) increase and expand the development of solar energy

generation throughout the state of Minnesota by creating a foundation by which solar energy development on a large scale could be benchmarked.

1.3. Project Objectives

In order to achieve the stated goals, Go Solar will focus on the following objectives:

1) Determine what the general terms of an SREC program would need to include (i.e. price per MWh and contract length) to make solar economically viable in the State of Minnesota at a reasonable cost to Minnesota ratepayers;
2) Demonstrate how 20 MWs (AC) of solar, disbursed over 20 locations, can be deployed throughout Minnesota over a period of approximately 1 year from grant contract execution;
3) Deliver solar generation to Xcel at an affordable price equal to a projected long-term avoided cost;
4) Demonstrate how a fixed price SREC program can cost effectively expand solar throughout the State of Minnesota;
5) Determine the economic benefit of a large scale solar development deployment would be to the State of Minnesota in terms of economic investment and jobs.

1.4. Performance Measurements

To demonstrate how the Project Objectives were met, Go Solar proposes to provide the RDF with project pro-formas, including project costs and expenses, that would show what each solar project's rate of return was with an SREC production incentive (in the form of the proposed RDF grant) and without an SREC production incentive. This will allow the RDF and the State of Minnesota to determine (based on the installed cost of solar and solar radiation levels in Minnesota) the general price and term over which an SREC program would be commercially viable in the State of Minnesota. Go Solar will also provide the RDF and the State of Minnesota with a benchmark for jobs created during the construction of the Go Solar Projects. Furthermore, the time it takes Go Solar to construct the Solar Projects will allow the RDF and the State of Minnesota to determine how long it might take to deploy a large SREC program..

1.5. Project Schedule

Upon receipt of a successful award from the Xcel Energy Renewable Development Fund in 2014, the schedule for the development and construction of all 20 Solar Projects would be as follows:

Task	Begin Date	End Date
RDF Grant Contract Execution	January 2014	January 2014
PPA Negotiations	October 2013	January 2014
Interconnection Application and Approval	July 2013	January 2014
Obtain Local and State Permits	October 2013	April 2014
Equipment Procurement	April 2014	June 2014
Construction	August 2014	December 2014
Project Commissioning	November 2014	January 2015

Go Solar will develop a detailed engineering, procurement and construction schedule based on its extensive experience developing similar distributed generation solar projects, including the Slayton Solar project. GO Solar's team developed, and financed, 12.3 MW_{DC} of distributed generation solar in the Midwest in 2012. This experience and expertise allows Go Solar to have a very realistic and calculated understanding of the time required to develop and construct the 20 Solar Projects within the proposed time period. The lead times that are out of the control of Go Solar and are perhaps the wild card in the above schedule, is how long it would take Xcel Energy to review 20 separate interconnection applications. Based on our experience with the distributed generation interconnection process with Xcel Energy and other utilities throughout the country, we have found that it typically takes a utility about 6 months to review and respond to an interconnection request. In addition, the above timeline would assume that Go Solar would be able to successfully negotiate a power purchase agreement with Xcel Energy concurrently with the grant contract at the proposed avoided cost prices in this proposal.

SECTION 2 – TECHNICAL ASPECTS

2.1. Project Description

2.1.1. EP Project Description

Go Solar is proposing to construct 20 – 1 MW_{AC} new solar generating facilities using identical equipment configuration for each project. Go Solar has procured and installed eight (8) similar sized generating facilities totaling over 12.3 MW_{DC} in the Midwest using a similar configuration. The familiarity with the equipment and the installation process allows Go Solar to efficiently design and install the system's equipment and provides Go Solar with a very accurate picture of what the installed cost will be for each solar generating system.

Each 1 MW_{AC} solar generating facility will utilize approximately 4,334 – 300W polycrystalline 72 cell solar modules (Trina Solar TSM-PA14 series) to generate electricity using sunlight as a fuel source. The solar modules are mounted on a fixed-tilt mounted on a fixed tilt racking system (Legrand Cablofil FASrack), oriented due south at a tilt angle of 35 to 37 degrees. The racking system will be supported above ground level by a series of W6x9 steel H-beam piers, driven directly into the ground by a pile driver (no concrete is necessary). There will be approximately 850 to 900 piers in the array depending upon the topography and shape of the array.

The solar modules will be connected in series strings of 11 modules each; and each 1 MW_{AC} array will have approximately 394 strings each. The strings will then feed into a number of DC combiner/disconnect boxes (SunLink HomeRun), where they are fed into a larger, single conductor which runs to the facility's central equipment skid. There will be approximately 20 combiner boxes in each facility.

The central equipment skid will house 2 master recombiner/disconnect cabinets where the combiner box outputs are brought together for single feeds into 2 DC-to-AC inverters, also located on the skid. The inverters (Advanced Energy NX-500HE) will be rated for 500 kW_{AC} each, and each serves to change the electric current from the generating array from direct current (DC) to alternating current (AC).

Current is then fed through 2 circuit breaker panels (GE Entelliguard) into a 1,500 kVA 3-phase pad-mounted transformer (ABB Green-R-Pad), which steps the facility output to 3-phase AC power at the appropriate voltage for interconnection with the nearby Xcel distribution circuit. Output from the transformer flows through utility and protective equipment (to be determined by Xcel during interconnection study) before being injected for consumption and sale into the Xcel distribution grid.

The equipment skid also houses a system performance monitoring system (Draker PV Utility), which contains sensors and meters for monitoring DC production, AC production, inverter alarm codes, combiner box current, solar irradiance, module temperature, air temperature, relative humidity, wind speed, and wind direction. A 360-degree camera is also included. The system sends out monitoring data through a high-speed internet connection.

Some project details may be altered during the engineering design process. Different equipment vendors may be selected than those indicated here. DC system sizing may change slightly, based upon equipment selection and physical site layout. Project location and AC system sizing are not expected to change.

Each 1.0 MW_{AC} solar generating facility is expected to produce on average approximately 1,330 kWh per kW of installed capacity or approximately 1,728 MWh per year beginning in year one. Since solar modules degrade over time, each system is expected to produce 0.5% less electricity each year until year 25 of the proposed power sale period. The total generation expected in year one for all 20 Solar Projects is 34,560 MWh. The energy production estimated in this proposal is based off the use of Typical Meteorological Year (TMY3) data from various locations throughout southwest and southeast Minnesota. This data is then fed into a solar production modeling software known as PVSyst, which is the professional standard used by solar engineers and developers around the world. Various factors were taken into account when forecasting the energy production including soiling, snow cover, transformer losses, temperature (heat) losses, ohmic wiring losses, inverter losses and module mismatch losses.

2.1.2. EP Detailed Project Overview

The major equipment manufacturers and technology proposed to be used for each of the 20 Solar Projects is provided in detail within Section 2.1.1. of this proposal. While the equipment vendors are subject to change, the equipment was selected for the Go Solar Projects because the technology is proven, financeable and has been used by the Go Solar team in other operating projects. There are no market barriers for any of the proposed equipment. Each vendor has financeable warranties and the solar modules have a proven track record of performance. Go Solar's team has financed over 12.3 MW_{DC} of the same equipment configuration throughout the U.S., and is currently in various stages of permitting and construction for approximately another 25 MW_{DC} of projects using the same equipment.

The sites selected for each of the Go Solar Projects was based on the following parameters:

1) Within Xcel's service territory
2) Proximity to adequate electric load
3) Proximity to an Xcel substation
4) Locations with land prices that are inexpensive enough to support solar
5) Flat terrain

6) Minimal environmental impacts
7) Adjacent to 3-phase distribution circuits capable of handling a 1 MW_{AC} interconnection

Using GIS data, Go Solar selected 20 parcels to support the Go Solar Projects, identified in Figure 1 below and shown in more detail in Appendix E. Given the uncertainty of the ability to interconnect at these locations until an actual interconnection application is submitted and reviewed, if awarded the requested grant, Go Solar would consult with Xcel Energy to assist in locating alternate circuits that would be suitable for interconnection if the selected interconnection points are not suitable to support the negative load by the proposed solar project.

Figure 1. Project Locations

The map above identifies the Go Solar project locations to support each of the Go Solar Projects (see Appendix E for more detail). Each of these sites contains all 7 of the site selection criteria identified in this section. The sites selected are located in or near the following cities:

1) Granite Falls
2) Annandale
3) Mankato
4) Tracy
5) Pipestone
6) Clara City
7) Gibson
8) Franklin
9) Morgan
10) Montevideo
11) Eagle Lake
12) Fairbault
13) Cannon Falls
14) Zumbrota
15) Mazeppa
16) Wabesha
17) Lonsdale
18) Morristown
19) Northfield
20) Pine Island

2.1.3. EP Project Development Details

Ownership and Development Structure

The 20 Solar Projects being proposed would be developed and operated by Go Solar. Go Solar affiliates would self-fund the construction financing for the development and construction of the Go Solar Projects (just as was done with the Slayton Solar project). Upon award of a successful grant from the RDF, Go Solar's affiliate would acquire land in fee to support each Go Solar Project and that affiliate would lease back the land, further reducing the upfront costs for each Go Solar Project and allowing Go Solar to achieve an all-in cost of $\$2.20/watt_{DC}$.

Aside from being awarded the requested grant from the RDF, development of the proposed Go Solar Projects would be dependent upon 1) successful negotiations of a power purchase agreement with Xcel Energy, and 2) successful interconnection applications and system impact studies for each project.

Required Permits

In addition to the above referenced agreements, the Go Solar Projects would also require successful permitting with the local and state permitting authorities. Go Solar's team obtained permits for Minnesota's largest solar project, Slayton Solar, so it is familiar with the permitting process for solar projects in the State of Minnesota. Although each county and/or municipality will have unique permitting processes, Go Solar expects to require the following permits or approvals for each Solar Project:

- Zoning/use permits: Local county or municipality
- Site plan approval: Local county or municipality
- Wetland determination: Local county or municipality
- DNR Approval: Minnesota DNR
- Natural Heritage Data Search: Minnesota DNR
- Zoning certificate: Local county or municipality
- Driveway permit: Local county or municipality
- Construction permit: Local county or municipality
- Electrical permit: Local county or municipality and the State of Minnesota
- Erosion control permit: Local county or municipality

Since each of the Solar Projects will be under 5 MW DC, none of the projects will require site permits from the State of Minnesota.

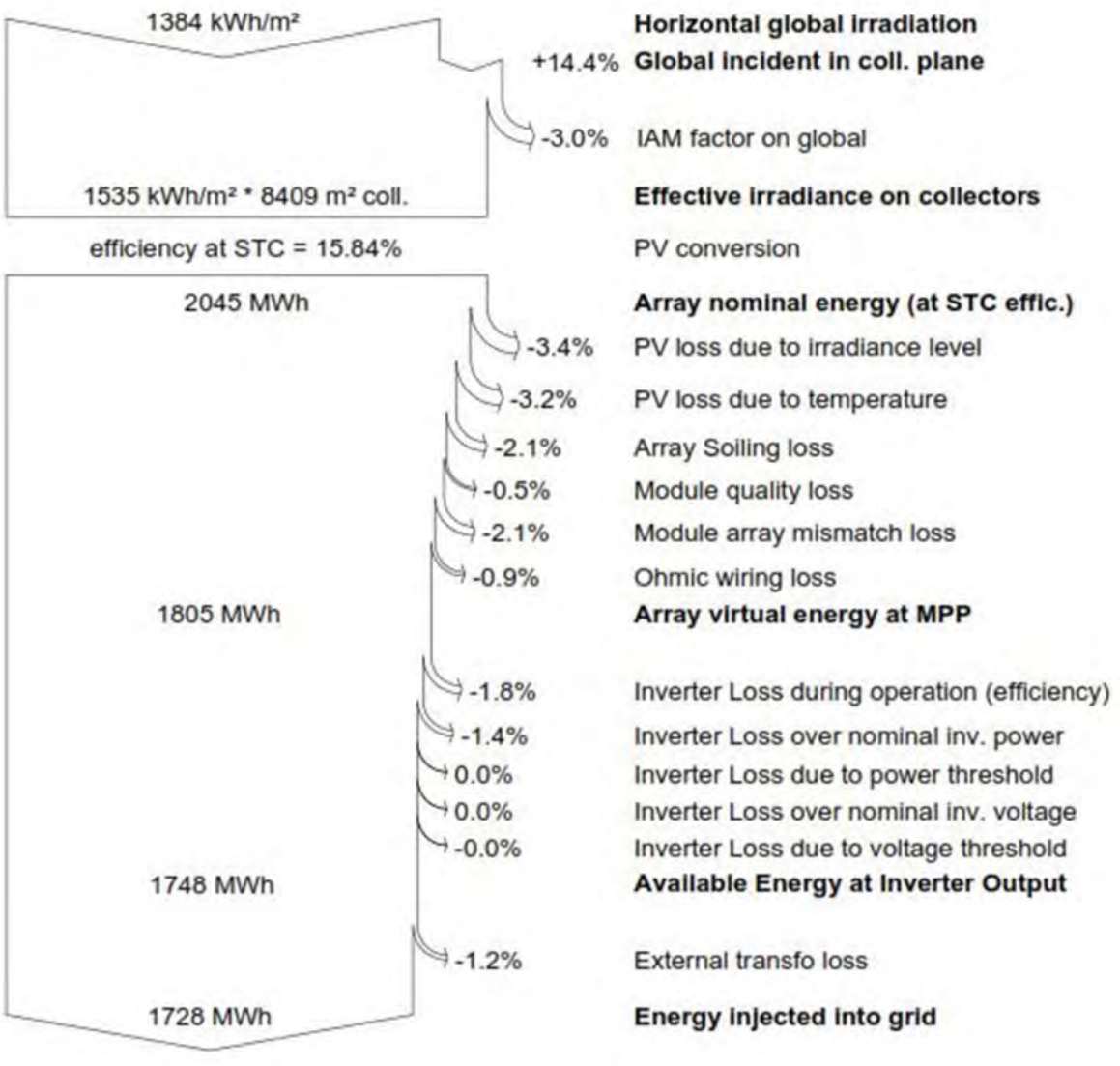
Energy Resource Assessment

The fuel supply for each of the Go Solar Projects will be solar radiation from the sun. Since solar resources are intermittent and unpredictable, historic data needs to be analyzed with an energy production software program in order to estimate the average annual energy production from the solar facility. The solar industry and financial institutions have widely accepted the use of the solar energy forecasting software known as PVSyst. PVSyst allows users to import Typical Meteorological Year (TMY3) data sets from the National Renewable Energy Laboratory (NREL) and set various inputs (i.e. equipment models, loss inputs, etc.) to determine the estimated production at any given location. TMY3s are data sets of hourly values of solar radiation and meteorological elements for a 1-year period, which is based on average actual measurements over a period from 1991 to 2005. Their intended use is for computer

simulations of solar energy conversion systems to facilitate performance comparisons of different system types, configurations and locations in the United States.

To forecast the energy production for each of the 20 Solar Projects, Go Solar used PVSyst and TMY3 datasets from various parts of southern Minnesota. A number of variables were taken into consideration in the model including the specific equipment manufacturers (i.e. Trina 300W modules and Advanced Energy 500 kW inverters) as well as various loss factors such as soiling, snow cover, transformer losses, temperature (heat) losses, ohmic wiring losses, inverter losses and module mismatch losses. The resulting production for a 1.0 MW_{AC} Solar Project can be found in Figure 2 below.

Figure 2. Forecasted Energy Production – 1.0 MW_{AC} Solar Project



Although energy production is expected to vary from one Solar Project to another because of their varying geographic locations, 1,728 MWh of electric generation per year is an indicative value that can

represent the average production that can be expected from the 20 MW_{AC} project portfolio throughout southwest and southeast Minnesota.

Financing Plan

As previously stated, Go Solar is capable of providing its own construction financing for each of the 20 proposed Solar Projects through its affiliate, Allco Finance Limited ("Allco"). Allco provided the development and construction financing for the Slayton Solar project and the other projects in the 12.3 MW_{DC} of distributed generation solar developed by the Go Solar team in the Midwest in 2012.

Interconnection/Delivery Summary

Go Solar has not yet commenced any interconnection studies for any of the proposed Go Solar Projects. The Go Solar team has successfully obtained interconnection agreements for similar sized utility scale solar projects with Xcel Energy, National Grid, Northern Indiana Public Service Company, Indianapolis Power and Light, Southern California Edison and Pacific Gas & Electric. Given the vast experience of Go Solar's team in interconnection solar to distribution systems, Go Solar understands the utility and site selection requirements associated with interconnection distributed generation projects. Upon a successful selection of the requested RDF grant, Go Solar will immediately commence interconnection studies for each of the Go Solar Project sites. Based on our experience with interconnection to Xcel Energy's distribution system, we expect the interconnection studies to take approximately 6 months to complete.

2.1.4. Electric Generation

In Section 2.1.2 above, we discussed the approach that was taken to forecast the energy production for each of the 20 proposed Solar Projects. The average energy production was based on solar radiation levels at the 20 different sites selected to support the Solar Projects as identified in Section 2.1.2. The estimated total energy produced from one – 1.0 MW_{AC} Solar Project is 1,728 MWh_{AC} per year and the total aggregate of expected production across all 20 projects is 34,560 MWh_{AC} per year. The annual production is expected to decline by 0.5% during the 25 year production period due to solar module degradation. The total annual production (AC) expected to be generated by the proposed Solar Projects is as follows:

- Estimated annual production (MWh_{AC}) from 1 – 1.0 MW_{AC} Solar Projects: 1,728 MWh_{AC}
- Estimated annual production (MWh_{AC}) from 20 – 1.0 MW_{AC} Solar Projects: 34,546 MWh_{AC}
- Estimated 15 year production (MWh_{AC}) from 20 – 1.0 MW_{AC} Solar Projects: 375,465MWh_{AC}[3]
- Estimated 25 year production (MWh_{AC}) from 20 – 1.0 MW_{AC} Solar Projects: 1,027,825 MWh_{AC}[4]

The monthly average production of one – 1.0 MW_{AC} Solar Project is shown below in Figure 3. And the total combined monthly production for all 20 Solar Projects (20 MW_{AC}) is shown below in Figure 4.

[3] The production over the 15 year period includes annual module degradation losses of 0.5% per year
[4] The production over the 25 year period includes annual module degradation losses of 0.5% per year

Figure 3. Estimated Monthly Energy Production (1 – 1.0 MW_{AC} Solar Project)

	GlobHor kWh/m²	T Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray MWh	E_Grid MWh	EffArrR %	EffSysR %
January	32.5	-10.11	47.7	46.0	59.4	56.8	14.79	14.15
February	70.5	-2.74	111.4	108.2	129.7	125.7	13.86	13.43
March	99.4	-3.45	125.4	121.6	149.2	144.7	14.14	13.71
April	130.7	7.17	141.1	137.1	154.1	149.4	12.99	12.59
May	155.9	14.62	150.0	144.9	165.5	160.7	13.13	12.74
June	183.9	19.63	172.0	166.3	188.7	183.4	13.05	12.68
July	208.0	22.63	199.2	192.7	214.2	208.2	12.79	12.43
August	185.0	21.29	193.8	187.9	209.6	203.8	12.86	12.50
September	143.9	18.16	176.1	171.5	192.9	187.6	13.03	12.67
October	82.4	7.75	114.2	111.3	132.4	128.3	13.78	13.35
November	56.4	-0.25	95.7	93.2	115.9	112.3	14.41	13.96
December	35.2	-5.90	56.2	54.5	69.6	66.9	14.72	14.15
Year	1383.7	7.44	1582.8	1535.1	1781.3	1727.6	13.38	12.98

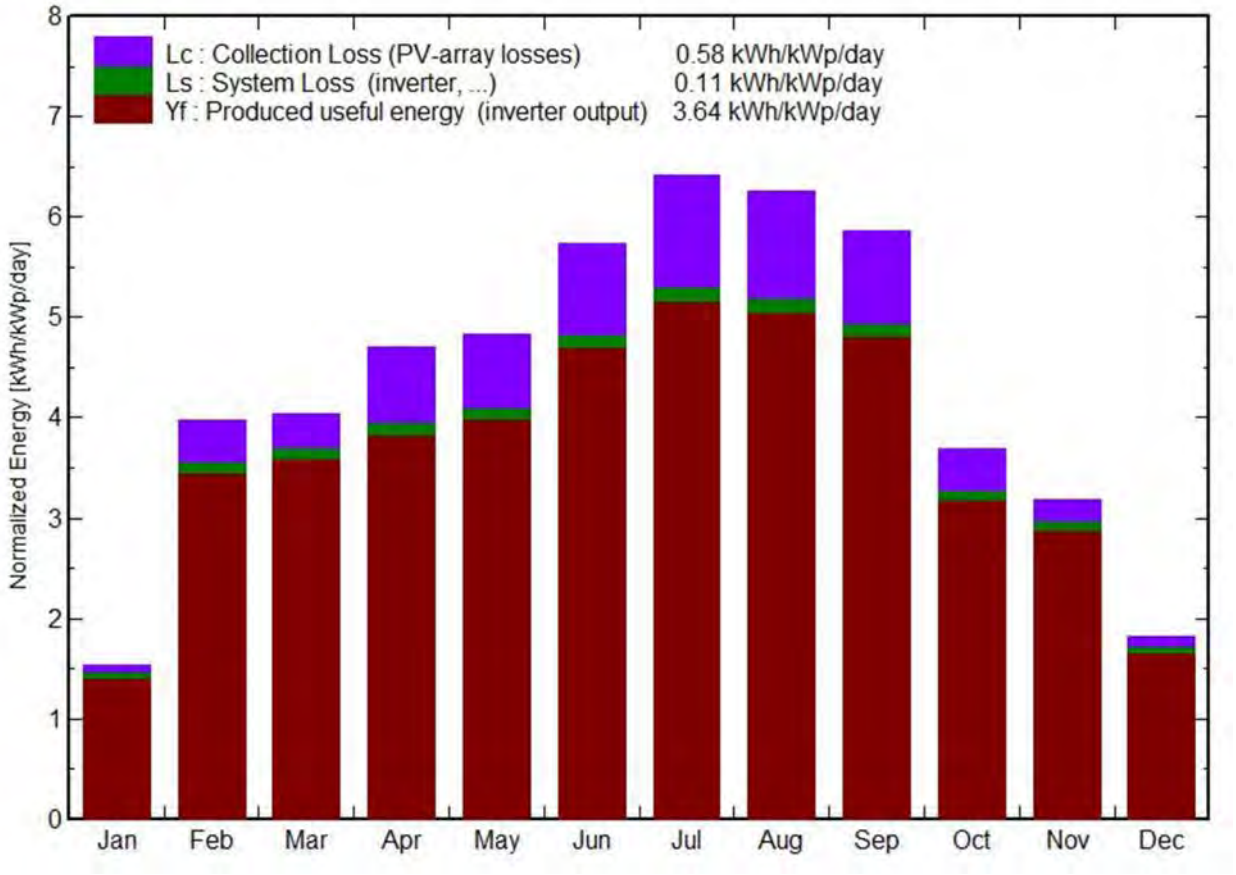
Legends:			
GlobHor	Horizontal global irradiation	EArray	Effective energy at the output of the array
T Amb	Ambient Temperature	E_Grid	Energy injected into grid
GlobInc	Global incident in coll. plane	EffArrR	Effic. Eout array / rough area
GlobEff	Effective Global, corr. for IAM and shadings	EffSysR	Effic. Eout system / rough area

Figure 3. Estimated Monthly Energy Production (20 – 1.0 MW_{AC} Solar Project)

	GlobHor kWh/m²	T Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray MWh	E_Grid MWh	EffArrR %	EffSysR %
January	32.5	-10.11	47.7	46.0	1187	1136	14.79	14.15
February	70.5	-2.74	111.4	108.2	2595	2514	13.86	13.43
March	99.4	-3.45	125.4	121.6	2983	2893	14.14	13.72
April	130.7	7.17	141.1	137.1	3082	2987	12.99	12.59
May	155.9	14.62	150.0	144.9	3310	3213	13.13	12.74
June	183.9	19.63	172.0	166.3	3773	3667	13.05	12.68
July	208.0	22.63	199.2	192.7	4283	4163	12.79	12.43
August	185.0	21.29	193.8	187.9	4191	4075	12.86	12.50
September	143.9	18.16	176.1	171.5	3858	3751	13.03	12.67
October	82.4	7.75	114.2	111.3	2647	2565	13.78	13.35
November	56.4	-0.25	95.7	93.2	2318	2245	14.41	13.96
December	35.2	-5.90	56.2	54.5	1392	1337	14.72	14.15
Year	1383.7	7.44	1582.8	1535.1	35619	34546	13.38	12.98

The expected normalized production (per installed kWp) per day by month, including collection and system losses is shown in Figure 4.

Figure 4. Normalized productions (per installed kWp): Nominal power 20,000 kWp(AC)



Using the data generated by the PVSyst production modeling software presented above, we are able to estimate what the total energy production will be during on-peak and off-peak hours. Xcel Energy defines the on-peak hours as those hours between 9:00 a.m. and 7:00 p.m. Monday through Friday, excepting those holidays listed in the RDF Request for Proposals. The PVSyst software program is capable of generating a 24 (hour) x 365 (days) energy profile. From this profile we then calculated the energy production to be generated during on-peak and off-peak hours as follows:

- Annual On-Peak Generation (1.0 MW_{AC}): 1,157.8 MWh_{AC}
- Annual Off-Peak Generation (1.0 MW_{AC}): 570.2 MWh_{AC}
- Total Generation (1.0 MW_{AC}): 1,728 MWh_{AC}

- Annual On-Peak Generation (20.0 MW_{AC}): 23,147.7 MWh_{AC}
- Annual Off-Peak Generation (20.0 MW_{AC}): 11,398.3 MWh_{AC}
- Total Generation (20.0 MW_{AC}): 34,564.0 MWh_{AC}

Approximately 67% of the Solar Project's total generation will occur during on-peak hours and 33% will be during off-peak hours. The Solar Projects will be mainly limited in production during cloudy days, night time hours and at times when snow is covering the solar modules.

As requested by the RDF request for proposals and since the proposed facilities have an installed capacity greater than 100 kW_{AC}, below are the five power production characteristics for the electricity generated by the Solar Projects:

1. Estimated Annual Energy Production (20 MW_{AC}): 34,564.0 MWh_{AC}
2. Expected Accredited Capacity (20,000 kW_{AC}): 9,681 kW[5]
3. Installed Cost/kW: $2,200.00
4. Energy Production On-Peak: 67%
5. Energy Production Off-Peak: 33%

The Go Solar Projects are zero emission facilities and will not generate any emissions nor will they generate any wastewater. The solar modules for each of the Solar Projects will require annual washings in order to remove dust and sediment that can build up over time and reduce production. Each washing for a 1.0 MW_{AC} project will use approximately 1,350 gallons of water or approximately 27,000 gallons per year for all 20 Solar Projects.

2.2. Project Team and Organization

Minnesota Go Solar, LLC is directly affiliated with Renovo Renewable Energy, LLC ("Renovo") and Ecos Energy, LLC ("Ecos Energy"). Renovo wholly owns Ecos Energy, which developed Minnesota's largest solar energy generating facility, a 2.0 MW_{DC} solar PV generating facility in Slayton, Minnesota (Slayton Solar) in partnership with Xcel Energy (the power purchaser) and was also awarded a $2 million grant by the Xcel Renewable Development Fund. It became commercially operational on January 7, 2013.

Go Solar Project Development Team

If awarded the requested grant funding, the Go Solar Project Team will be the same team that developed Slayton Solar. In 2012 alone, that Minnesota based team developed eight (8) solar PV generating facilities throughout the Midwest, totaling over 12.3 MW_{DC}.

In addition to those commercially operational solar PV projects, the project team currently has a development pipeline throughout the country (with executed PPAs) for over 30 MWs of solar PV projects.

Members of Go Solar project team include the following members from Ecos Energy's development team:

Chris Little, Director of Development

Chris Little joined Ecos Energy LLC in March of 2008. As Director of Development for Ecos Energy's distributed generation photovoltaic (PV) solar projects, Chris's responsibilities include project land acquisition, risk management, contract administration, permitting and financing. Chris plays in integral role in overseeing Ecos Energy's development of distributed generation solar projects in the Midwest, the West Coast and the East Coast. He has experience working with distributed generation solar projects with numerous utilities throughout the U.S. Chris was responsible for acquiring the land and overseeing the development and construction of 12.3 MW DC of solar PV installations in 2012.

[5] The accredited capacity was calculated based on the average production of the Solar Projects during a given hour on weekdays in July from the hours of 3:00pm to 7:00pm.

Prior to joining Ecos Energy, Chris worked as a Land Acquisition Manager for Ryland Homes as well as spending 6 years working developing utility related projects for We Energies, a Wisconsin based utility. Chris received his Bachelor of Business Administration in Real Estate and Urban Land Economics from the University of Wisconsin-Madison.

Tim Young, Vice President, Project Development

Tim joined the Ecos Energy team in March 2008 after 6 years as President, Sierra Capital Services, a financial services company focused primarily on arranging financing for renewable energy projects. Prior to that, Tim was involved in international shipping for over 20 years as Chief Financial Officer and ship-owner. He spent 13 years as Chief Financial Officer for the Marine Chartering Group of Companies in San Francisco. The group owned and operated a fleet of containerships, breakbulk carriers, chemical tankers and refrigerated ships throughout Europe, Asia and the Americas. Tim managed the group's chemical tanker business, with ships trading throughout Asia, and containership business, with ships operating throughout Central America and the Caribbean. Prior to that, Tim was CFO and management consultant for a number of startup companies in the San Francisco Bay Area. Tim started his career at American President Companies in Oakland, CA.

Tim is responsible for managing development of the project team's project pipeline of solar projects throughout the United States. In addition, Tim manages and oversees the interconnection application and study process for all of Ecos Energy's solar PV projects. Tim also is responsible for obtaining power purchase agreements to sell power from Ecos Energy's solar PV projects.

Tim received his BS, Business Administration from the University of California, Berkeley and his MBA, Finance and International Business from the Haas School of Business, University of California, Berkeley.

Brad Wilson, Senior Project Manager

Brad has been a Senior Project Manager for Ecos Energy since 2010. He is responsible for day to day project management of the company's solar projects during construction. Brad is also responsible for all equipment procurement for Ecos Energy's solar projects including scheduling and logistics. In 2012, Brad acquired the solar modules, racking equipment, inverters, AC switchgear, equipment skids, monitoring equipment and piers for eight solar PV projects totaling over 12.3 MW_{DC}.

Brad earned his Bachelor of Science degree in Corporate Environmental Management from the University of Minnesota.

Steve Broyer, Civil Engineer

Steve Broyer joined the Ecos Energy team on April 1, 2013. Steve comes to Ecos from Westwood Professional Services where Steve was responsible for managing the preparation of civil and electrical documents for Westwood's wind and solar clients around the country.

At Ecos, Steve will be responsible for preparation of civil engineering design drawings for all of Ecos Energy's solar PV projects, including grading, storm water and erosion control and site plan design.

Steve earned a Bachelor of Science in Civil Engineering from the University of Minnesota – Civil Engineering.

Blake Nicholson, Project Analyst

Blake has been Project Analyst for Ecos Energy since 2009. As Project Analyst, Blake engages in development and permitting activities for the group's solar and wind projects throughout the country.

Blake received his BA in Economics from Carleton College with a minor in Environmental and Technology Studies.

Project Finance Team: Allco Renewable Energy Limited

Allco is a New York-based renewable energy company with investment banking, project development and community development capabilities, providing investment to and arranging financing for renewable energy companies and projects across the United States. Allco group companies have provided or arranged investment and financing for assets, projects and companies in the aviation, rail, high technology, water/wastewater, film and energy sectors. Allco's primary focus is now in the renewable energy sector.

ALLCO's professionals have extensive past experience with the financing of assets in the energy sector, including:

- Approximately $1.4 billion Mount Piper power station in New South Wales, Australia.
- $450 million coal-fired power plant for Old Dominion Electric Cooperative.
- Power generation facility for Oglethorpe Power Corporation.
- Sale/leaseback financing of State of New South Wales, Australia, electricity transmission facilities.
- $110 million undivided interest in an electric generating facility for Kansas Power & Light.
- Waste-to-energy facility in Bay County, Florida.

Allco's executives are described below:

Thomas M. Melone, President and Chief Executive Officer

Tom joined Allco in 1994 from the law firm of Hunton & Williams where he was a tax partner. In 1995, Tom led Allco to a pre-eminent position in the large asset finance market. Since 1994 Tom has been involved in every one of the transactions arranged by Allco. Prior to joining Hunton & Williams in 1991, Tom was Director, European Leasing for Chase Investment Bank in London. Prior to joining Chase in 1989, Tom practiced law at Cravath, Swaine & Moore (from 1982) and specialized in leveraged leasing and project finance. From 1978 to 1982, Tom served as a Revenue Agent with the US Internal Revenue Service, where he was the project coordinator for DISCs (Domestic International Sales Corporations), which were the predecessor to FSCs (Foreign Sales Corporations).

Tom was the founding benefactor of the Jacqueline Kennedy Onassis School of Ballet at American Ballet Theatre in New York, and a founder of the Vineyard Arts Project, an incubator for the creation of new work in dance and theatre on Martha's Vineyard, Massachusetts. Tom currently sits on the Board of Advisors of the Institute for Policy Integrity at New York University School of Law. Tom is a 1979 graduate of Fairleigh Dickinson University (BS magna cum laude in accounting and business management) and received his JD with high honors from Rutgers Law School - Newark in 1983. Tom also received a Master of Laws (LLM in taxation) from New York University School of Law in 1989 and his CPA certificate in 1980.

2.3 Final Project Reporting

Prior to the award of grant and after construction of the Solar Projects, Go Solar will provide the RDF with a detailed Final Milestone Report detailing the project's benefits and costs including, but not limited to the following benchmarks:

- Final cost breakdown of each 1.0 MW_{AC} solar PV project
- The return on investment with and without the award of grant (which mimics an SREC incentive)
- A detailed summary of the terms of an economically viable solar renewable energy credit (SREC) program that would be sustainable in the State of Minnesota
- The number of jobs created by the Go Solar Projects
- The economic return to the State of Minnesota

SECTION 3 – PROJECT BENEFITS

3.1 Economics

3.1.1. Cost Effectiveness Relative to Alternatives

Solar has historically been viewed as one of the more expensive forms of electrical generation, however, over the past two years, solar module and ancillary equipment pricing has declined. Furthermore, solar PV technology has continued to improve and solar modules are now capable of producing more power over the same amount of surface area than they were previously capable of producing only a few years back. The higher efficiency of a solar module allows a solar project to be developed with less racking (steel and aluminum), less land and less wiring, thus lowering the overall installed cost of solar.

Utilizing a production incentive in the form of a lump sum grant, Go Solar is proposing to sell power generated from the 20 Solar Projects at Xcel Energy's avoided cost (See Section 4.3). Avoided cost is the highest marginal benefit that a public utility realizes from the interconnection of a renewable energy facility. MISO provides an estimate of the avoided energy and capacity costs for utilities, which was used in the Slayton Solar final RDF report. Because Go Solar is proposing to sell power generated by the Go Solar Projects at those long-term projectd avoided costs, the proposed Go Solar projects are competitive to other forms of generation.

3.1.2. Potential Market Size

Solar PV technology utilizes the sun's radiation as a source of fuel. This fuel source is abundant and unlimited during our lifetime. The potential market size is thus not limited by availability of fuel, but rather by demand, the cost of energy, distribution infrastructure availability and land availability. In 2012, the State of Minnesota ranked 4th in the U.S. in generating capacity, cable of producing 4,743 GWh annually[6]. Currently the State of Minnesota is considering a 10% solar mandate, which would require the State of Minnesota to produce 474.3 GWh annually (as of 2012). In the State of Minnesota, MGS has calculated the net capacity of solar to be approximately 15.5% based on the direct current nameplate capacity. This means that in order to produce 474.3 GWh of electricity, the State of Minnesota would need to install solar energy projects totaling over 356 MW_{DC} of nameplate capacity. The State of

[6] U.S. Energy Information Administration, Independent Statistics and Analysis – Minnesota State Profile

Minnesota's current solar generating capacity is 12.9 MW_{DC}[7]. In order to achieve a 10% solar mandate, the State of Minnesota would need to install 343.1 MW_{DC} of additional solar capacity over the coming years.

A net metering program, as being proposed by Minnesota State Legislature, would limit solar installations primarily to rooftops because the owner of the solar generating facility must consume the majority of the power being produced. To put this in perspective, to support a 1.0 MW_{AC} solar generating facility, a rooftop of 100,000 square feet would be required. Not only would one require a large enough rooftop to support the solar project, but the owner of the system would need to consume the majority of the electricity being generated. This would most likely limit large (1.0 MW or larger) installations to very large manufacturing buildings that are consuming large amounts of power. This type of program would not generate enough participation to sustain the growth of the solar PV generating capacity in Minnesota to achieve 10% of solar production any time in the near future.

The combination of (i) a long-term 25-year power purchase agreement at a utility's project avoided cost, and (ii) a fixed production incentive (i.e. SRECs) over a specified term would remove the barriers and limitations to solar installations and allow solar to be constructed on ground mounted installations anywhere in the State of Minnesota (allowable by local jurisdictions). Furthermore, the owner of the solar generating facility would not be required to consume any of the electricity being generated under an SREC program. Achieving 10% solar generating capacity utilizing a production incentive program, such as an SREC program, is sustainable and would provide the State of Minnesota with a much more promising outlook of achieving a 10% solar generating capacity with our without a state mandate.

3.1.3. Other Benefits

In addition to job creation and direct economic benefits to the State of Minnesota, the proposed Go Solar Projects would provide avoided transmission benefits to Xcel Energy and its rate payers. Since the Go Solar Projects being proposed would deliver power through Xcel's electric distribution system, thus bypassing the transmission infrastructure. This provides Xcel with a capital cost savings on upgrading and constructing new transmission infrastructure. A study performed by Clean Power Research [8]views this benefit as not displacing the need for capital investments in transmission infrastructure, but deferring the need for these capital improvements. Clean power Research values this benefit at $1 to $6 per MWh_{AC}. The value of this avoided cost was included in the avoided cost PPA rate that is being proposed.

In addition to avoided transmission costs, the Go Solar Projects will also provide economic benefits as outlined in Section 3.2, as well as cost savings from economies of scale realized by producing 20 projects together.

3.1.4. Jobs and Taxes

To help quantify the local economic benefit (impact) of a state wide policy or scenario, such as a solar "carve-out" policy, the National Renewable Energy Laboratory (NREL) created the Jobs and Economic

[7] Source: Minnesota Department of Commerce

[8] Richard Perez, Benjamin L. Norris and Thomas E. Hoff,, Clean Power Research, The Value of Distributed Generation to New Jersey and Pennsylvania, (November 2012)

Development Impact Model (JEDI).[9] JEDI was developed to demonstrate the economic benefits associated with photovoltaic systems at the state and local levels. The economic impacts/benefits include project development and onsite labor impacts as well as solar module and supply chain impacts.

The JEDI model (release number PVS 12.13.12) estimates the total cumulative job years created by the 20 Solar Projects to be 745 job years. Furthermore, the JEDI model forecasts the expected local economic impacts from the construction of the Go Solar Projects to total over $99.7 million. This benefit includes construction and installation labor and related services and module and supply chain impacts, including trade, finance, insurance and real estate, professional services and other ancillary services.

If the State of Minnesota were to implement a fixed SREC program with a fixed long-term PPA equal to that of 10% of Minnesota's generating capacity (343 MW – net of currently installed generation) as outlined in Section 3.1.2., the JEDI model forecasts that a program of this structure would create 12,644 job years and local economic benefits totaling more than $1.664 billion.

Solar energy generation is currently exempt from sales and property tax in the State of Minnesota.

3.1.3. Energy Pricing and Innovative Incentives

Go Solar is proposing to construct 20 – 1.0MW_{AC} Solar Projects and sell the energy generated through a power purchase agreement with Xcel Energy at avoided cost (see Section 4.3 for details on the proposed pricing). In addition to the revenue generated through the avoided costs, Go Solar is proposing to utilize a production incentive in the form of a grant from the RDF. This grant (which is calculated as a lump-sum on a present value basis) would mimic an SREC program and would be equal to an incentive of $22 per MWh_{AC} generated by each of the Solar Projects.

Although an SREC program is not an innovative approach in the United States, it would be the first of its kind in Minnesota.

3.2. Environmental

Each of the Go Solar Projects being proposed are zero emission generating facilities. For each kWh generated by the Go Solar Projects, one less kWh will be required from a fossil fuel generating facility, thus offsetting any carbon or other emissions generated from fossil fuel generation. The 20 Go Solar Projects are expected to generate 34,564 MWh_{AC} of electricity in aggregate per year. The expected carbon emission reductions are (1) 28,139.32 tons/year of carbon dioxide (CO_2), 982.17 lbs/year of methane (CH_4), 449,332 lbs/year or sulfur dioxide (SO_2) (coal only) and 962.40 lbs/year of nitrous oxide (N_2O). [10] The environmental value of the carbon offset of the 20 Go Solar Projects calculated for purposes of this proposal are based upon Minnesota Public Utilities Commission rural environmental externality values as noted in Dockets CI-93-583 and CI-00-1636. Using those values and using a 3% inflation factor, the benefit of the Go Solar Projects is estimated to be $2,314,512 over the first 15 years and $4,536,669 over the proposed 25 year PPA period.

[9] National Renewable Energy Laboratory, Jobs and Economic Development Impact Models: http://www.nrel.gov/analysis/jedi/

[10] United States Environmental Protection Agency, eGrid2012 Version 1.0 Year 2009, GHG Annual Output Emission Rates, www.epa.gov/egrid

Another benefit is the benefit solar brings to Minnesota's GHG emission compliance. Minnesota is one of a few states that have adopted statewide laws to limit greenhouse gas emissions.[11] In its January 2013 Biennial Report to the Minnesota Legislature, the Minnesota Department of Commerce confirmed that the 2015 GHG reduction target of 15% will not be reached. While GHG emissions were reported to have declined an overall 3% between 2005 and 2010, the Biennial Report notes that the drop was due primarily to the economic recession[12]. Now that the recession is hopefully over, the Biennial Report acknowledges that GHG emissions are back on the rise.

The Biennial Report notes that the electric utility sector had achieved a 13% reduction in 2010 from 2005 levels. However, the electric utility sector is the easiest sector for the State of Minnesota to regulate in terms of achieving further GHG reductions. The other sectors noted in the report—agriculture, industrial, residential, commercial and waste—are more difficult to regulate because, among other reasons, the diverse number of persons that would need to be regulated. Electric utilities, however, provide a central point whose reductions would then have a positive effect on the other sectors. Regulation of those other sectors might also result in a constraint on economic activity, whereas the wide deployment of solar in Minnesota would stimulate economic activity in a big way.

Massachusetts is one of the other states that has adopted GHG targets. It was recently noted by the Massachusetts Department of Public Utilities ("MDPU") that the cost of achieving the GHG targets will far exceed the cost of fulfilling renewable portfolio standards. The MDPU stated that in their view the electricity sector must play a proportionately larger role in reducing GHG emissions than other sectors because the electricity sector has the opportunity to reduce emissions at lower cost than other sectors.[13]

Solar is also the only renewable resource that will continue to provide GHG and other environmental benefits for the next 45-60 years. [14]

3.3. Xcel Energy Electric Ratepayers

The proposed Go Solar Projects will provide benefits to the State of Minnesota and the ratepayers in the form of environmental and economic benefits. Go Solar is proposing to sell the power to Xcel Energy at projected long-term avoided costs, so the ratepayers should not experience a rate increase as the result of Xcel Energy entering into a 25-year PPA with Go Solar. On the other hand, the environmental benefits, as outlined above in Section 3.2. are estimated to be over $4.5 million over the proposed 25 year PPA period. Furthermore the Go Solar Projects to create a framework for an SREC program that could expand Minnesota's generating capacity on a large scale at a limited cost. The expansion of Minnesota's solar generation capacity would create a significant amount of jobs and economic benefits to the State of Minnesota, as outlined in more detail in Section 3.1.4 above.

[11] See, Minn. Stat. 216H.02.
[12] See Biennial Report, p.4.
[13] See, MDPU Docket 12-30, Final Order (November 26, 2012) at p.104.
[14] Wohlgemuth, J.H., Cunningham, D.W., Nguyen, A.M., Miller, J. BP Solar International. *Long Term Reliability of PV Modules,* 2005.

3.4. Other Benefits

In addition to the economic and environmental benefits outlined in this Section 3, the proposed projects are expected to bring an intangible political benefit to the State of Minnesota. As discussed throughout this proposal, legislation promoting solar is instrumental in promoting the growth of Minnesota's solar generating capacity. With only 13 MWs of solar generation in Minnesota, much of which was installed years ago using antiquated technology, Minnesota legislators do not have a concrete set of data points (generation data, cost data, production incentive values) to assist them in drafting legislation that will promote solar effectively in Minnesota. By constructing 20 solar projects in various parts of the State of Minnesota and providing a transparent look at the economics of these projects, the state legislature will have unprecedented access and visibility into the true cost to generate a kWh of solar electricity in Minnesota in numerous locations. This type of information will be valuable in creating legislation based on facts and real costs, rather than projections and estimates.

SECTION 4 – USE OF PROJECT FUNDS

4.1. Project Budget

The Go Solar Projects (20) have a projected combined budget of $2.20/watt (DC) of nameplate capacity or $57.2 million. This budget covers all of the necessary equipment and overhead to develop and construct all 20 Solar Projects. A complete breakdown of the project costs can be found on Appendix B and Section 4.3. of this proposal.

4.2. Project Cost Narrative

Go Solar is requesting a $7,439,000 lump-sum grant from the RDF, paid at the completion of the projects, to subsidize the cost of the Go Solar Projects. This represents 13% of the total project costs ($57.2 million) or $0.28 per MW_{DC} of nameplate capacity. The grant amount was calculated based on an assumed production incentive of $22 per MWh_{AC} generated by the Go Solar Projects over 20 years, discounted at a rate of 7.56%. Figure 5 below illustrates how the requested grant amount was calculated.

Figure 5. Production Incentive/Grant Calculation

	A	B	C (A x B)	D	E (C x D)
Year	**Rated Output (MWh_{AC})**	**Degradation**	**Production MWh_{AC} - Post Degradation**	**Production Incentive ($/$MWh_{AC}$)**	**Total Annual Incentive ($)**
1	34,560	100%	34,560	$22	$760,320
2	34,560	99.50%	34,387	$22	$756,518
3	34,560	99.00%	34,214	$22	$752,717
4	34,560	98.50%	34,042	$22	$748,915
5	34,560	98.00%	33,869	$22	$745,114
6	34,560	97.50%	33,696	$22	$741,312

7	34,560	97.00%	33,523	$22	$737,510
8	34,560	96.50%	33,350	$22	$733,709
9	34,560	96.00%	33,178	$22	$729,907
10	34,560	95.50%	33,005	$22	$726,106
11	34,560	95.00%	32,832	$22	$722,304
12	34,560	94.50%	32,659	$22	$718,502
13	34,560	94.00%	32,486	$22	$714,701
14	34,560	93.50%	32,314	$22	$710,899
15	34,560	93.00%	32,141	$22	$707,098
16	34,560	92.50%	31,968	$22	$703,296
17	34,560	92.00%	31,795	$22	$699,494
18	34,560	91.50%	31,622	$22	$695,693
19	34,560	91.00%	31,450	$22	$691,891
20	34,560	90.50%	31,277	$22	$688,090
			NPV of Column "E" Discounted at 7.56%		**$7,439,658**

Allco Finance Limited, an affiliate of Go Solar, will provide construction financing for each of the proposed Go Solar Projects, totaling $57.2 million. Upon receipt of a grant, if awarded, the balance of the Go Solar Project's costs ($49,761,000) will be financed on a long-term basis by using Allco's proprietary solar leveraged lease financing structure, supported by the long-term power purchase agreement with Xcel Energy. The lease financing will be used to lower the financing cost of the Go Solar Projects by providing the federal tax incentives to the third party financier/lessor in exchanged for a reduced lease rate. The Go Solar Projects will be owned for tax purposes by the lessor and leased to Go Solar. Go Solar will make rent payments under the lease to the lessor from funds obtained under its long-term power purchase agreement with Xcel Energy. The 25-year term for the PPA was selected in order to minimize the overall per MWh costs for the projects.

An itemized breakdown of the project costs can be found on the Appendix B and Section 4.3. of this Proposal. The year one expected operating expenses for all 20 Solar Projects are outlined below in Figure 6.

Figure 6. Year One Expected Operating Expenses

Expense	**1.0 MW_{AC}**	**20 MW_{AC}**
Property Tax	$840	$16,800
Insurance - (Phys Damage & BI)	$4,869	$97,380
Insurance - (General Liability)	$2,500	$50,000
Land Lease Payment	$3,000	$60,000
Inverter and System O&M	$20,803	$416,064
Security Data & Maintenance	$2,000	$40,000
Total Expenses	**$34,012**	**$680,244**

Property tax and lease payment expenses are expected to escalate by 2% per year. Insurance is expected to remain constant and all other expenses are expected to increase by 3% annually.

4.3. Energy Pricing Narrative

The total expected cost of the 20 – 1.0 MW_{AC} Solar Projects is $57.2 million or $2.704 million per project. A breakdown of these costs can be found

Figure 7. Estimated Project Costs

	Individual Project Cost 1.0 MW (AC)		Aggregate Project Costs 20 MW (AC)	
Major Equipment	**Total Cost**	**Cost/Watt**	**Total Cost**	**Cost/Watt**
Modules	$754,116	$0.58	$15,082,320	$0.58
Racking	$190,739	$0.15	$3,814,787	$0.15
Inverters (500kW)	$230,120	$0.18	$4,602,400	$0.18
500 kW Inverter Warranty (yrs 6-20)	$72,656	$0.06	$1,453,120	$0.06
Transformer & Inverter Skid	$101,500	$0.08	$2,030,000	$0.08
Posts/Foundations	$97,125	$0.07	$1,942,499	$0.07
Monitoring Equipment	$40,000	$0.03	$800,000	$0.03
Security Equipment	$10,000	$0.01	$200,000	$0.01
AC Equipment	$50,000	$0.04	$1,000,000	$0.04
Total Major Equipment Costs	**$1,546,256**	**$1.19**	**$30,925,126**	**$1.19**
Balance of System Costs				
Contract Amount	$910,140	$0.70	$18,202,800	$0.70
Total Balance of System Costs	**$910,140**	**$0.70**	**$18,202,800**	**$0.70**
Other Direct Project Costs				
Developer Overhead	$108,200	$0.08	$2,164,000	$0.08
Engineering	$60,000	$0.05	$1,200,000	$0.05
Permitting Fees/Costs	$10,000	$0.01	$200,000	$0.01
Const. Ob & Contract Administration	$9,400	$0.01	$188,000	$0.01
Performance Verification	$2,200	$0.00	$44,000	$0.00
Interconnection fees	$10,000	$0.01	$200,000	$0.01
Interconnection Costs	$150,000	$0.12	$3,000,000	$0.12
General Liability Insurance	$5,000	$0.00	$100,000	$0.00
Builders Risk Insurance	$2,000	$0.00	$40,000	$0.00
Total Other Direct Project Costs	**$356,800**	**$0.27**	**$7,136,000**	**$0.27**
Summary				
Major Equipment Costs	$1,546,256	$1.19	$30,925,126	$1.19
Balance of System Costs	$910,140	$0.70	$18,202,800	$0.70
Other Direct Project Costs	$356,800	$0.27	$7,136,000	$0.27
Financing Costs	$49,749	$0.04	$994,975	$0.04
Total System Costs	**$2,862,945**	**$2.20**	**$57,258,901**	**$2.20**

The above prices represent a combination of 2013 costs and forecasted costs for the year 2014, which is the year the equipment would be procured for each of the Go Solar Projects. The project costs outlined above are confidential and are based on years of research and experience developing and constructing solar PV projects throughout the U.S.

4.3.1. Energy Pricing

As part of the grant request, Go Solar is proposing to sell 100% of the energy generated by the Solar Projects to Xcel Energy under a 25-year power purchase agreement. Although the production incentive of $22 per MWh, discounted at 7.56%, is only being calculated over 20 years, to achieve the required returns to obtain permanent long-term financing, Go Solar would need a 25-year power purchase agreement for each of the Projects. Go Solar proposes to sell the energy at the avoided costs that were listed in the Slayton Solar final RDF report. The proposed PPA price would mirror the pricing table in Figure 8 below.

Figure 8. Proposed PPA Pricing – 25 Year PPA Period

Period	Year	Avoided Energy Cost per MWh[15]	Avoided Capacity Cost per MWh[16]	Avoided T&D Cost per MWh[17]	Avoided Environmental Costs per MWh[18]	Total Avoided Cost/PPA Price
1	2015	$44.82	$32.07	$5.00	$3.86	$85.75
2	2016	$46.88	$33.19	$5.15	$3.99	$89.22
3	2017	$48.68	$34.36	$5.30	$4.13	$92.48
4	2018	$50.48	$35.56	$5.46	$4.28	$95.78
5	2019	$52.42	$36.80	$5.63	$4.43	$99.28
6	2020	$54.37	$38.09	$5.80	$4.59	$102.84
7	2021	$56.31	$39.43	$5.97	$4.75	$106.45
8	2022	$58.26	$40.81	$6.15	$4.91	$110.13
9	2023	$60.20	$42.23	$6.33	$5.09	$113.85
10	2024	$62.21	$43.71	$6.52	$5.27	$117.71
11	2025	$64.29	$45.24	$6.72	$5.45	$121.70
12	2026	$66.44	$46.82	$6.92	$5.64	$125.83
13	2027	$68.66	$48.46	$7.13	$5.84	$130.09
14	2028	$70.95	$50.16	$7.34	$6.05	$134.50
15	2029	$73.32	$51.92	$7.56	$6.26	$139.06
16	2030	$75.64	$53.73	$7.79	$6.48	$143.64
17	2031	$77.97	$55.61	$8.02	$6.71	$148.31
18	2032	$80.30	$57.56	$8.26	$6.94	$153.07
19	2033	$82.71	$59.57	$8.51	$7.19	$157.98

[15] Based on LMP data provided by Xcel Energy and sourced from the Midwest Independent System Operator: https://www.midwestiso.org/marketsoperations/realtimemarketdata/pages/lmpcontourmap.aspx

[16] Based on LMP data provided by Xcel Energy and sourced from the Midwest Independent System Operator: https://www.midwestiso.org/marketsoperations/realtimemarketdata/pages/lmpcontourmap.aspx

[17] Avoided transmission and distribution costs

[18] Costs based on avoided emissions as calculated in Section 3.2. and based on the costs published by the MPUC.

20	2034	$85.19	$61.66	$8.77	$7.44	$163.06
21	2035	$87.75	$63.82	$9.03	$7.70	$168.30
22	2036	$90.38	$66.05	$9.30	$7.97	$173.70
23	2037	$93.09	$68.36	$9.58	$8.25	$179.29
24	2038	$95.88	$70.76	$9.87	$8.54	$185.05
25	2039	$98.76	$73.23	$10.16	$8.84	$191.00

The grant being requested, in the amount of $7.439 million is an amount equal to the NPV of a $22 per MWh_{AC} production incentive and the amount required for Go Solar to sell the power generated from the Solar Projects at the long-term projected avoided costs. Without the production incentive, the PPA price would need to be $22 per MWh_{AC} higher for the first 20 years.

4.3.2. Innovative Structures

The production incentive being proposed herein is equal to $22 per MWh_{AC} of the combined energy produced by the 20 Go Solar Projects. In order to determine what an equitable lump sum grant amount would be to equal a production incentive of $22 per MWh_{AC} Go Solar used a discount rate of 7.56%. The grant amount calculation can be found in Section 4.2 of this proposal. This production incentive and grant structure will demonstrate how an SREC would impact the returns of a solar generating facility in Minnesota.

This structure is unique in that it provides an accurate per MWh value of the grant amount, whereas the benefit and value of a more traditional lump sum grant is more difficult to determine.

APPENDIX A
RDF GRANT APPLICATION FORM

Grant Application Form
Xcel Energy Renewable Development Fund

Energy Production Project

(All sections of this form must be completed and attached to all Energy Production proposals.)

Applicant Information

Name and Title of Applicant: Minnesota Go Solar, LLC

Mailing Address: 222 S 9th St (Street number and name) Suite 1600 (Suite number)
Minneapolis, MN 55402 (City, state, zip code)

Nature of Business: Renewable Energy Project Development

Contact Person: Chris Little Phone: (651) 268-2053

Email: chris.little@ecosrenewable.com FAX: Same as phone

Project Information

Project Title: Minnesota Go Solar, 20 - 1 MW(ac) Solar PV Projects

Project Site Location: Various Site Locations (20) - see Section 2.1.2. and Appendix C

Technology Type: *check one(s) that apply*

Biomass ☐ Hydro ☐ Solar PV ☒ Solar Thermal-Electric ☐ Wind ☐

Funding Request and Project Cost

Total RDF funding requested: $ 7,439,000 Other funding $_____

Total Project Cost $ 57,200,000

RDF Funds requested by year:

1st Year: $7,439,000 2nd Year: $ 0 3rd Year: $ 0 4th Year: $ 0 5th Year: $ 0

Project Capacity

New Projects - Nameplate Capacity (kW or MW) 20 - 1.0MW(ac) projects; Totaling 20MW(ac)

Refurbishment - Existing Capacity (kW or MW) N/A

Incremental Capacity N/A

Projected Project Duration

Construction Start Date August 2014 Commissioning Date January 2015

Energy Production

Estimated amount of AC energy (kWh or MWh) to be produced annually for each year of operation for up to a 15-year power purchase contract length. For biomass or biofuel projects that use a portion of renewable fuel (i.e., blended fuel), show the total amount of energy generated in the first column and the amount generated by the renewable fuel in the second column.

	Total Energy (kWh)	Renewable Energy (kWh) (fuel blend projects)
2014:	0	
2015:	34,560,000	
2016:	34,387,000	
2017:	34,214,000	
2018:	34,042,000	
2019:	33,869,000	
2020:	33,696,000	
2021:	33,523,000	
2022:	33,350,000	
2023:	33,178,000	
2024:	33,005,000	
2025:	32,832,000	
2026:	32,659,000	
2027:	32,486,000	

2028: 32,314,000 2028:

Please estimate the amount of energy in kWh that will be produced in each month of a typical year. The sum of the monthly estimates should total the annual estimates above.

Jan 56,800 Feb 125,700 Mar 144,700 Apr 149,400 May 160,700 June 183,400

July 208,200 Aug 203,800 Sept 187,600 Oct 128,300 Nov 112,300 Dec 66,900

Please estimate the percent of energy that will be produced on-peak and off-peak on a typical year. The on peak period is defined as those hours between 9:00 a.m. and 9:00 p.m. Monday through Friday, except the following holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. When a designated holiday occurs on Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on Sunday, the following Monday will be designated a holiday. Off Peak is defined as all other hours.

Percent (%) Generated On-Peak 67%

Percent (%) Generated Off-Peak 33%

Energy Pricing Narrative *(please use additional pages as necessary)*

Please see narrative in proposal

Energy Pricing

Annual price schedule ($/kWh or $/MWh in 2013 dollars) for each year of operation for up to a 15-year period.

2014 $ N/A

2015 $ 85.75

2016 $ 89.22

2017 $ 92.48

2018 $ 95.78

2019 $ 99.28

2020 $ 102.84

2021 $ 106.45

2022 $ 110.13

2023 $ 113.85

2024 $ 117.71

2025 $ 121.70

2026 $ 125.83

2027 $ 130.09

2028 $ 139.06

**See Proposal for PPA pricing for years 2029 through 2039. Pricing is contingent upon a 25 year PPA.*

Please indicate the percent of total energy produced that you plan to sell Xcel Energy, and the percent you plan to consume on-site:

Estimated % total energy to be sold to Xcel Energy: 100%

Estimated % to be consumed on-site: 0%

Emission Rates

If the proposed project produces any of the following emissions, please provide emission rates in pounds per kWh at full load.

PM-10 0

NOx 0

CO 0

CO2 0

Pb (lead) 0

Business Type (Renovo Renewable Energy, LLC and Ecos Energy, LLC)

Number of Employees 5 Year Established 2006

How Long Under Current Ownership 7 years

Legal Form or Ownership (check one)

- ☐ Sole Proprietorship
- ☒ Limited Partnership
- ☐ General Partnership
- ☐ Corporation
- ☐ Sub-Chapter S Corporation
- ☐ Other (identify) _____

Project Team

(Name)	(Title)	(Years with Company)
Chris Little	Director of Development	5
Tim Young	Vice President, Project Development	5
Brad Wilson	Senior Project Manager	3
Steve Broyer	Civil Engineer	<1

Standard Grant Contract Terms and Conditions Acceptance

I am authorized to act on behalf of the applicant in this matter, and I have received, reviewed and do hereby accept the Standard Terms and Conditions of the Grant Contract included as Appendix C of the Xcel Energy Renewable Development Fund RFP except as shown on the Contract Modification Form enclosed herewith.

Signature of Authorized Representative	Date
	04/01/2013

I hereby authorize Xcel Energy to make any inquiries and obtain any financial information necessary to evaluate my organization's capability to implement the proposed project. I also authorize Xcel Energy to make any necessary inquiries to verify the information I have presented. I also release all necessary information to Xcel Energy.

Signature of Authorized Representative	Date
	04/01/2013

I hereby certify that I have read and understand the terms and conditions contained in the Xcel Energy RFP and that the information contained in this proposal is true, correct and complete to the best of my knowledge.

Signature of Authorized Representative	Date
	04/01/2013

Typed Name	Title
Christopher Little	Director of Development

APPENDIX B
PROPOSED BUDGET SUMMARY

Appendix B
Proposed Budget Summary

[PC 72]

Budget Item	Year One			Year Two			Year Three			Year Four			Year Five			TOTAL PROJECT		
	RDF Share	Cost Sharing	Total Cost	RDF Share	Cost Sharing	Total Cost	RDF Share	Cost Sharing	Total Cost	RDF Share	Cost Sharing	Total Cost	RDF Share	Cost Sharing	Total Cost	RDF Share	Cost Sharing	Total Cost
Direct Costs																		
Salaries and Wages	64,959	435,041	500,000															
Fringe Benefits	-	-	-															
Equipment	4,017,751	26,907,375	30,925,126															
Consultants/Subcontractors	1,574,832	10,546,848	12,121,680															
Supplies	-	-	-															
Construction Materials	945,953	6,335,167	7,281,120															
Facilities	-	-																
Travel	3,248	21,752	25,000															
Publicity/Printing/Duplicating	650	4,350	5,000															
Workshops	-	-	-															
Other Direct Cots (explain in narrative)	831,606	5,569,369	6,400,975															
TOTAL DIRECT COSTS	7,439,000	49,819,901	57,258,901															
Indirect Costs (Not to Exceed 25%)																		
Administration	-	-	-															
Facilities	-	-	-															
TOTAL INDIRECT COSTS	-	-	-															
TOTAL COSTS	7,439,000	49,819,901	57,258,901															

APPENDIX C
GRANT CONTRACT TERMS AND CONDITIONS

GRANT CONTRACT TERMS AND CONDITIONS
[PRODUCTION]

THIS GRANT CONTRACT is made this ____ day of ____, 20__, by and between Northern States Power Company, a Minnesota corporation ("NSP"), with its principal place of business at 414 Nicollet Mall, Minneapolis, Minnesota 55401 and_____ ("Contractor") _____, a [State] _____ [corporation, LLC, etc.], with its principal place of business at _____. NSP and Contractor are sometimes individually referred to as a "Party" or collectively as the "Parties".

WHEREAS, Contractor intends to design, build, own and operate an electric generating facility project to be located in the vicinity of _____, consisting of __ number of generators with a total nameplate capacity of not more than ___megawatts ("MWs"), which will be interconnected with NSP's electric system and will produce renewable energy which may be sold to NSP. A description of the Project, which is the subject of this Grant Contract, is provided in this Grant Contract and Exhibits hereto;

WHEREAS, NSP and Contractor intend to fund the Contractor's electric generating Project utilizing Renewable Development Fund ("RDF") grant funds pursuant to Minnesota Statutes Section 116C.779 in accordance with the terms and conditions of this Grant Contract and Exhibits hereto; and

WHEREAS, Contractor may choose to enter into a power purchase agreement with NSP for the sale of the output of such facility or choose to otherwise utilize the output from the generating facility all as more fully described in the applicable Renewable Development Fund Request for Proposals.

NOW, THEREFORE, in consideration of the premises and mutual obligations set forth herein, the Parties agree as follows:

1. DEFINITIONS

A. ***Contractor*** has the meaning set forth in the opening paragraph of this Grant Contract.

B. ***Date***.

1) ***Grant Contract Start Date*** shall be the date first listed above.

2) ***Grant Contract End Date*** is the last date reimbursable expenses can be incurred, and shall be the earliest of 1) completion of the Project; 2) the Scheduled Completion Date indicated on Exhibit C; or 3) the date on which the Grant Contract has been terminated in accordance with this Grant Contract.

C. ***Facility*** is the physical generator and all appurtenant equipment and facilities necessary for the production of energy and capacity and delivery of such energy and

capacity that is being developed, constructed and placed into service as part of the Project.

D. ***Project*** refers to the scope of work arising from the selected proposal as described in Exhibit A. The scope of work to be included in Exhibit A is derived from the scope of work described in the proposal. Exhibit A may be modified only by mutual agreement between authorized representatives of both Parties.

E. ***Terms Relating to Data***

1) ***Technical Data*** or ***Data*** as used in this Grant Contract means recorded information regardless of form or characteristic, of a scientific or technical nature. It may, for example, document research; document experimental, developmental, demonstration, or engineering work; or be usable or used to define a design or process; or to procure, produce, support, maintain, or operate material. The Data may be graphic or pictorial delineation in media such as drawings or photographs, test specifications or related performance or design type documents or computer software (including computer programs, computer software databases, and computer software documentation). Examples of Technical Data include manufacturing techniques and methods, machinery, devices such as tools, products, or components, research and engineering, engineering drawings and associated lists, specifications, engineering calculations, standards, process sheets, manuals, technical reports, catalog item identification, and related information. Technical Data as used herein does not include financial reports, cost analyses and other information incidental to Grant Contract administration.

2) ***Business Information*** is information about the operation of a specific business. It includes information concerning the cost and pricing of goods, supply sources, cost analyses, characteristics of customers, books and records of the business, sales information including mailing lists, customer lists, business opportunities, information regarding the effectiveness and performance of personnel, and information incidental to Grant Contract administration.

3) ***Public Information*** is information previously published, generally available from more than one source, or information in the public domain. All air monitoring and emission Data included in a proposal or requested through a Grant Contract are public information.

4) ***Confidential Information*** is Technical Data or Business Information Contractor has satisfactorily identified, which is not otherwise public and which the Parties agree is appropriately treated as confidential.

5) ***Proprietary Data*** is such Data Contractor has identified in a satisfactory manner as being under Contractor's control prior to commencement of performance of this Grant Contract or produced by Contractor or its

subcontractors at its own expense, and which Contractor has reasonably demonstrated as being of a proprietary nature either by reason of copyright, patent or trade secret doctrines in full force and effect at the time when performance of this Grant Contract is commenced.

6) ***Trade Secret*** is any formula, plan, pattern, process, tool, mechanism, compound, procedure, source code, software, database, production Data, or compilation of information which is not patented and which is generally known only to certain individuals with a commercial concern who may be using it to fabricate, produce or compound an article of trade or a service having commercial value and which gives its owner or user an opportunity to obtain a business advantage over competitors who do not know or use it.

7) ***Generated Data*** is that Data that Contractor collects, collates records, deduces, reads out or postulates for use in the performance of this Grant Contract. In addition, any electronic Data processing program, model or software system developed or substantially modified by Contractor in the performance of this Grant Contract using RDF funds, together with complete documentation thereof, shall be treated as Generated Data.

8) ***Deliverable Data*** is that Data which, under the terms of this Grant Contract, is required to be delivered to NSP.

F. ***Project Manager*** shall be designated by the Contractor as the administrator of the Project, and who will be responsible, on behalf of Contractor, for managing the completion of task deliverables and milestones as set forth in Exhibit C. Project Manager is also the designate to be noticed as provided in Exhibit D.

G. ***Proposal*** shall mean Contractor's proposal as approved by the Commission and attached hereto as Exhibit J.

H. ***Renewable Development Fund Advisory Group*** or ***Advisory Group*** shall mean the current advisory group to the Renewable Development Fund as constituted from time to time.

Certain other terms are defined elsewhere in this Grant Contract.

2. CONTRACT TERM

The term of this Grant Contract shall be from the Contract Start Date to the Contract End Date. This Grant Contract is of no force or effect until it has been signed by both Parties. In the event that the Project has not been completed within three (3) years of the originally scheduled Contract End Date, this Grant Contract shall automatically be terminated, subject to the provisions of Section 16 hereof, and further subject to the rights of NSP hereunder to exercise all rights and remedies hereunder for any Event of Default by Contractor that may have occurred prior thereto at any time as permitted by this Grant Contract. Contractor and NSP acknowledge that this Grant Contract shall be effective as of the Contract Start Date but that any obligation to disburse grant funds remains subject to NSP's receipt of all jurisdictional regulatory approvals.

3. PAYMENTS TO CONTRACTOR

Subject to the conditions in this Grant Contract and Exhibits hereto, NSP agrees to reimburse Contractor for actual and allowable expenses incurred in accordance with Exhibit C subject to the limitations herein and therein, and the milestone progress or final payment limitations in Exhibit C. The total amount of this Grant Contract shall not exceed the maximum grant amount stated in Exhibit C or Contractor's total actual and allowable costs, whichever is less.

A. A request for payment shall consist of:

1) An invoice that lists actual and allowable expenses incurred up to the milestone payment amounts indicated in Exhibit C; and

2) Substantiation of such expenses in a form reasonably acceptable to NSP; and

3) Documentation of the deliverables as detailed in Exhibit C satisfactory to NSP.

4) Each request for payment shall constitute a representation and warranty by Contractor that: (a) all representations and warranties set forth in this Grant Contract remain true and correct in all material respects, (b) Contractor has complied with all obligations contained in this Agreement through the date of the request for payment and (c) Contractor has fully disclosed to NSP all facts and other information known to Contractor which reasonably may affect Contractor's ability to complete the Project on schedule.

B. Contractor shall submit all invoices to the NSP Contract Manager.

C. Payments shall be made to Contractor only for undisputed invoices. An undisputed invoice is an invoice for amounts that appear to the NSP Contract Manager to be consistent with and allowed under this Grant Contract. In the event the invoice contains expenses that the NSP Contract Manager believes have not been incurred, are inconsistent, or inappropriate, the NSP Contractor shall attempt to provide notice of identified issues to the Project Manager within fifteen (15) working days after receipt the invoice. Invoices paid remain subject to audit and verification.

D. Payment shall be made to Contractor no later than 30 calendar days from the date a correct, undisputed invoice is received by the NSP Contract Manager.

E. Contractor shall retain all records relating to all expenses reimbursed to Contractor, and to hours of employment on this Grant Contract by all employees of Contractor for which NSP is billed. Such records shall be maintained for a period of three (3) years after final payment of this Grant Contract, or until audited by the State, whichever occurs first, and shall be available for inspection or audit at any reasonable time by NSP or its designee.

4. PROJECT SCHEDULE AND BUDGET REVISIONS

A. Contractor shall meet the critical path schedule set forth on Exhibit B and meet the Project budget set forth on Exhibit C. Contractor shall provide reasonable advance notification to NSP of any anticipated schedule deviations or budget reallocations. Contractor may reallocate an element, or task in the budget of up to fifteen (15) percent of the total budget without prior written notice to NSP. Reallocations of more than fifteen (15) percent of the total budget require prior written approval of NSP.

B. Contractor shall provide sixty (60) days advance written notification to NSP for any request to make a reallocation as contemplated by Section 4.A of more than fifteen (15) percent. Along with any such request, Contractor shall submit any supporting documentation as NSP may request.

C. Contractor must report (i) changes in the scope, timing, use of equipment, use of suppliers, vendors, budgets, Project Managers and Project key assistants, location, Milestones or changes or potential changes that could affect the Milestones of the Project, and similar changes, events or conditions that could affect the Project and (ii) the occurrence of any event which could, with the giving of notice or the passage of time or both, constitute an Event of Default by Contractor under this Agreement, as soon as possible, but in no event later than five (5) business days after their occurrence or the knowledge of their potential occurrence. Such information shall be provided on the Notice of Change or Potential Change Form in Exhibit I to this Grant Contract. The NSP Contract Manager shall review such Change forms. Administrative changes may be allowed by the NSP Contract Manager by written approval. Minor changes may be agreed to by the Project Manager and the NSP Contract Manager and shall be memorialized in a written amendment to this Grant Contract. Material changes must be approved by NSP in the form of a written amendment to this Grant Contract, which the Parties acknowledge may be subject to approval of the Minnesota Public Utilities Commission ("Commission") as deemed appropriate by NSP, in NSP's sole discretion. A change is material if it results in changes in deliverables, moves due dates beyond the term of the Contract or modifies the scope of work reasonably beyond that approved by the Commission (any of such changes being a "Change"), and may require regulatory approval. If NSP determines appropriate, it may approve, modify, reject or refer the Change to the Advisory Group and/or the Commission for consideration. NSP anticipates providing to the Commission any Changes that are deemed to represent significant Project scope changes. All information relating to any Change may be provided to the Commission or otherwise publicly disclosed.

5. CONTRACT MANAGEMENT

A. Project Manager

The Project Manager on behalf of Contractor is designated in Exhibit D. Such Project Manager may not be replaced without NSP's prior written approval, such approval not to be unreasonably withheld. The Project Manager is responsible for the day-to-day Project status, decisions and communications with the NSP Contract Manager.

B. NSP Contract Manager

The NSP Contract Manager is designated in Exhibit D. The NSP Contract Manager is responsible for the day-to-day contract status, decisions and communications with the Project Manager. The NSP Contract Manager will review all deliverables, reports and invoices as provided for in Section 8, and notify Project Manager of any reporting deficiencies.

6. ANNUAL EVALUATION

NSP may annually evaluate all reporting, as required in Section 8, as well as any other information collected in accordance with this Grant Contract, to determine whether the Contractor is in compliance with the Standards of Performance as stated in Section 7. Contractor shall fully cooperate with NSP in any such evaluations. Any such annual evaluation may be presented to the Advisory Group and/or the Commission.

7. STANDARD OF PERFORMANCE

A. Standard of Performance shall mean Contractor, its subcontractors and their employees and agents in the performance of Contractor's work shall exercise the degree of skill and care required by customarily accepted good professional practices and procedures used in designing and building energy production facilities and (i) shall comply with all applicable federal, state and local laws, regulations and Project permit conditions, (ii) shall not infringe upon any intellectual property rights of any third parties and (iii) shall meet or exceed all performance standards and matrices set forth in the Proposal.

B. In the event that Contractor or its subcontractor(s) fail to perform in accordance with the Standard of Performance as defined in Section 7.A above, and in the event that the NSP Contract Manager becomes aware of any such failure, the NSP Contract Manager may notify the Project Manager who shall identify and propose an appropriate remedy for the failure. No failure of the NSP Project Manager to notify the Project Manager of any such failure shall relieve Contractor from any of its duties or obligations under this Grant Contract. In the event NSP determines the proposed remedy is not satisfactory, the NSP Contract Manager and the Project Manager shall seek to negotiate an appropriate resolution given the circumstances. If NSP determines such a resolution cannot be reached, it may refer the matter to the Advisory Group, who may choose to recommend an appropriate resolution. NSP shall retain all its rights under this contract should no mutual resolution be reached.

C. Nothing contained in this section is intended to limit any of the rights or remedies, which NSP may have under law or under other sections of this Grant Contract.

8. REPORTING

A. Once a month, beginning after the Contract Start Date, Project Manager shall prepare and provide to the NSP Contract Manager a progress report in form and detail acceptable to NSP that documents evidence of progress and deliverables as detailed in Exhibit C. Summary reports are to include a general overview of how the

Project is progressing; summary of the work activity for the past period; identification of active milestone(s) and estimate percent or Project work completed; specific/unforeseen problems encountered that need to be overcome that may be expected to affect the milestones, timeline of deliverables, or costs and Contractor's efforts to comply with the Project critical path schedule; and significant Project accomplishments. All such reports will be posted by Xcel Energy on a public website approved by the Commission.

B. At the conclusion of the Contractor's work, Contractor shall prepare a comprehensive written Final Report in form and detail acceptable to NSP, including an executive summary. The Final Report is to include a summary of what the project was intended to do and what was discovered or accomplished, the usefulness and benefits of the project's discovery or accomplishments, and a summary of lessons learned or project outcomes. Such Final Report must contain sufficient detail for technical readers and a clearly written summary for non-technical readers. The non-technical summary should be one-and-a-half to two pages in length including an executive summary of the project, the methodology used for the project, ratepayer benefits from the project and any lessons learned. The Final Report must include an evaluation of the Project's financial, environmental, and other benefits to the State of Minnesota and to NSP's ratepayers.

The NSP Contract Manager will review and approve the Final Report, or in the event the Final Report is not satisfactory to NSP, shall identify deficiencies, which Contractor shall resolve within 30 days. Contractor shall also meet with the Advisory Group to present the findings, conclusions, and recommendations. The Contractor shall present the Final Report to the Advisory Group on or before the Contract End Date. All Final Reports will be posted by Xcel Energy on a public website approved by the Commission.

C. All reports, including reprints, shall include the following legend:

LEGAL NOTICE

THIS REPORT WAS PREPARED AS A RESULT OF WORK SPONSORED BY THE RENEWABLE DEVELOPMENT FUND AS MANAGED BY XCEL ENERGY. IT DOES NOT NECESSARILY REPRESENT THE VIEWS OF XCEL ENERGY, ITS EMPLOYEES, OR THE RENEWABLE DEVELOPMENT FUND ADVISORY GROUP. XCEL ENERGY, ITS EMPLOYEES, CONTRACTORS, AND SUBCONTRACTORS MAKE NO WARRANTY, EXPRESS OR IMPLIED, AND ASSUME NO LEGAL LIABILITY FOR THE INFORMATION IN THIS REPORT; NOR DOES XCEL ENERGY, ITS EMPLOYEES OR THE RENEWABLE DEVELOPMENT FUND ADVISORY GROUP REPRESENT THAT THE USE OF THIS INFORMATION WILL NOT INFRINGE UPON PRIVATELY OWNED RIGHTS. THIS REPORT HAS NOT BEEN APPROVED OR DISAPPROVED BY NSP NOR HAS NSP PASSED UPON THE ACCURACY OR ADEQUACY OF THE INFORMATION IN THIS REPORT.

D. Contractor shall provide annual, public electric generation reports to document RDF benefits for the ten (10) years subsequent to Project completion. Reports are to include power generated, net sales, and economic indicators and shall be provided to the RDF Advisory Group. NSP may require adequate assurance or withhold final payment of funds until this reporting covenant has been completed.

9. RECORDKEEPING, COST ACCOUNTING AND AUDITING

A. Cost Accounting

Contractor agrees to keep separate, complete, and correct accounting of the costs involved in developing, installing, constructing, and testing of the Facility, the work on the Project or rights under this Grant Contract.

B. Accounting Procedures

The Contractor's costs shall be determined on the basis of the Contractor's accounting system procedures and practices employed as of the effective date of this Grant Contract. The Contractor's cost accounting practices used in accumulating and reporting costs during the performance of this Grant Contract shall be consistent with the practices used in estimating costs for any proposal to which this Grant Contract relates; provided that such practices are consistent with the other terms of this Grant Contract and provided, further, that such costs may be accumulated and reported in greater detail during performance of this Grant Contract. The Contractor's accounting system shall distinguish between direct costs and indirect costs. All costs incurred for the same purpose, in like circumstances, are either direct costs only or indirect costs only with respect to costs incurred under this Grant Contract.

C. Allowability of Costs

1) Allowable Costs

The costs for which the Contractor shall be reimbursed under this Grant Contract include all direct costs incurred in the performance of the work that is identified in Exhibit C, subject to the limitations and cap of the Grant Amount in this Grant Contract and Exhibit C. Costs must be incurred within the term of the Contract.

2) Unallowable Costs

Contingency costs, imputed costs, fines and penalties, losses on contracts, liabilities from failure to comply with applicable laws, rules and regulations, costs, settlements and judgments under any litigation or arbitration, expenses not incurred, and excess profit taxes are unallowable, as well as costs determined inappropriate or inconsistent with Exhibit C, by the NSP Contract Manager.

D. Audit Rights

Contractor shall maintain books, records, documents, and other evidence, based on the procedures set forth above, sufficient to reflect properly all costs claimed to have been incurred in performing this Grant Contract. NSP, or at NSP's option, a public accounting firm designated by NSP, may audit such accounting records at all reasonable times with prior notice by NSP. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Further, Contractor agrees to include a similar right of NSP to audit records and interview staff in any subcontract related to performance of this Grant Contract.

10. CONFIDENTIALITY

A. NSP agrees to work with Contractor to make reasonable efforts to keep confidential the items listed in Exhibit E. Designation of trade secrets and justification for trade secret information before the Commission and other agencies shall be the responsibility of the Contractor.

B. Public and Confidential Deliverables

Deliverables including, but not limited to, progress reports, task deliverables and the Final Report shall not contain confidential information except when the NSP Contract Manager and the Contractor deem it necessary to include confidential information in a deliverable. In such event, the Contractor shall prepare the deliverable in two separate volumes, one for public distribution and one to be maintained in NSP's confidential records. Only those items specifically listed in Exhibit E or in a subsequent determination of confidentiality qualify as confidential deliverables.

C. Identifying and Submitting Confidential Information

All confidential information submitted by the Contractor shall be marked "Confidential" on each document containing the confidential information.

D. Future Confidential Information

During the term of this Grant Contract, Contractor may develop additional Data or information that the Contractor considers to be nonpublic confidential information not listed on Exhibit E. Contractor must list all items and information along with justification for confidentiality and submit a proposed revision of Exhibit E to the NSP Contract Manager. Exhibit E may be amended by mutual agreement, however any amendment to Exhibit E shall not affect NSP's rights under section 12 as to the additional Data and information by amending Exhibit E. In the event there is a disagreement over the items to be delivered under the Contract, the Parties shall use the "Disputes" clause found at section 14.A. Such subsequent determinations will be added to Exhibit E.

E. General Right to Use Information

Except for Confidential Information identified on, or added by amendment to, Exhibit E, NSP shall have the right to use all information and data delivered by Contractor or derived from the Project or this Grant Contract: (i) in the course of providing goods or services to customers of NSP whether or not affected by the Project, and (ii) for purposes of research, development, marketing and producing energy and energy systems and processes. Contractor hereby also consents to release of its customer information with regard to the foregoing.

11. REPRESENTATIONS OF CONTRACTOR

Contractor represents, warrants and covenants that, except as set forth on Schedule 11 hereto:

A. It is duly authorized to conduct business in all jurisdictions necessary to perform this Grant Contract, and it has the power and authority to enter into and perform this Grant Contract; and

B. The execution and performance of this Grant Contract and the construction and operation of the Facility and implementation of the Project hereunder will not conflict with or constitute a breach of or a default under any contract, license or other agreement applicable to Contractor or its property; and

C. The execution and performance of this Grant Contract and the construction and operation of the Facility and the implementation of the Project hereunder will not require any consent, license, permit or approval that has not been obtained from the appropriate governmental authority; and

D. It has taken all actions necessary and advisable to authorize this Grant Contract and the construction and operation of the Project hereunder, and this Grant Contract is the legal, valid and binding obligation of Contractor, fully enforceable in accordance with its terms; and

E. It has all internal financing and co-funding resources available for the Project as required to complete the Project to be funded under this Grant Contract; and

F. It has entered into all contracts, in a form satisfactory to NSP, necessary for the services, supplies, materials, equipment and other products necessary for performance of the Project with qualified suppliers and will promptly pay and discharge all such obligations upon receipt of conforming goods and services provided for the Project; and all such orders and contracts may be assigned to NSP if NSP exercises its right, in its sole discretion, under this Grant Contract to complete the performance of the Grant Contract, and contractor hereby authorizes any monies paid by NSP on such order or contracts to be offset and deducted from the Grant Amount of this Grant Contract; and

G. It has all the necessary permits, orders, authorization or any other necessary permission in place for the performance of this Grant Contract, including, but not limited to, emissions permits, transportation permits, conditional use permits and waste permits; and

H. It will provide true and correct copies of all contracts and agreements related to the performance of this Grant Contract to NSP upon execution; and

I. It will not terminate any contract with any Minnesota-based institution, supplier or service provider involved in the performance of this Project without consultation with NSP; and

J. It and/or its contractors will maintain the liability insurance coverage required by Exhibit F hereof and any other insurance required for the Project and name Xcel Energy, NSP and the Advisory Group as additional insureds. Contractor agrees to promptly notify NSP of any notice of cancellation received from Contractor's current insurer and who the replacements insurer will be without allowing any gap in such insurance.

12. RIGHTS OF PARTIES REGARDING INTELLECTUAL PROPERTY

A. NSP's Rights in Deliverables

Subject to Section 12.B of this Grant contract, Deliverables, reports and Deliverable Data specified for delivery to NSP under this Grant Contract shall become the property of NSP. NSP may use, publish, and reproduce the deliverables and reports subject to the provisions of subparagraph C in accordance with the goals and policies of NSP and jurisdictional regulatory authorities for public information and renewable energy development educational purposes.

B. Rights in Technical Data, Generated Data, and Deliverable Data

1) Contractor's Rights

All Data, including Technical Data, Generated Data and Deliverable Data, produced under this Grant Contract shall be the property of the Contractor, limited by the license retained by the NSP in paragraph 12.B.2 below, and the rights NSP has in deliverables specified above in section 12.A.

2) NSP's Rights

For Technical Data, Generated Data and Deliverable Data produced under this Grant Contract, NSP retains a no-cost, non-exclusive, non-transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, produce and to authorize others to produce, translate, publish and use all such Data, subject to the provisions of subparagraph C.

C. Limitations on NSP Disclosure of Contractor's Confidential Records

1) Data provided to NSP by Contractor, which Data the Parties have agreed to keep confidential and which Contractor seeks to have designated as confidential, or is the subject of a pending application for confidential designation, shall not be disclosed by NSP, unless disclosure is required such

as by order of a court of competent jurisdiction or determination by regulatory agency.

2) NSP agrees not to disclose Confidential Data or the contents of reports containing information considered by Contractor as confidential, without first providing a copy of the disclosure document for review and comment by Contractor. Contractor may make an application for confidential designation on some or all of the Data, and shall be responsible for all costs and expenses thereof.

D. Exclusive Remedy

In the event NSP intends to publish or has disclosed Data the Contractor considers confidential, the Contractor's sole and exclusive remedy shall be a civil court action for injunctive relief, which shall be filed in Hennepin County, Minnesota. This provision shall not prevent Contractor from attempting to prevent disclosure by any government agencies under the Minnesota Government Data Practices Act provisions of Minnesota Statutes, Chapter 13 or otherwise.

E. Limitations on Contractor Disclosure of Contract Data, Information, Reports and Records

1) Contractor will not disclose the contents of the final or any preliminary deliverable or report without first providing a copy of the disclosure document for review and comment to the NSP Contract Manager. The Contractor shall incorporate the comments of the NSP Contract Manager, unless, based upon professional judgment, Contractor and NSP agree otherwise.

2) Notwithstanding the foregoing, in the event any public statement is made by NSP as to the role of Contractor or the content of any preliminary or Final Report of Contractor hereunder, Contractor may, if it believes such statement to be incorrect, state publicly what it believes is correct.

3) No record that is provided by NSP to Contractor for Contractor's use in executing this Grant Contract and which has been designated as confidential shall be disclosed, unless a court of competent jurisdiction orders disclosure, and Contractor has timely provided NSP with a copy thereof. At the election of the NSP Contract Manager, the Contractor, its employees and any subcontractor shall execute a "Confidentiality Agreement," supplied by the NSP Contract Manager.

4) Contractor acknowledges that each of its officers, employees, and subcontractors who are involved in the performance of this Grant Contract will be informed about the restrictions contained herein and will be required to abide by the above terms; and that Contractor will be responsible for any violations by any such individuals.

F. Copyrights

1) Any copyrightable material first produced under this Grant Contract shall be owned by the Contractor, limited by the license granted to NSP in 2) below.

2) Contractor agrees to grant NSP a royalty-free, no-cost nonexclusive, irrevocable, nontransferable worldwide, perpetual license to produce, translate, publish and use and to authorize others to produce, translate, publish and use all copyrightable material first produced or composed in the performance of this Grant Contract.

3) Contractor will apply copyright notices to all deliverables using the following form or such other form as may be reasonably specified by NSP.

"©[Year of first publication of deliverable], [the Copyright Holder's name].
ALL RIGHTS Reserved."

G. Intellectual Property Indemnity

Contractor warrants that Contractor will not, in the course of its work under this Grant Contract or otherwise, infringe or misappropriate any intellectual property right of a third party, and further warrants and agrees that it will conduct a reasonable investigation of the intellectual property rights of third parties to avoid such infringement. Contractor will defend and indemnify NSP from and against any claim, lawsuit or other proceeding, loss, cost, liability or expense (including court costs and reasonable fees of attorneys and other professionals) to the extent arising out of: (i) any third party claim that a deliverable infringes any patent, copyright, trade secret or other intellectual property right of any third party, or (ii) any third party claim arising out of the negligent or other tortious act(s) or omission(s) by the Contractor, its employees, subcontractors or agents, in connection with or related to the deliverables or the Contractor's performance thereof under this Grant Contract.

H. Green Tags or Environmental Renewable Energy Credits

Excluding any federal or state tax credits to which Contractor is entitled, such as that granted under Minnesota Statutes, section 216C.41 for the Facility, Contractor hereby grants, assigns, and transfers to NSP any and all rights to and ownership of attributes of an environmental or other nature that are created or otherwise arise from the Facility's generation of energy using renewable fuel (in contrast to the generation of electricity using nuclear or fossil fuels or resources), including, but not limited to all Renewable Energy Credits. For the purposes of this Grant Contract, "Renewable Energy Credits" shall mean all attributes of an environmental or other nature that are created or otherwise arise from the Facility's generation of electrical energy using any renewable fuel in contrast to the generation of electricity using nuclear or fossil fuels or resources, including without limitation, tags, certificates or similar products or rights associated with renewable fuels as a "green" or "renewable" electric generation resource, including any and all environmental air quality credits, emissions reductions, off-sets, allowances or other benefits related to the generation of energy by the Facility that reduces, displaces or offsets emissions from fuel combustion at another location pursuant to any existing or future

international, federal, state or local legislation or regulation or voluntary agreement, and the aggregate amount of credits, offsets or other benefits including any rights, attributes or credits arising from or eligible for consideration in the Midwest Renewable Energy Tracking System ("M-RETS") or any similar program pursuant to any international, federal, state or local legislation or regulation or voluntary agreement and any renewable energy certificates issued pursuant to any program, information system or tracking system associated with the renewable electrical energy generated from the Facility.

The provisions of this Section 12.H of this Grant Contract shall: (i) be applicable to all energy produced by the Facility for the life of the Facility, (ii) survive the termination or expiration of this Grant Contract, as provided therein, and (iii) survive the termination or expiration of any agreement between Contractor and NSP or its affiliates for the purchase of the capacity and/or energy produced by the Facility, if any. To the extent Contractor transfers ownership of or other rights in the Facility to a third party, Contractor shall (i) promptly notify NSP of such transfer and (ii) ensure that the provisions of this Section 12.H of this Grant Contract shall be applicable to and enforceable against such third party or any subsequent owner of the Facility. Transfer of ownership of or other rights in the Facility by Contractor shall not relieve Contractor of its obligations under this Section 12.H of this Grant Contract.

The Parties acknowledge and agree that attributes of an environmental or other nature that are created or otherwise arise from the Facility's generation of energy using renewable fuel are unique to the Facility and cannot be replaced by the purchase of replacement Renewable Energy Credits; and NSP shall have the rights to specific performance provided in Section 15.7 hereof.

13. NOTICES TO PARTIES

Notice to either party may be given by certified mail properly addressed, postage fully prepaid, or by overnight carrier providing record of receipt, to the address designated in Exhibit D for each respective party or to such other address as either party shall notify the other in accordance with this section.

14. DISPUTES

A. Dispute Resolution

If NSP and the Contractor cannot resolve a dispute or grievance, Project Manager and NSP Contract Manager shall each prepare a written statement of the issues in dispute, the legal authority or other basis for their respective positions and the remedy sought. The packages must be submitted to the Renewable Development Fund Advisory Group. The Advisory Group shall make a determination within ten working days after receipt of the package. Should Contractor disagree with the Advisory Group's decision, Contractor may appeal to the Commission. Contractor shall continue to perform its responsibilities under this Grant Contract during any dispute.

B. Legal Remedy

The interpretation and performance of this Grant Contract and each of its provisions shall be governed and construed in accordance with the laws of the State of Minnesota. The Parties hereby submit to the exclusive jurisdiction and enforcement authority of the Commission or, in the event the Commission declines jurisdiction, or in the event that NSP is exercising its rights under Sections 12.D or 15.5 hereof, to the exclusive jurisdiction of the courts of the State of Minnesota, and venue is hereby stipulated as Minneapolis, Minnesota.

15. DEFAULT AND TERMINATION

15.1 Events of Default of Contractor.

(A) Any of the following shall automatically constitute an Event of Default of Contractor upon its occurrence and no notice or cure period shall be applicable:

1) Contractor's dissolution or liquidation;

2) Contractor's assignment of this Grant Contract or any of its rights hereunder;

3) Contractor's sale or other transfer of the Project or any part thereof or interest therein during the Term of this Grant Contract;

4) Contractor's filing of a petition in bankruptcy or insolvency or for reorganization or arrangement under the bankruptcy laws of the United States or under any insolvency act of any state, or Contractor voluntarily taking advantage of any such law or act by answer or otherwise;

5) Contractor's actual or apparent fraud with any funding under this Grant Contract, waste, tampering with any NSP-owned facilities or material, intentional misrepresentation or willful misconduct in connection with this Grant Contract and/or the work on the Project; or

6) Contractor's abandonment of the Project;

(B) Any of the following shall constitute an Event of Default of Contractor upon its occurrence but shall be subject to cure within ninety (90) days after the date of written notice from NSP to Contractor:

1) Contractor's failure to meet the Critical Path Schedule;

2) Contractor's failure to maintain in effect any agreements required to deliver the final product; or

3) Contractor's failure to comply with the Standard of Performance under Section 7 or with any other material obligation under this Grant Contract.

4) Contractor's failure to make any payment required under this Grant Contract;

5) Any direct or indirect change of control of Contractor by sale of majority equity interest, transfer of majority voting rights, merger, consolidation, additional issuance of equity or otherwise);

6) Any representation or warranty made by Contractor in this Grant Contract shall prove to have been false or misleading in any material respect when made or ceases to remain true during the Term if such cessation would reasonably be expected to result in a material adverse impact on the Project or NSP; or

7) The filing of a case in bankruptcy or any proceeding under any other insolvency law against the parent or any other affiliate of Contractor that could materially impact Contractor's ability to perform its obligations hereunder; provided, however, that Contractor does not obtain a stay or dismissal of the filing within the cure period.

15.2 Events of Default of NSP.

(A) Any of the following shall automatically constitute an Event of Default of NSP upon its occurrence and no notice or cure period shall be applicable:

1) NSP's dissolution or liquidation provided that division of NSP into multiple entities or any other corporate reorganization or business restructuring shall not constitute dissolution or liquidation; or

2) NSP's filing of a petition in bankruptcy or insolvency or for reorganization or arrangement under the bankruptcy laws of the United States or under any insolvency act of any State, or NSP voluntarily taking advantage of any such law or act by answer or otherwise.

(B) NSP's failure to comply with any other material obligation under this Grant Contract, which would result in a material adverse impact on Contractor, shall constitute an Event of Default of NSP upon its occurrence but shall be subject to cure within ninety (90) days after the date of written notice from Contractor to NSP; or

(C) NSP's failure to make any undisputed payment shall constitute an Event of Default of NSP upon its occurrence but shall be subject to cure within sixty (60) Days after the date of written notice from Contractor to NSP.

15.3 Termination. Upon the occurrence of an Event of Default, which has not been cured within the applicable cure period, if any, the non-defaulting Party shall have the right to immediately terminate this Grant Contract without further notice. Neither Party shall have the right to terminate this Grant Contract except as provided for upon the occurrence of an Event of Default as described above or as otherwise may be explicitly provided for in this Grant Contract. In addition, the Parties may mutually agree in writing to terminate this Grant Contract.

15.4 Termination by NSP Due to Event of Default of Contractor. In the event NSP terminates this Grant Contract due to an Event of Default by Contractor, Contractor shall pay to NSP all monies disbursed under this Grant Contract by NSP to Contractor as of the termination of this Grant Contract due to an Event of Default by Contractor. Such payment shall be made by cashier's check or wire transfer no later than ninety (90) days following such termination of this Grant Contract.

15.5 Effect of Termination. The Parties acknowledge and agree that NSP and Contractor have entered into this Grant Contract to implement the order of the Commission approving the RDF grant to Contractor for its work on the Project. The Parties further acknowledge and agree that this Grant Contract, by implementing such order, provides the terms and conditions for Contractor's conduct and obligations so that it may receive such grant and the terms and conditions for NSP's administration of the grant. To that end, in the event that this Grant Contract is terminated pursuant to its terms, Contractor agrees that such termination shall also terminate any and all of Contractor's rights to the RDF grant award that may exist separate and apart of this Grant Contract by virtue of the Commission order approving the Project and Contractor hereby explicitly waives and any all of its rights to seek to implement any and all of such rights that may exist through such Commission order and outside of this Grant Contract. Furthermore, termination of this Grant Contract pursuant to its terms shall act as a withdrawal of Contractor's grant request.

15.6 Construction by NSP Following Event of Default of Contractor.

(A) Prior to any termination of this Grant Contract due to an Event of Default of Contractor, NSP or its designated representative shall have the right, but not the obligation, to possess, assume control of, and operate the Project facility as agent for Contractor (in accordance with Contractor's rights, obligations, and interest under this Agreement) during the period provided for herein. Contractor shall not grant any person, other than the facility lender, a right to possess, assume control of, and operate the facility that is equal to or superior to NSP's right under this Section.

(B) NSP shall give Contractor thirty (30) days notice in advance of the contemplated exercise of NSP's rights under this Section. Upon such notice, Contractor shall collect and have available at a convenient, central location at the Project facility all documents, contracts, books, manuals, reports, and records required to construct, operate, and maintain the facility in accordance with industry engineering practices and procedures. Upon such notice, NSP, its employees, contractors, or designated third parties shall have the

unrestricted right to enter the Project site and the facility for the purpose of constructing and/or operating the facility. Contractor hereby irrevocably appoints NSP as Contractor's attorney-in-fact for the exclusive purpose of executing such documents and taking such other actions as NSP may reasonably deem necessary or appropriate to exercise NSP's step-in rights under this Section.

(C) NSP shall be entitled to immediately draw upon any remaining RDF Grant Funds awarded for the Project to cover any expenses incurred by NSP in exercising its rights under this Section.

(D) During any period that NSP is in possession of and constructing and/or operating the Project facility pursuant to the foregoing paragraphs, NSP shall use commercially reasonable efforts to perform and comply with all of the obligations of Contractor under this Grant Contract and shall use the proceeds from the sale of electricity generated by the facility to first, reimburse NSP for any and all expenses reasonably incurred by NSP (including a return on capital at NSP's authorized return on equity most recently determined by the Minnesota Public Utilities Commission) in taking possession of and completing the Project facility, and to second, remit any remaining proceeds to Contractor.

(E) During any period that NSP is in possession of and operating the Project facility, Contractor shall retain legal title to and ownership of the Project facility and NSP shall assume possession and control solely as agent for Contractor:

1) In the event that NSP is in possession and control of the Project facility for an interim period, Contractor may resume operation and NSP shall relinquish its right to operate when Contractor demonstrates to NSP's reasonable satisfaction that it will remove those grounds that originally gave rise to NSP's right to operate the facility, as provided above, in that Contractor (i) will resume construction of the facility in accordance with the provisions of this Grant Contract, and (ii) has cured any Events of Default of Contractor which allowed NSP to exercise its rights under this Section.

2) In the event that NSP is in possession and control of the Project facility for an interim period, the facility lender, or any nominee or transferee thereof, may foreclose and take possession of and operate the facility and NSP shall relinquish its right to operate when the facility lender or any nominee or transferee thereof, requests such relinquishment and allows for a reasonable period of time to transition possession and operations.

(F) NSP's exercise of its rights hereunder to possess and construct the Project facility shall not be deemed an assumption by NSP of any liability attributable

to Contractor. If at any time after exercising its rights to take possession of and operate the facility, NSP elects to return such possession and operation to Contractor, NSP shall provide Contractor with at least fifteen (15) days advance notice of the date NSP intends to return such possession and operation, and upon receipt of such notice, Contractor shall take all measures necessary to resume possession, construction and operation of the Project facility on such date.

(G) In the event NSP assumes construction of the facility under this Section, NSP shall construct the facility in conformance with standard utility practices.

15.7 Specific Performance. In addition to the other remedies specified in this Grant Contract, in the event that any Event of Default of Contractor is not cured within the applicable cure period set forth herein, NSP may elect to treat this Grant Contract as being in full force and effect and NSP shall have the right to specific performance. If the breach by Contractor arises from a failure by third party constructing the facility pursuant to a construction agreement entered into with Contractor, and Contractor fails or refuses to enforce its rights under the construction agreement which would result in the cure, or partial cure, of the Event of Default, NSP's right to specific performance shall include the right to obtain an order compelling Contractor to enforce its rights under the construction agreement. Likewise, for any breach of this Grant Contract by NSP, Contractor shall have the right to specific performance

16. GENERAL TERMS & CONDITIONS

A. The following contract provisions, rights and obligations shall survive the completion or termination date of this Grant Contract:

- "Standard of Performance Section 7
- "Recordkeeping, Cost Accounting and Auditing" Section 9
- "Confidentiality" Section 10
- "Rights of Parties Regarding Intellectual Property" Section 12
- "Disputes" Section 14
- "Default and Termination" Section 15
- "General Terms and Conditions" Section 16

B. Headings have been inserted for the purpose of convenience and ready reference. They do not purport, and shall not be deemed, to define, limit, or extend the scope or intent of this Grant Contract.

C. Contractor shall make representatives available to testify in the event the Commission or State Legislature hold hearings or conduct an investigation with regard to this Grant Contract.

D. Contractor shall provide the NSP Contract Manager reasonable access to Contractor's premises and all Project records.

E. No amendment, alteration or variation of the terms of this Grant Contract shall be valid unless made in writing and signed by the Parties hereto, and no oral understanding or agreement not incorporated herein, shall be binding on any of the Parties hereto. Other than as specified herein, no document or communication passing between the Parties hereto shall be deemed as part of this Grant Contract.

F. Contractor shall not assign this Grant Contract, either in whole or in part, without the prior written consent of NSP, such consent may be withheld by NSP for any reason. Consent includes a formal written contract amendment approved by the Commission.

G. Minnesota law shall govern interpretation of this Grant Contract.

H. Time is of the essence in this Grant Contract.

I. Contractor shall indemnify, defend and save harmless NSP, its affiliates, officers, agents and employees and members of the Renewable Development Fund Advisory Group from any and all claims and losses arising out of: (i) Contractor's performance under this Grant Contract regardless of whether such performance is an Event of Default or not and (ii) Contractor's negligence of willful misconduct.

J. Contractor, its agents and employees shall act in an independent capacity and not as officers or employees or agents of NSP or the Advisory Group.

K. No waiver of any breach of this Grant Contract shall be held to be a waiver of any other or subsequent breach. All remedies afforded in this Grant Contract shall be taken and construed as cumulative, that is, in addition to every other remedy provided therein or by law, except to the extent limited or excluded by the express terms of this Grant Contract. The failure of NSP to enforce at any time any of the provisions of this Grant Contract, or to require at any time performance by Contractor of any of the provisions therefore, shall in no way be construed to be a waiver of such provisions, nor in any way affect the validity of this Grant Contract or any part thereof or the right of NSP to thereafter enforce each and every such provision.

L. If any provision of this Grant Contract is held invalid, that invalidity shall not affect other provisions of the Contract. In the event that any provision of this Grant Contract is unenforceable or held to be unenforceable, the Parties agree that all other provisions of this Grant Contract have force and effect and shall not be effected thereby.

M. All Exhibits and Addendums are incorporated into this Grant Contract by this reference and made a part hereof. Contractor represents and warrants that all material statements of fact made in its Grant Application and due diligence responses are true and correct statements as of the Contract Start Date and that such statements do not omit any material facts necessary to make Contractor's Grant

Application materially misleading. This Grant Contract contains the entire agreement between the Parties with respect to the subject matter hereof, and supersedes all prior negotiations between the Parties. In the event of any inconsistency between any of the terms and conditions of this Grant Contract and the terms and conditions of any or all Exhibits, the terms and conditions of this Grant Contract shall control. In the event of any inconsistency between the terms and conditions of any or all of Exhibits A, B and C and the terms and conditions of the Proposal, the terms and conditions of Exhibits A, B and C shall control

N. Contractor acknowledges and agrees that nothing under this Grant Contract or the Commission order approving the RDF grant to Contractor for the purposes of the Project obligates NSP or its affiliates to enter into any agreement for the purchase by NSP or its affiliates of the energy and/or capacity generated by the Facility or Project.

O. Contractor acknowledges that NSP manages the RDF and power purchases through different functions of the company or through its affiliates. To that end, Contractor agrees that any breach, dispute, or other issue related to NSP's or its affiliates' performance under any agreement for the purchase of the energy and/or capacity of the Facility or Project ("PPA") or other conduct by NSP related to such PPA shall not be considered a breach by NSP of its obligation of good faith and fair dealing or any other statutory or common law requirement under this Grant Contract and Contractor agrees to waive any and all claims at equity or law related thereto. Contractor additionally agrees that any breach, dispute, or other issue related to NSP's performance of this Grant Contract or other conduct by NSP related to this Grant Contract shall not be considered a breach by NSP of its obligation of good faith and fair dealing or any other statutory or common law requirement under the PPA and Contractor agrees to waive any and all claims at equity or law related thereto.

P. IN NO EVENT WILL NSP BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR KIND BASED ON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR ANY OTHER LEGAL THEORY, INCLUDING, BUT ARE NOT LIMITED TO, LOSS OF PROFIT; LOSS OF SAVINGS OR REVENUE; LOSS OF GOODWILL; LOSS OF USE OF THE PROJECT OR ANY ASSOCIATED PROJECT EQUIPMENT; COST OF CAPITAL; COST OF ANY SUBSTITUTE PROJECT EQUIPMENT, FACILITIES, OR SERVICES; DOWNTIME; THE CLAIMS OF ANY THIRD PARTIES INCLUDING CUSTOMERS; AND INJURY TO PROPERTY REGARDLESS OF THE NUMBER OF CLAIMS OR THE THEORIES OF RELIEF.

In Witness Whereof, the Parties have agreed to this Grant Contract.

Northern States Power Company,
a Minnesota corporation

By: _____ Date: _____

Its: _____

(Name of Contractor)

By: _____ Date: _____

Its: _____

APPENDIX D
GRANT CONTRACT MODIFICATION FORM

GRANT CONTRACT MODIFICATION FORM

Instructions: Please use this form to identify exceptions to the Standard Form Grant Contract Terms and Conditions ("Grant Contract") which was attached to the Xcel Energy RFP. Please append additional pages should you require more space. As described in the RFP, Xcel Energy prefers that all selected grant applicants enter into the Grant Contract unmodified. However, Xcel Energy is willing to entertain exceptions to the Grant Contract to the extent they are necessary.

Please clearly identify the Grant Contract (*i.e.* Energy Production or Research and Development) and section of the Grant Contract to which you take exception. Please also provide new proposed language, redline formatting is preferred. Last, every exception must identify the rationale for it. Exceptions taken to the Grant Contract must be clearly expressed such that Xcel Energy can reasonably understand your concerns. Statements containing language such as "To be discussed" do not provide Xcel Energy sufficient information to understand your concerns. Bids providing such comments may be rejected.

Grant Contract Exceptions:

Bidder's Name: Minnesota Go Solar, LLC
Bidder's Project Title: Minnesota Go Solar, 20 - 1 MW(AC) Solar Projects
Contract: X Energy Production ___ Research and Development

Section	Proposed Revisions	Rationale
15.1(A)(3)	This section should allow for the introduction of the permanent financing for each individual project upon commercial operation of such project	This would allow bidder to use lease structured financing or other type of financing that would require conveyence of the project to the lender.

Section	Proposed Revisions	Rationale

Section	Proposed Revisions	Rationale

Disclaimer: Selection of your proposal does not signify acceptance of your proposed Grant Contract Revisions. Xcel Energy reserves the right to accept or reject any proposed modification to the Grant Contract. To the extent Xcel Energy rejects a proposed modification, you may either accept Xcel Energy's rejection or withdraw your proposal. Xcel Energy will not entertain any exceptions to the Grant Contract not identified herein.

Attestation: I am an authorized representative of the Bidder listed above and have the requisite authority to bind the Bidder. I have read, understand, and will comply with all instructions and disclaimers contained in this Grant Contract Modification Form.

Name of Bidder: Minnesota Go Solar, LLC

By: Chirstopher Little
Chirstopher Little

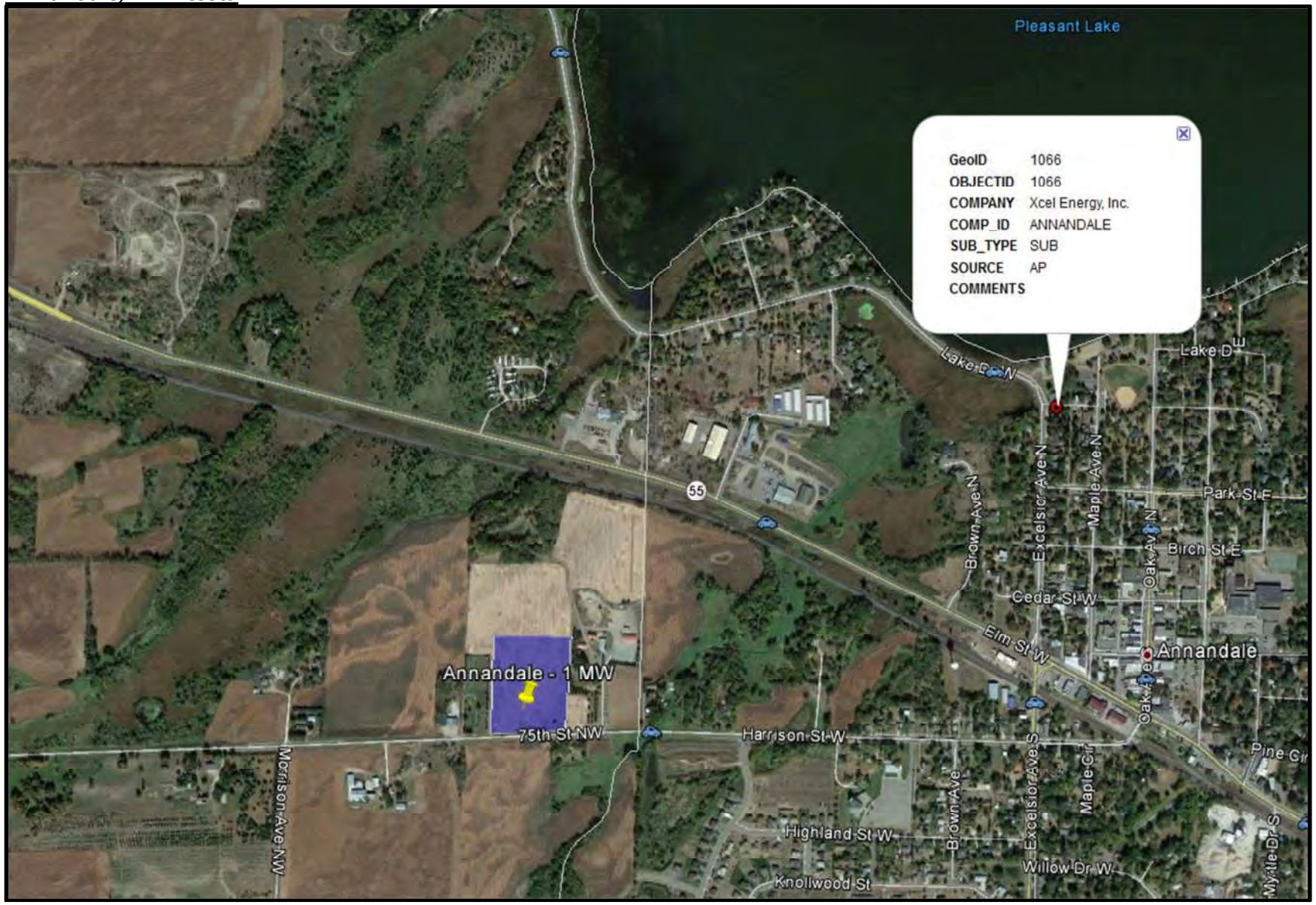
Its: Director of Development

Date: April 1, 2013

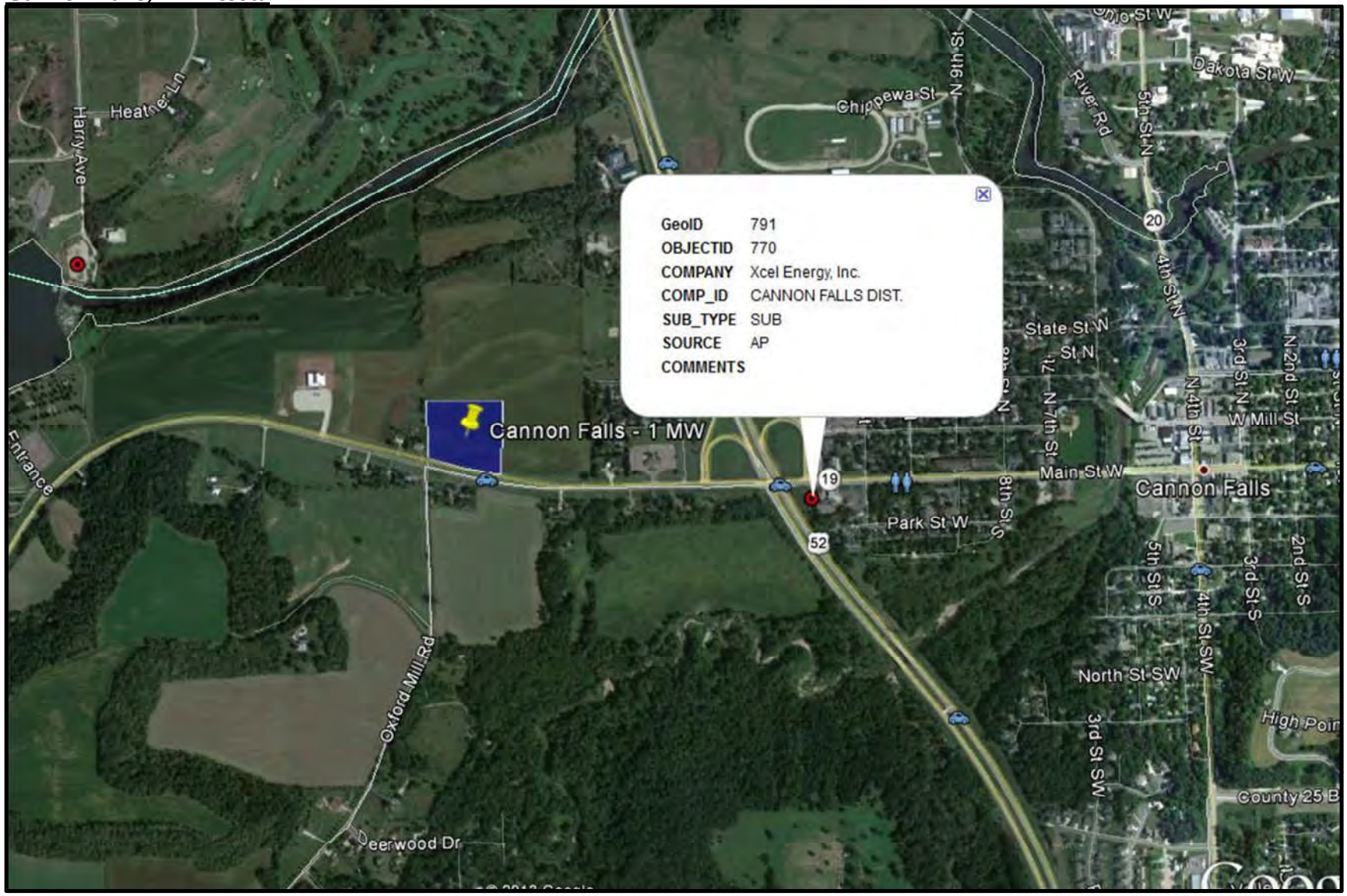
APPENDIX E
PROJECT SITE MAPS

Appendix E – Go Solar Project Site Maps

Annandale, Minnesota



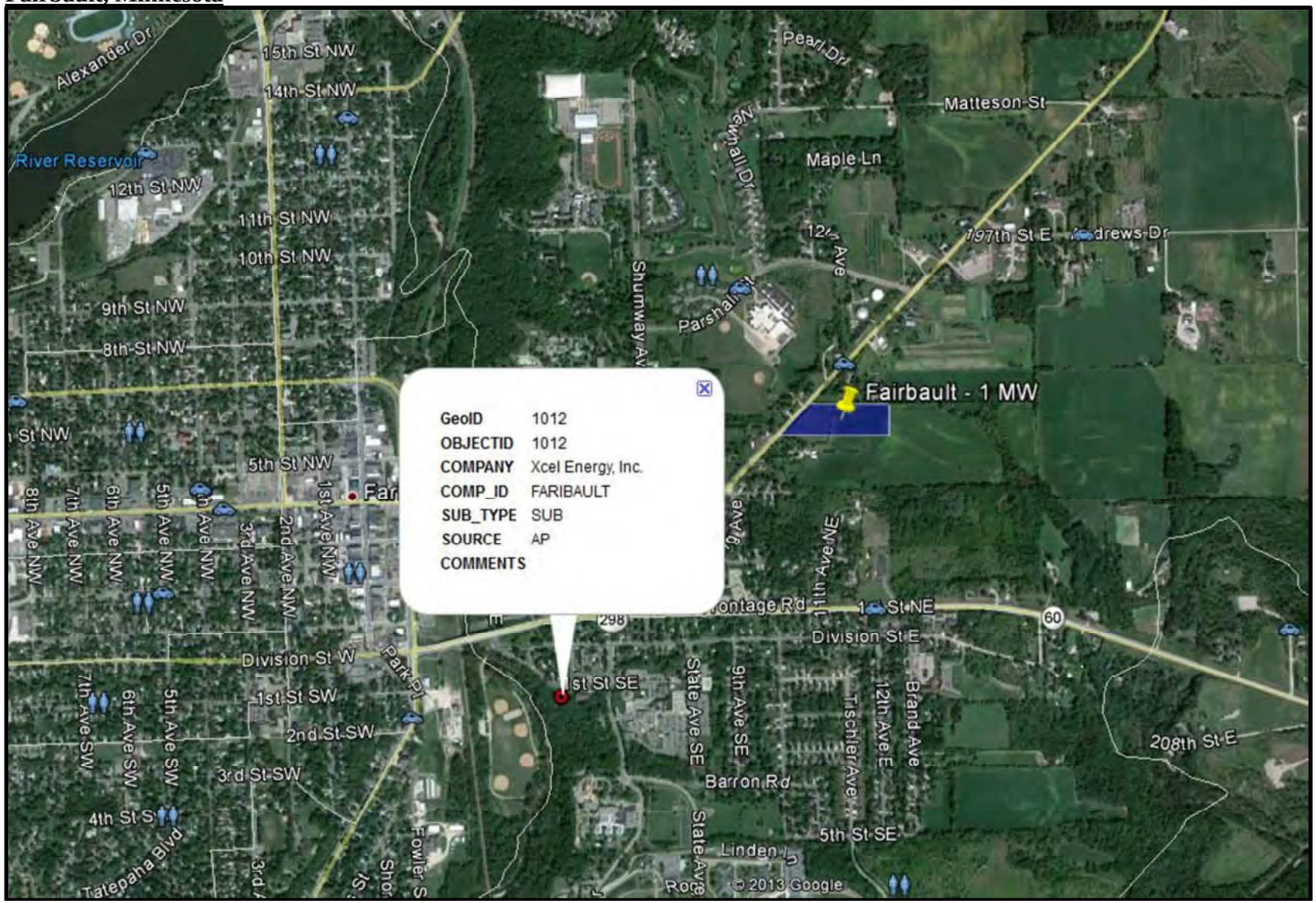
Cannon Falls, Minnesota



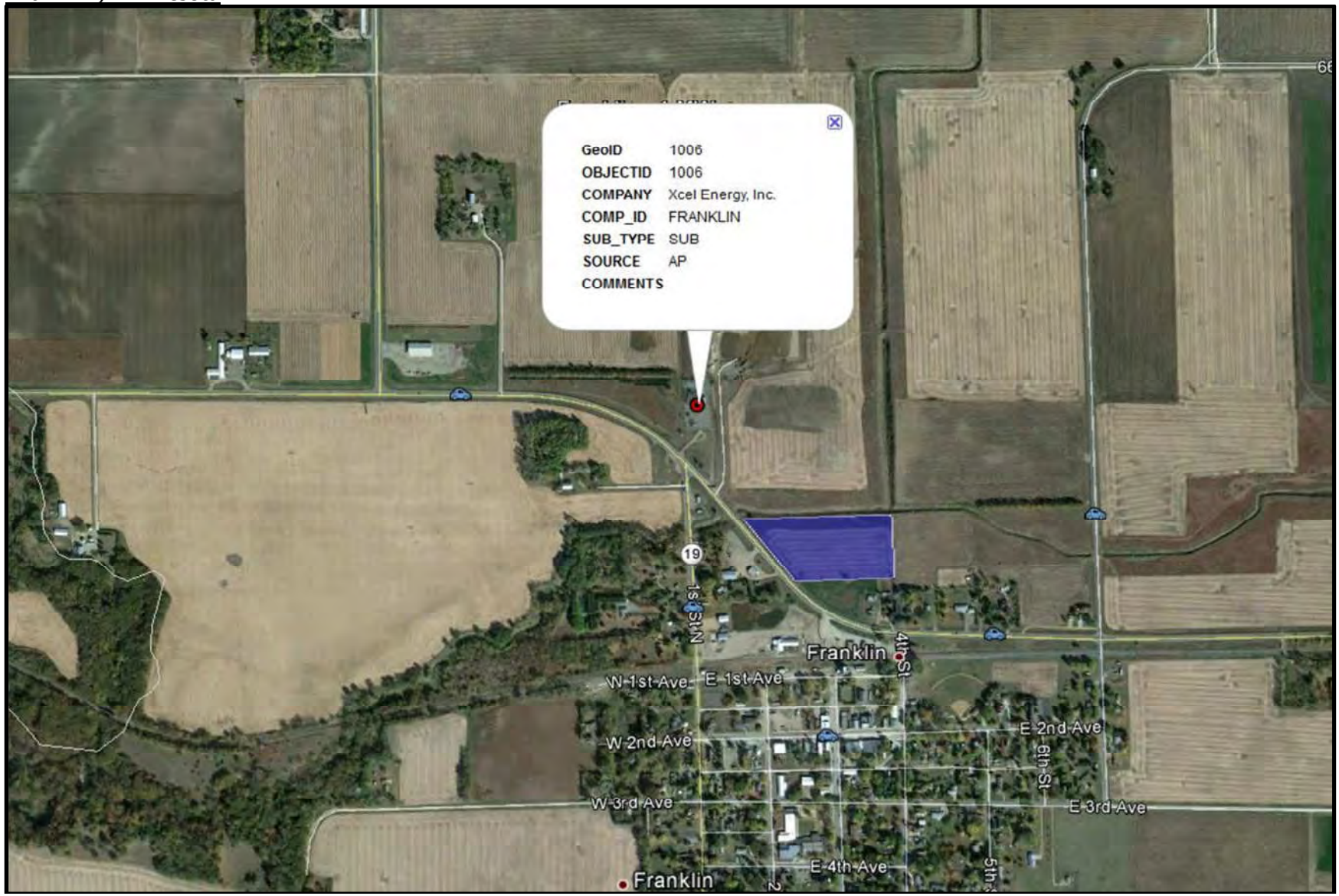
Clara City, Minnesota

Eagle Lake, Minnesota

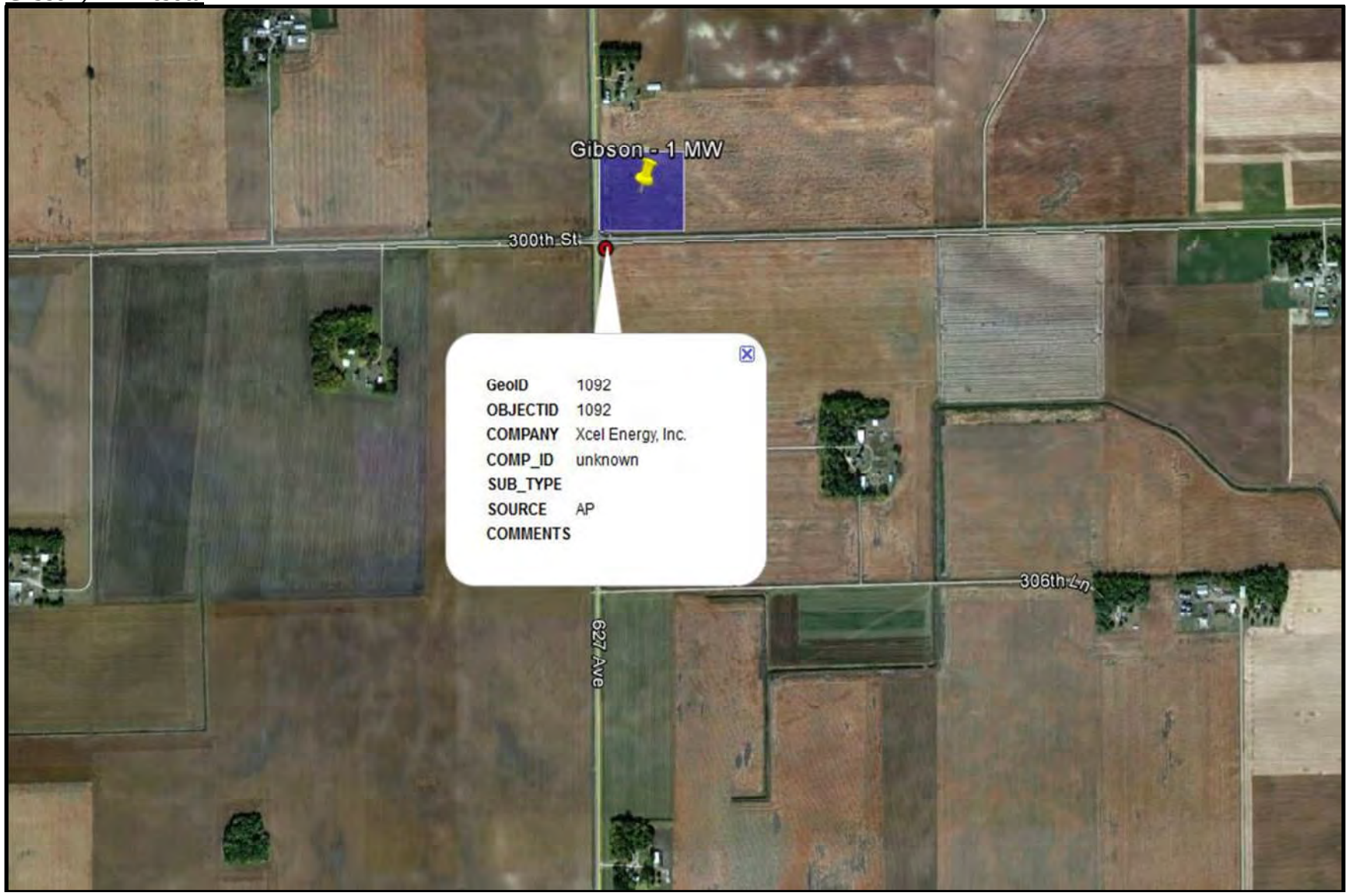
Fairbault, Minnesota



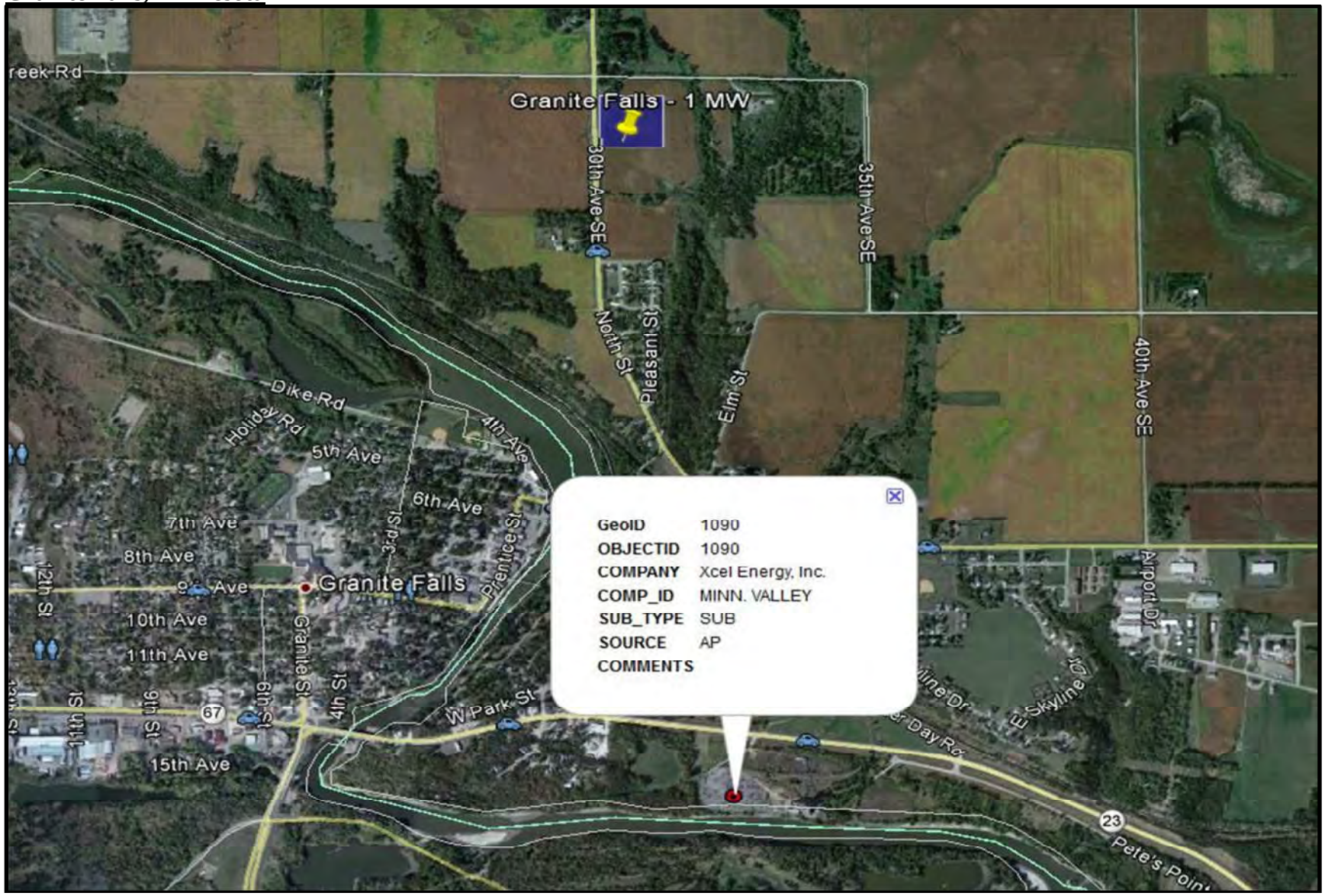
Franklin, Minnesota



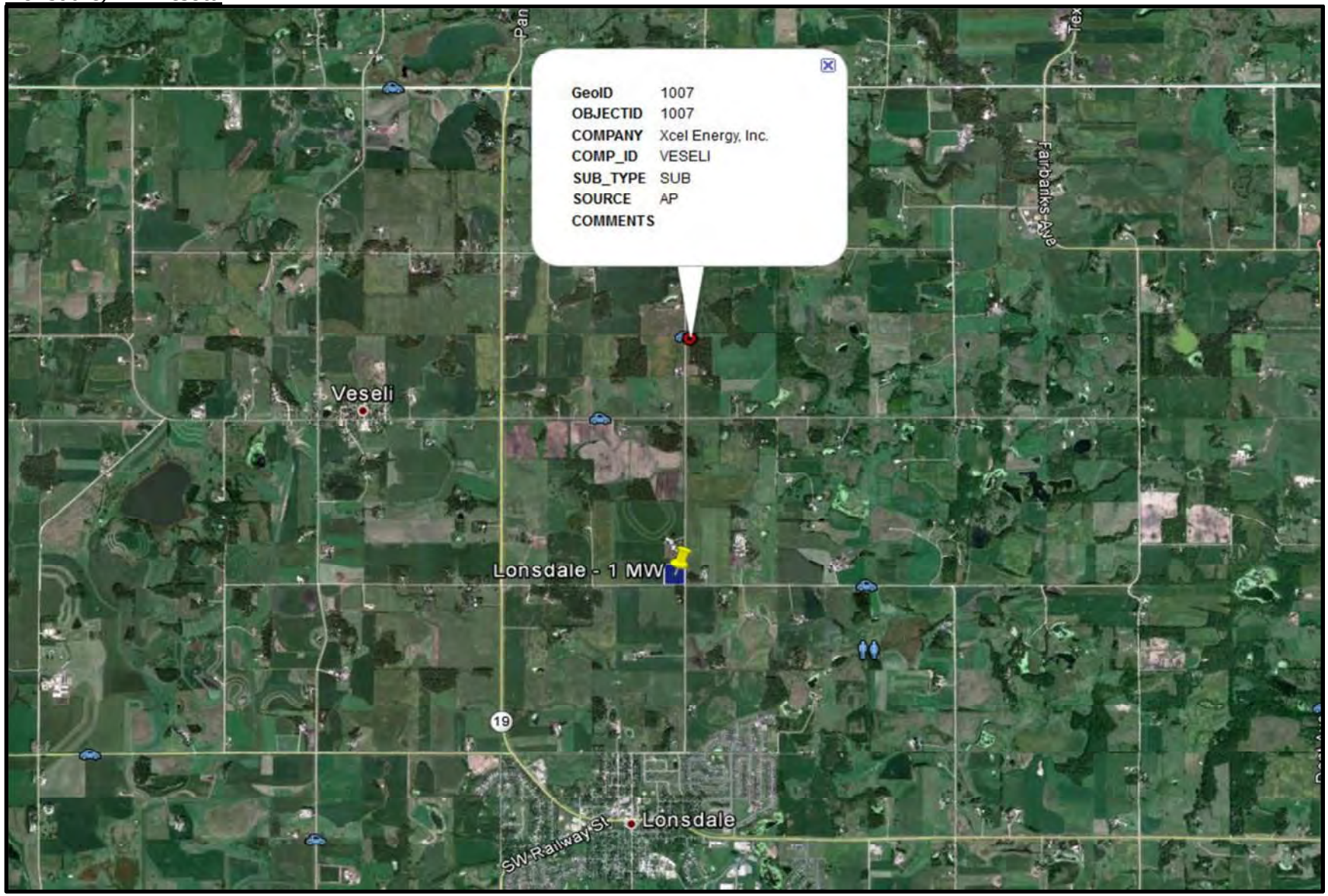
Gibson, Minnesota



Granite Falls, Minnesota

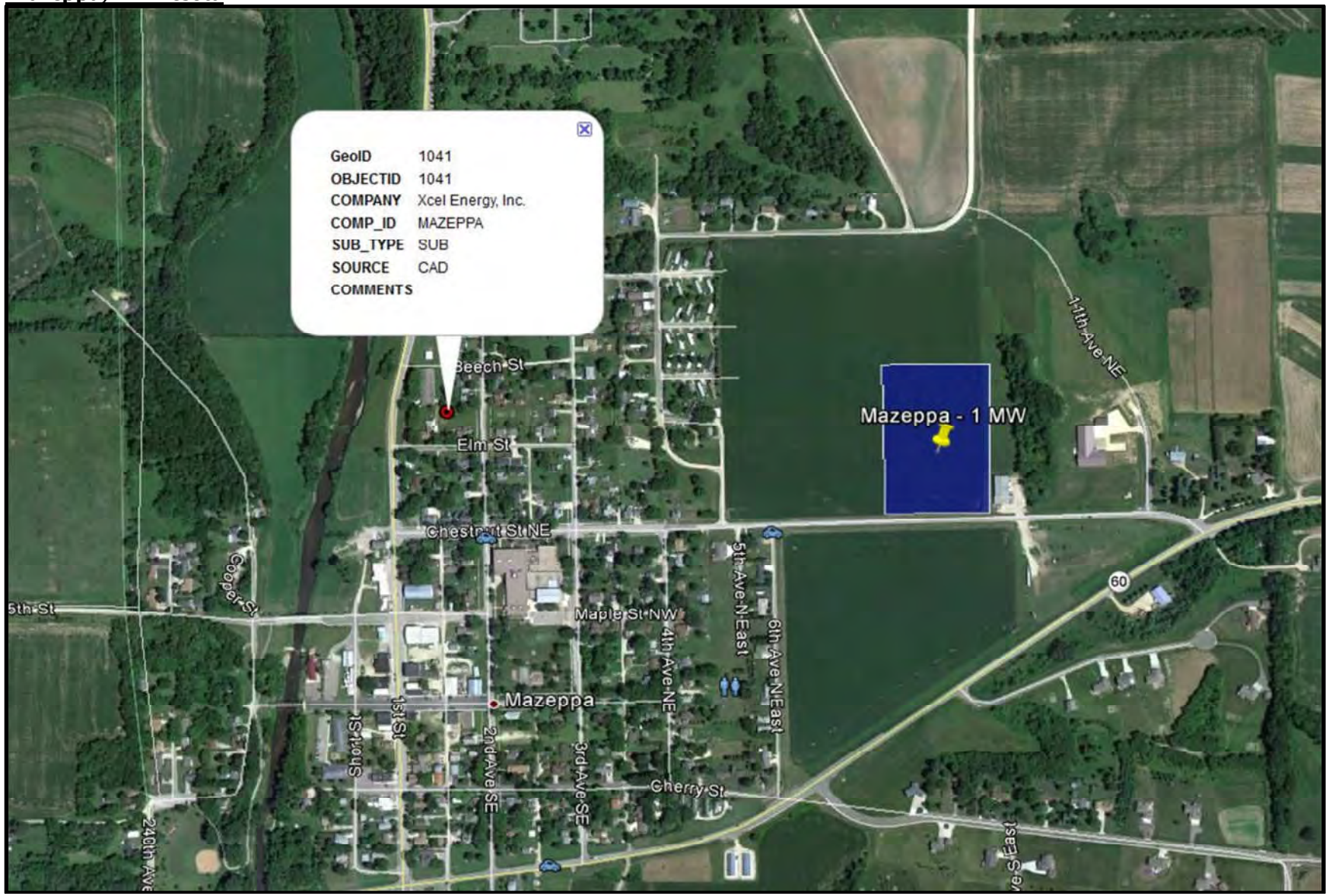


Lonsdale, Minnesota

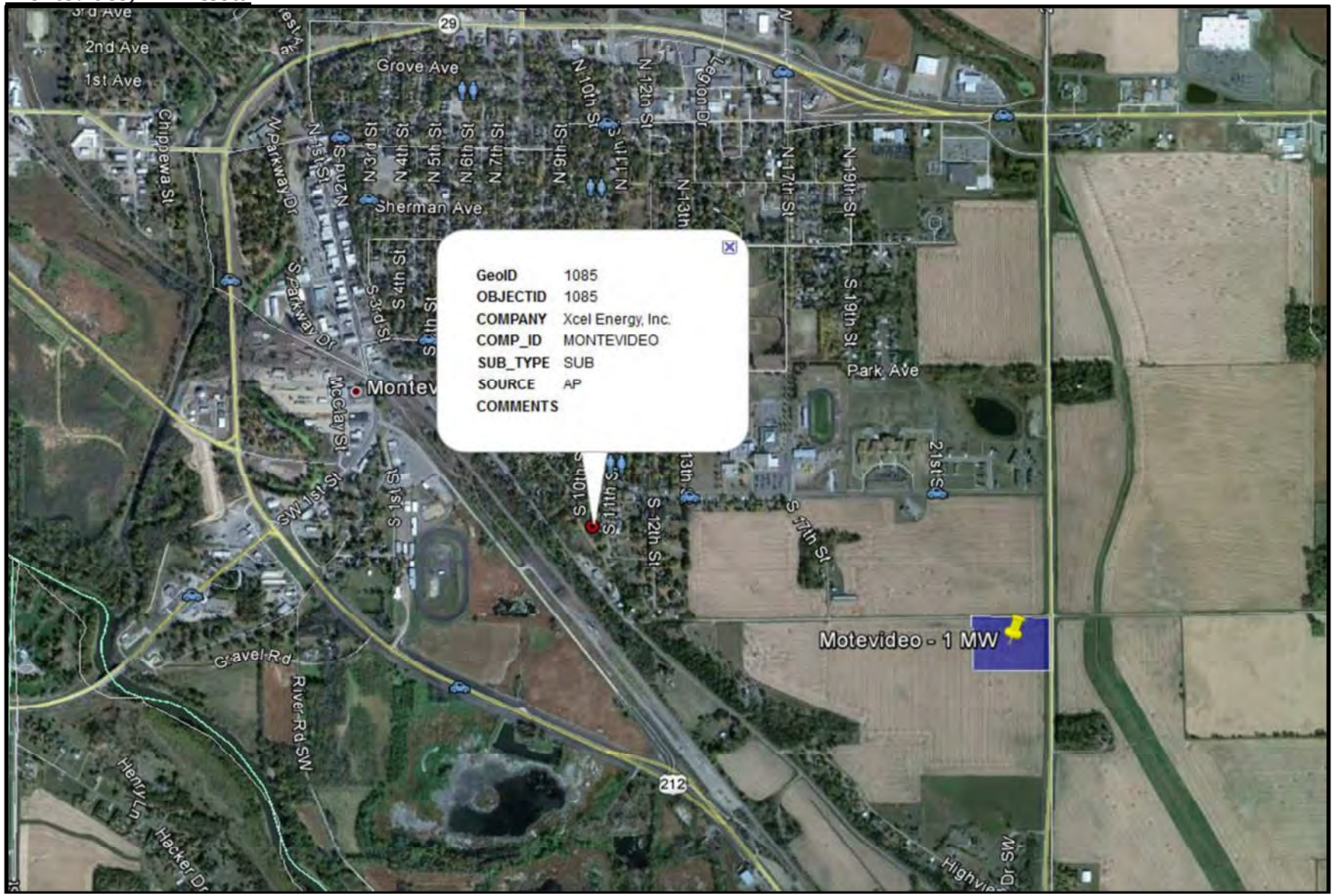


Mankato, Minnesota

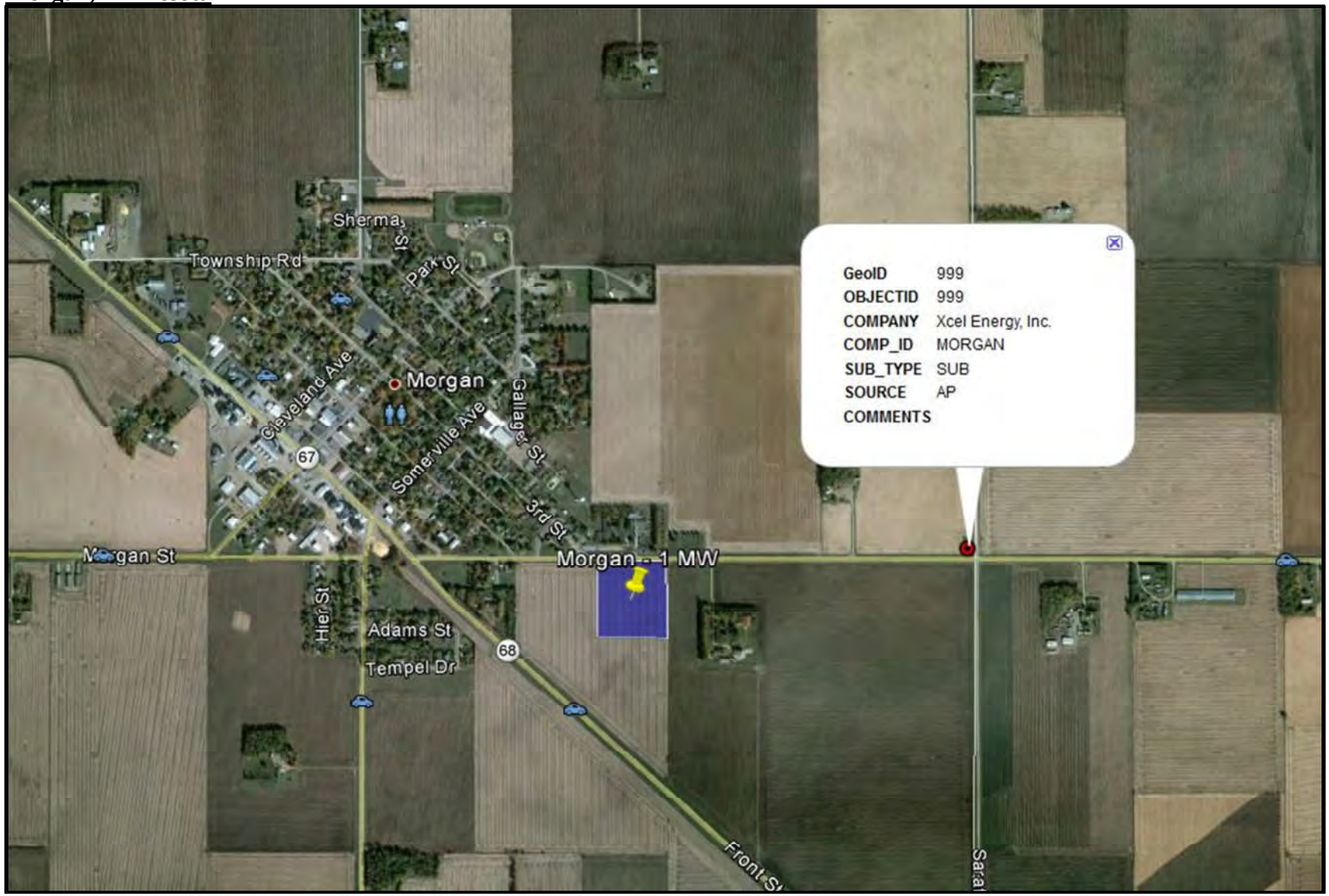
Mazeppa, Minnesota



Montevideo, Minnesota

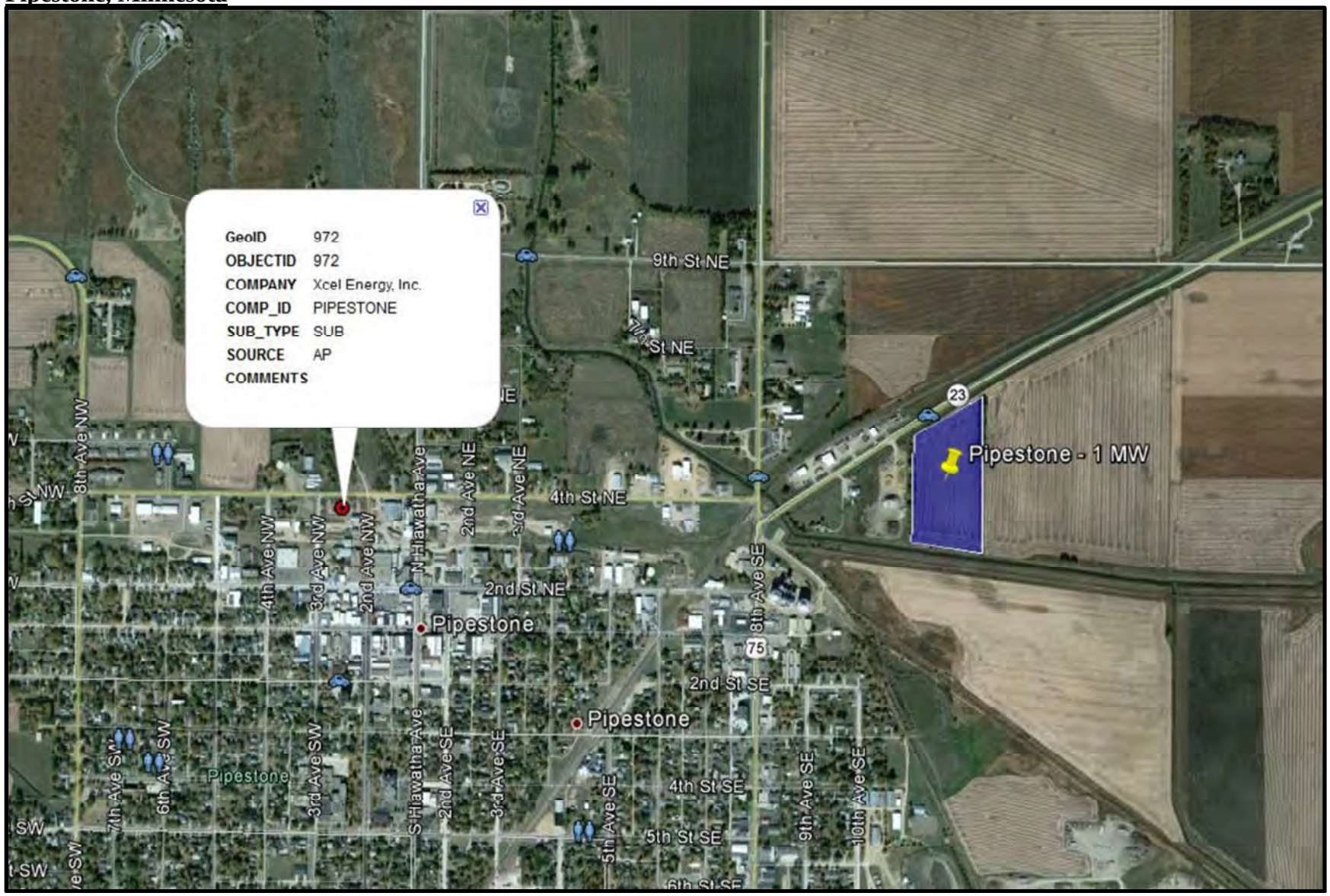


Morgan, Minnesota

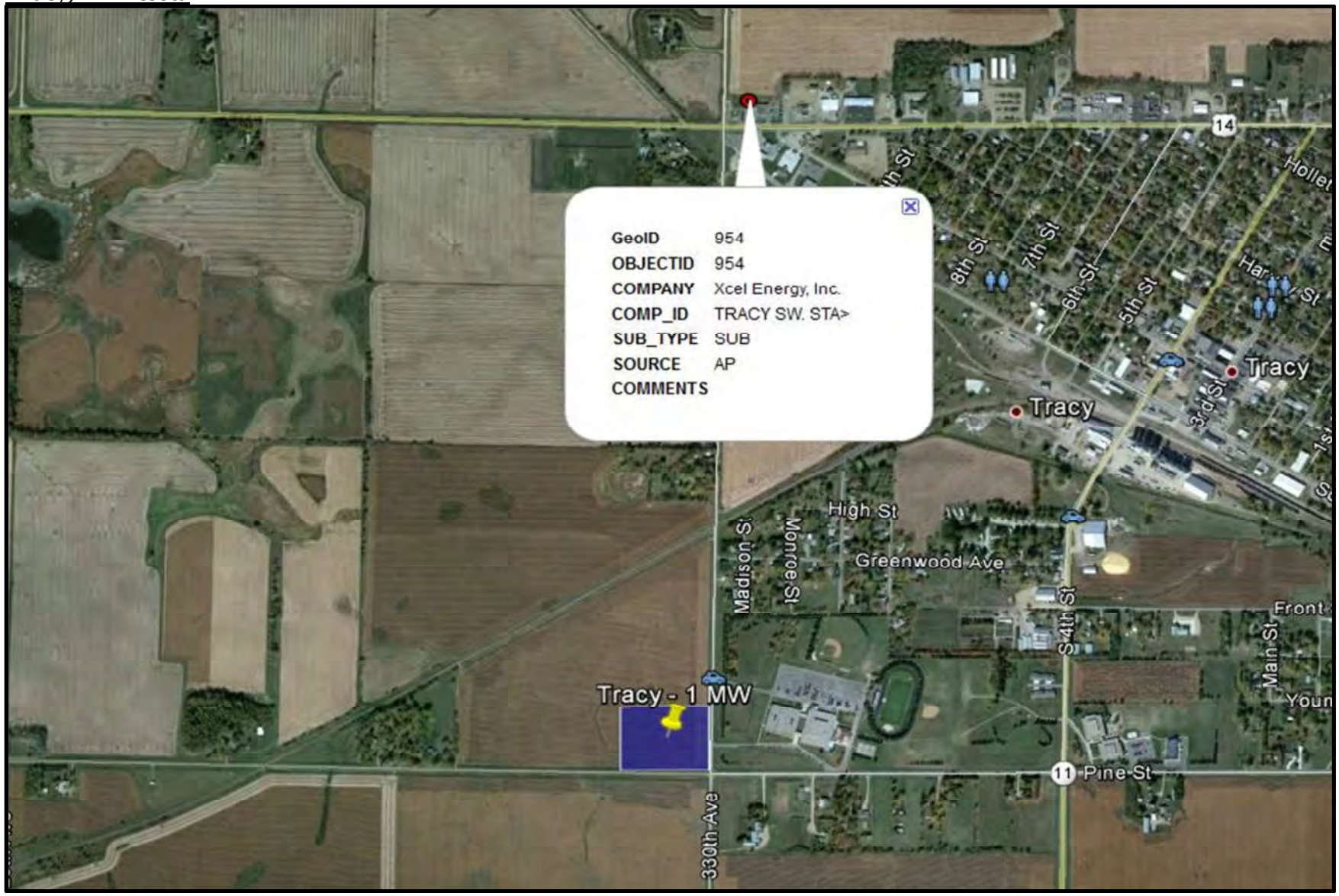


Pine Island, Minnesota

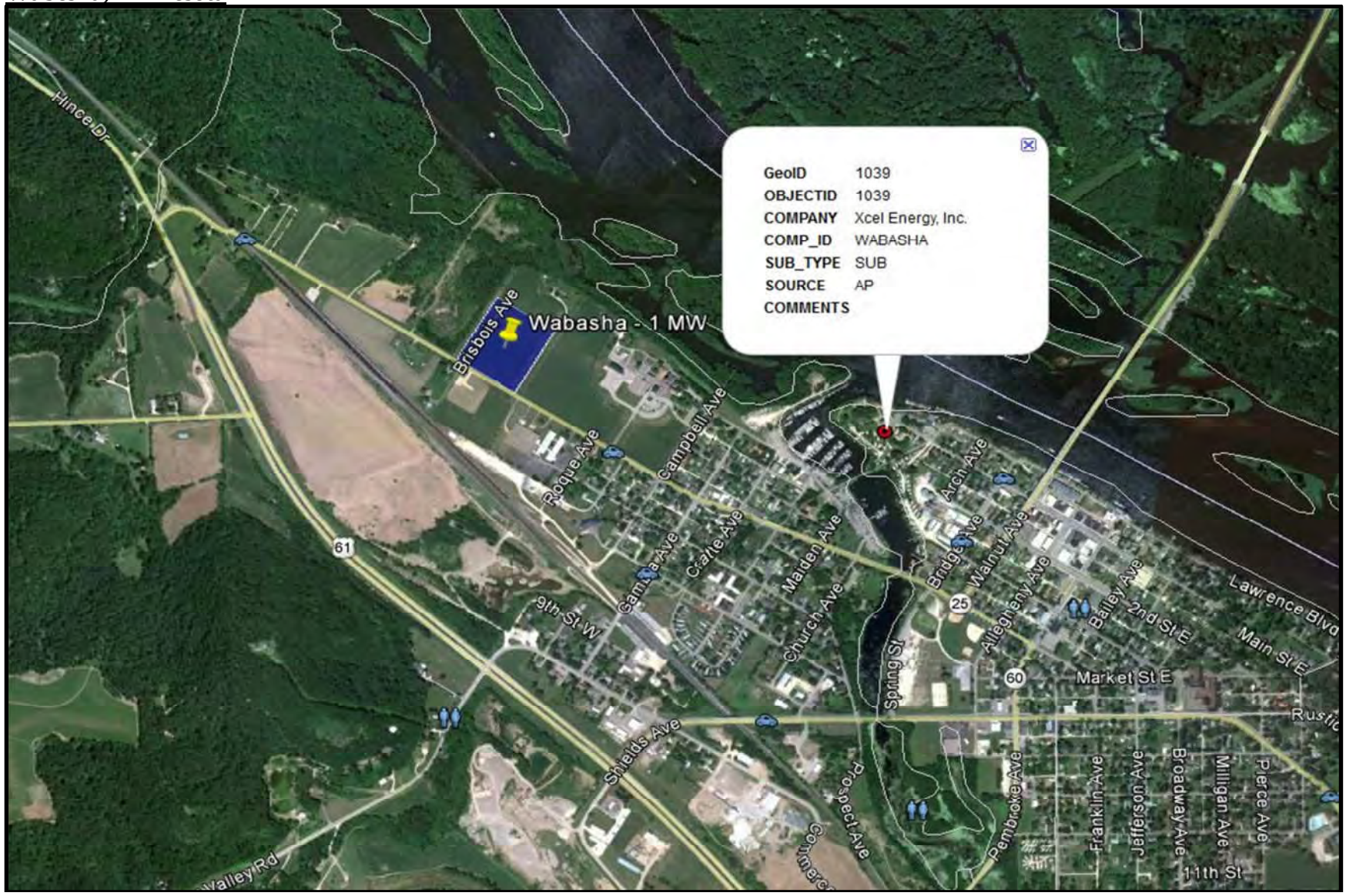
Pipestone, Minnesota



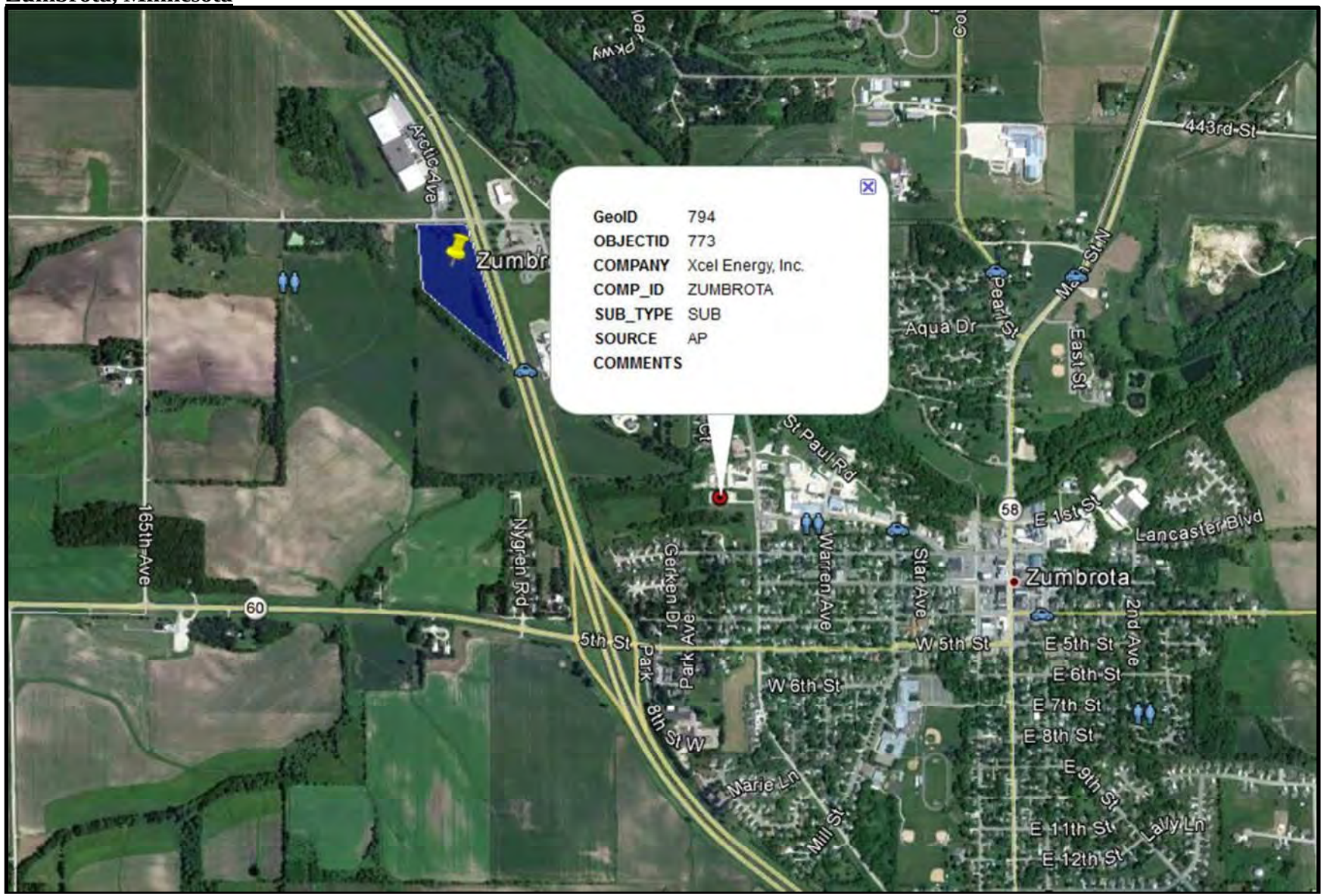
Tracy, Minnesota



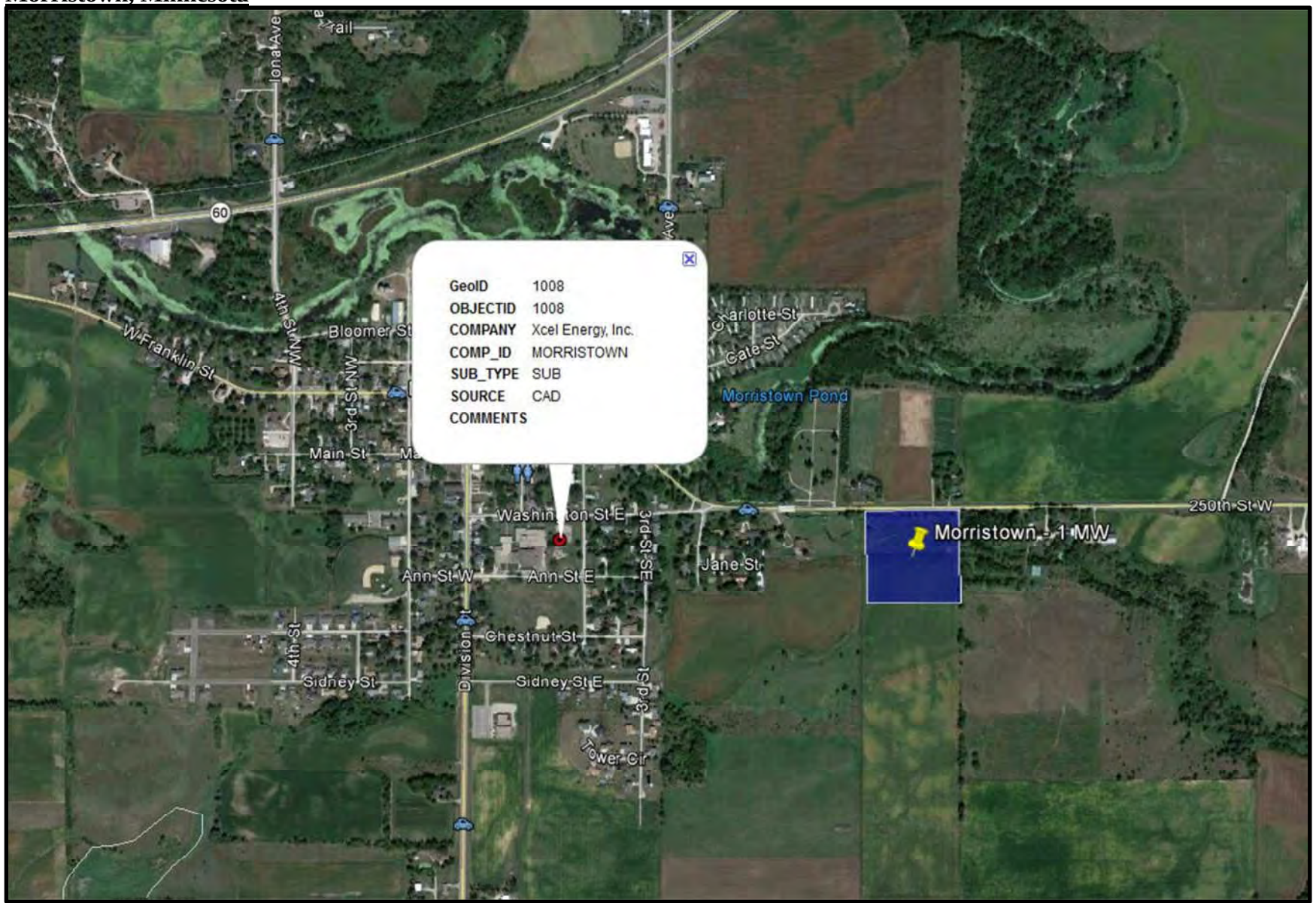
Wabesha, Minnesota



Zumbrota, Minnesota



Morristown, Minnesota



Northfield, Minnesota