STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

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April 1, 2016

In the Matter of the Petition of Northern States Power Company, dba Xcel Energy, for Approval of Its Proposed Community Solar Garden Program

PUC Docket No: E-002/M-13-867

COMMENTS BY THE UU COMMUNITY SOLAR COALITION

IN RESPONSE TO THE COMMISSION'S FEBRUARY 26, 2016 NOTICE

The UU Community Solar Coalition submits these Comments in response to Topics 3 and 4 of the Commission's February 26, 2016 Notice. The members of our Coalition are individuals from five Twin Cities churches who have arranged to make a Community Solar Garden available to serve the members, friends, and church facilities of our respective congregations, and to serve as a model for other faith communities. On behalf of our Coalition, I thank you for this opportunity to comment.

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TOPIC 3 QUESTION

3. What steps could the Commission take to ensure that CSGs are accessible to and benefit a broad cross-section of customers and customer classes?

TOPIC 3 DISCUSSION

A. **Community Solar Gardens (CSGs) need additional truth-in-advertising requirements to prevent loss of momentum due to loss of reputation among residential customers.** As long as CSGs maintain a good reputation within the potential subscriber population, they can play a significant role in helping Minnesota achieve the twin objectives of reducing toxic emissions (greenhouse gases, unhealthy pollutants) and creating job growth and the other economic benefits of a thriving clean energy industry. However, we are concerned that the marketing of CSGs to residential customers with claims of implausible savings may pose a significant reputational risk to the program and the State of Minnesota.

B. **The residential public is receiving CSG offers with savings projections based on electricity price inflation assumptions that are well above recent long-term historical levels.** CSG promotional materials focus on eye-popping savings. It is mathematically easy to generate savings in the range of $4,000 - $12,000 over the term of a CSG contract using a discounted subscription starting price, a higher-than-historical Xcel price inflation rate, and a somewhat lower subscription price escalation rate. Bill credit projections commonly assume electricity price inflation in the range of 2.75% - 4.0%. As discussed in paragraph 3.C, these inflation assumptions significantly exceed the long term historical price experience of Xcel and the region. Instead of competing on price, developers are competing on hypothetical savings that are difficult for the public to untangle or evaluate. Subscribers will realize the projected CSG savings only if electricity price inflation is significantly higher than historical levels.

C. **The public may not understand that total electricity costs with a CSG subscription may be higher – perhaps significantly higher – than without a subscription.** If electricity prices rise more slowly than projected, the CSG subscription price will rise faster than bill credits, and may cross over into extra costs. At that point a subscriber will begin paying more out of pocket than a non-subscribing neighbor for the same amount of electricity. Eventually the extra costs may exceed the total of earlier savings, at which point cumulative savings turn negative.

The table below illustrates four possible financial outcomes for a CSG subscription for a typical Xcel household using 675 kWh per month, assuming continuation of the ARR method. The initial price and escalation rate are derived from the average of two recent CSG offers in the Xcel residential market. Higher initial prices or escalation rates would result in less favorable outcomes. The inflation assumptions reflect historical Xcel and Midwest Urban electricity prices. The Bureau of Labor Statistics (BLS) Midwest Urban price per kWh data for 1979 to 2015 gives 25-year rolling average electricity price inflation ranging from 1.3% to 2.0%. In the example below, an inflation rate of 2.62% is required to avoid extra costs in every year of the hypothetical contract.

Average Monthly Usage: 675 kwh **Initial Price per kWh: $.1379** **Escalation Rate: 2.63%**	25-Year Electricity Price Inflation	25-Year Cumulative Savings (Cost)	Year One Monthly Savings (Cost)	Year 25 Monthly Savings (Cost)
Inflation rate required to keep saving money	2.62%	978	$6.28	0
Xcel residential $/kWh 1990-2015[1]	2.30%	($493)	$6.00	($11.06)
BLS Midwest Urban 25-Year High since 1979	2.00%	($1,805)	$5.74	($20.59)
BLS Midwest Urban 25-Year Low since 1979	1.30%	($4,629)	$5.14	($40.38)

[1]In a widely promulgated FAQ, Clean Energy Resource Teams states that Xcel has indicated ARR inflation across all customer classes at 2.6% to 2.9% since 1992. However, 1992 is the second of two deflationary years for Xcel, creating an abnormally low starting point. Xcel's residential prices increased from $.07168 in 1990 to $.12743 in 2015, yielding a 25-year inflation rate of 2.33%. Statewide, the 24-year residential increase was 2.4%. [Ref. 5]

Extra costs in later years may be acceptable to a subscriber who entered the contract for the purpose of emissions reduction, anticipated the financial outcome, and has a flexible budget. However, a subscriber who did not expect or cannot afford the extra costs and wants to terminate the contract may discover there is no viable exit route. Subscriber's typically must continue paying the subscription price for 25 years, or until they move out of the territory of the CSG, or until they pay a significant termination fee for breach of contract. Contract terms permitting a subscriber to transfer the contract to another party at low or no charge may become virtually worthless after the contract starts generating extra costs.

TOPIC 3 RECOMMENDATIONS

3.1. We recommend that the Commission establish additional truth-in-advertising requirements to ensure that subscribers have reasonable expectations about the financial performance of their CSG subscriptions, and a sound basis for comparing competing offers.

3.1.1. Require developers to prominently display a Rate Comparison message box showing the subscription price escalation rate and the most recent 25-year Xcel price inflation rate.

3.1.2. Require developers to provide or include a financial projection using a standard electricity price inflation assumption specified by the Commission, with appropriate caveats.

TOPIC 4 QUESTION

4. What steps could the Commission take to encourage developers to include low-income and minority subscribers in CSGs?

TOPIC 4 DISCUSSION

A. **The phrase 'Community Solar Garden' evokes a highly favorable image which is strengthened by a strong pervasive association with savings on electricity costs.** As a reality check, it helps to remember that a CSG is a large solar array in a field or on a flat rooftop, *not actually a garden;* that the solar output is energy for the grid, *not solar exclusively for my household;* that a CSG subscription is a speculative, long term contract to purchase credits for photovoltaic output, *not membership in a community;* and that savings are usually hypothetical, *not guaranteed*.

B. **A CSG subscription requires a potential subscriber to make a long term electricity price commitment.** As explained by Douglas G. Tiffany, "You are essentially being asked to select a path of known and predictable electrical price increases over 25 years. This may be favorable or unfavorable, depending upon the prices which Xcel ends up charging for power.... This concept is akin to buying a car and being able to lock in an initial price and a pattern of price increases of gasoline for the expected 15-year life of a new car. As consumers, we don't have much experience with pricing decisions over a long period of time...." [Ref. 5]

C. **The current generation of CSG subscriptions are not particularly attractive as financial products per se, but are highly attractive for individuals committed to emissions reduction.** A CSG subscription contract can be a suitable commitment for households with adequate income and enough savings to absorb extra expenses or fees. For a household able to sponsor additional clean energy for the grid, it may make little difference if the subscription turns out to be financially neutral or negative over its life. The significant social and environmental value of avoided carbon may far outweigh any negative impact for that subscriber's wallet.

D. **Households who are struggling financially are not well-served by the current generation of CSG contracts, which provide no guarantee and slight likelihood of long-term savings.** For individuals who are struggling financially and want to save a few dollars each month, the seasonally uneven cash flows, potential transfer or exit fees, and the long-term risk of extra costs make a CSG contract unsuitable. If an extra $5 - $40 in savings or expenses each month truly matters, the subscriber may regret the decision later on.

E. **An individual's ineligibility for a CSG subscription due to their credit score can be beneficial.** We are concerned that the advertised savings potential of CSG subscriptions has made low income individuals or families who do not meet the FICO score requirements feel they are being left out of something that could help them financially, a concern often shared by social justice advocates. Out of the same concern for social justice, and with personal experience of tight budgets, and having examined the current generation of contracts as financial instruments, we reached a different conclusion. For individuals already having difficulty paying their bills, we see a significant financial risk inherent in locking into a 25-year electricity price contract. The FICO credit score requirements provide financially-distressed households a useful barrier against what might otherwise be a regrettable financial commitment made with expectation of lower electricity costs.

F. **Subscription prices can, in theory, be designed to float at a specified percentage below current electricity prices, thus offering guaranteed savings, however the availability of financing for projects with floating subscription prices has evaporated due to the perceived likelihood of slowed electricity price inflation.** Subscription contracts with floating prices can

be eminently suitable for low income subscribers. The continued savings would help minimize subscriber defaults. Ongoing savings eliminate the savings-to-cost crossover point and the *obvious risk of mass defaults* at that point in time when multiple subscribers simultaneously realize their subscriptions are becoming increasingly expensive. Financing such contracts will almost certainly require a combination of public and private sources, because the risk of energy price deflation and/or slowed energy price inflation – attended by reduced revenue from subscription payments – falls entirely on solar developers and their financiers.

G. **The key benefits of Community Solar Gardens accrue to nonsubscribers as well as to subscribers, and those benefits will increase as policies, programs and the marketplace align to expand the reach of solar.** Time is of the essence in the matter of emissions reduction. Community solar has the potential to give wings to this transition. Households who are not subscribers still do benefit from cleaner air, a less disrupted climate, and the additional jobs. Reduced emissions anywhere reduce emissions everywhere. Solar investments anywhere bring down solar prices everywhere. These simple facts attest to the inherent social justice of all clean energy.

H. Effective solutions to extend solar options into lower income neighborhoods at scale will require coordination and involvement of multiple federal, state and local governmental resources, and a thriving solar industry. CSG developers in the Twin Cities are not yet attracted to the general residential market in great numbers, as most prefer to seek a few large subscribers instead of many small ones. Customer acquisition is expensive, and expanding the general residential CSG market is a challenge in itself. Extending CSGs or other clean energy solutions for low income people at a meaningful scale presents additional challenges some of which are beyond the scope of the community solar program, beyond the exclusive purview of the Public Utilities Commission, and well beyond our expertise as authors of these comments. However, clean energy solutions in some form must eventually include everyone.

TOPIC 4 RECOMMENDATIONS

We recommend that the Commission and/or the State of Minnesota:

4.1. Take no special steps to encourage developers to include more low-income subscribers in CSGs unless savings are guaranteed and the program design is state of the art.

4.1.1. CSG programs designed for low income participants should guarantee savings or at least provide protection against extra costs. Most of the current generation of CSG contracts are largely unsuitable for low income subscribers, especially those with below average FICO scores, due to the substantial risk of extra electricity costs for those households over time.

4.1.2. All stakeholders and policymakers need time to consider the new helpful body of literature that offers extensive policy guidance on how best to bridge the solar income gap. We provide a list of key references and sources on page 10 of these comments. The list includes low-income solar policy guidelines and model provisions for shared renewable energy published in March 2016.

4.2. Consider that low-income households and neighborhoods may be better served by clean energy solutions other than CSGs.

4.2.1. Windsource is accessible and flexible, and may be less expensive than a CSG over time.

4.2.2. Distributed grid-connected on-site-solar-with-storage is arguably the gold standard for clean and reliable energy to protect vulnerable populations. [Ref. 1]

4.3. Consider adopting or adapting guiding principles for low income solar programs set forth in the March 2016 Low-Income Solar Policy Guide (shown here on page 9) along with the guidelines we call out below when designing steps, if any, to encourage developers to include more low-income subscribers in CSGs.

4.3.1. Require that CSG programs designed for low-income households provide *guaranteed savings* throughout the term of the contract. It seems inappropriate to incentivize developers to put low income households into contracts that could easily become a financial trap for those households. [Ref. 8, p.11, Principles 1 and 3]

4.3.2. Ensure there are existing public funding mechanisms (such as a yet-to-be-established Minnesota Green Bank) that can leverage large amounts of private financing for

installation of onsite/rooftop solar, shared solar, and/or community solar at scale for under-served markets. All of the pertinent references (see page 10) state that public-private financing arrangements are essential for bridging the solar income gap. Such arrangements will be essential to finance, at scale, the availability of CSGs with guaranteed savings. [Ref. 1,2,3,4,6,7,8,9]

4.3.3. Require solutions for low income households or neighborhoods to be additive to general renewable energy programs, and not undermine or complicate existing programs. For example, avoid making low income carve-outs mandatory for all CSGs. [Ref. 8, p.11]

4.3.4. Require efficiency in program design to control costs for low income CSGs. For example, avoid program designs with costly, invasive administrative requirements such as annual re-verification of participant income status. [Ref. 9, p.39, II. m.]

4.3.5. Foster integration of CSGs or other affordable renewable energy offerings with existing energy assistance (such as the Low-Income Home Energy Assistance Program) and energy efficiency or other retrofitting opportunities (such as the Weatherization Assistance Program) available to low income households. [Ref. 3,4,6,7,8,9]

End of Comment

GUIDING PRINCIPLES FOR LOW-INCOME SOLAR PROGRAMS

1. **Accessibility and Affordability.** An effective low-income solar program combines opportunities to participate with real financial benefits through a combination of deep energy cost savings and direct support to overcome some of the financial and other challenges to access.

2. **Community Engagement.** A successful program requires partnership with communities through local partners such as community development corporations, housing organizations or other service providers to ensure that community needs and challenges are addressed and assets utilized. These partners can provide critical outreach, planning support, and engagement with low-income communities. Putting communities at the center ensures that programs are responsive and effective and helps maximize participation.

3. **Consumer Protection.** Programs should not create incentives for predatory lending or exploitation of communities for financial gain. Programs should have adequate consumer protection measures, disclosures, and accountability measures to ensure that financially vulnerable customers are not taken advantage of or otherwise compromised.

4. **Sustainability and Flexibility.** A successful low-income solar program must encourage long-term market development and be flexible in order to best serve the unique low-income market segment over time and as conditions and circumstances change.

5. **Compatibility and Integration.** Low-income solar programs and policies should be additive to existing renewable energy and energy efficiency programs, not undermine them. They should also integrate well with synergistic programs, such as low-income energy efficiency, workforce development, healthy home programs and others that address the intersection of equity, energy and infrastructure.

Source: Low-Income Solar Policy Guide, March 2016, Page 11
http://www.lowincomesolar.org/wp-content/uploads/2016/03/Low-Income-Solar-Policy-Guide_3.11.16.pdf

References and Selected Sources for Bridging the Solar Income Gap

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3 **State Policies to Increase Low-Income Communities' Access to Solar Power**. Ben Bovarnick and Darryl Banks. Center for American Progress. September 2014. 11p.
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4 **Bridging the Solar Income Gap.** James A. Mueller and Amit Ronen. GW Solar Institute. The George Washington University. January 2015. 17p.
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8 **Low-Income Solar Policy Guide.** Ericka Mackie of GRID Alternatives, Adam Browning of Vote Solar, and Glenn Harris of the Center for Social Inclusion. March 2016. 52p.
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9 **Shared Renewable Energy for Low- to Moderate-Income Consumers: Policy Guidelines and Model Provisions.** Interstate Renewable Energy Council. March 2016. 63p.
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