

November 22, 2004

John Campbell
NorthWestern Energy
E+ renewable energy programs
40 East Broadway
Butte, MT. 59701

Dear Mr. Campbell:

Western Skys Ltd. Co., dba StrawHouse Market a Natural Food retailer with full service deli and coffee shop. Is submitting the accompanying proposal to you in response to NorthWestern Energy's RFP entitled *New Distributed Renewable Resources*. This proposal details Western Skys' request for Universal System Benefits Charge funds on a cost-sharing basis for the purpose of installing a 12.692 kW-rated building integrated photovoltaic array and for initial costs associated with Western Skys' innovative-energy public outreach program.

Specifically, the total capital outlay for the project is:

Photovoltaic array	
Equipment	\$ 81,224
Architectural Site Specific Installation of Mounting System....	11,750
PV Panels, Inverters and Electrical installation	12,475
Design	7,965
Total Photovoltaic array	\$ <u>113,414</u>
Year-1 public outreach program	
On-site permanent interpretive installation	2,500
On-site interpretive materials — handouts	1,000
On-site presentations — staff time.....	2,500
Website development	2,000
Maintenance Year-1	2,000
Total Year-1 outreach	\$ <u>10,000</u>
Total capital outlay.....	\$ <u>123,414</u>

Western Skys proposes a cost-sharing ratio with NorthWestern of 1:1, bringing the amount of this request for USBC funds to \$61,707 to be matched with an equal amount from Western Skys.

Background information on the StrawHouse Market development is available online at <http://www.strawhousemarket.com/>.

You will find attached an Interconnection Agreement executed by Western Skys as required in the RFP.

Sincerely,

Dirk Ellis, Managing Member
Western Skys Ltd. Co.

Attachments:

Specifications for USBC Funded Renewable Energy Projects

Exhibit B: Project Costs

Exhibit C: Energy Production

Interconnection Agreement for Customer-Owned, Grid-Connected Electric Generating Facilities of 50 Kilowatts or Less Peak Generating Capacity (Revised March, 2003)

SPECIFICATIONS FOR USBC FUNDED RENEWABLE ENERGY PROJECTS

- 1. Project Description:** Building Integrated Photovoltaic Array
- 2. Project Location:** StrawHouse Market Natural Food Store, Deli & Organic Coffee Roaster
1050 Road Runner Drive, Helena, MT 59601
- 3. Hardware:** \$81,224 (see Exhibit B)
- 4. Design Costs:** \$7,965 (see Exhibit B)
- 5. Labor Costs:** \$24,225 (see Exhibit B)
- 6. Design Consultants:**
 - Oasis Montana Inc., Dan Healy Systems Engineer, NABCEP Certified Installer
436 Red Fox Lane, Stevensville, MT 59870
406.961.4878
 - James Cooke, Environmental Response Consulting
302 12th Street SW, Albuquerque, NM 87102
505.301.8533
 - Odisea, Jeff Ruppert, principal
Structural, Civil Engineering and Urban Planning, Ecological Building Design and Construction
2241 17th Street, Boulder, CO 80302
303.443.4335
 - Crossman Whitney Griffin P.C. Architects, Tony Perpignano AIA, Project Architect
650 Power Street, Helena, MT 59601
406.443.2340
 - Ames Engineering, LLC, Susan H. Ames, P.E.
5660 Falcon Road, Helena, MT 59602
406.458.0494
- 7. Outreach Program:** Western Skies Ltd. Co., developer and operator of The StrawHouse Market, StrawHouse projects customer traffic of 96,732 annually. StrawHouse will extend regularly scheduled invitations for on-site visits to K-12 schools throughout the Helena region. Such visits will emphasize through presentations and interpretive materials the photovoltaic array and its central role in the environmentally responsive building components. Each year, faculty at the School of Architecture at Montana State and the engineering disciplines at Montana Tech and Carroll College will be invited to encourage their students to participate in ongoing building and site systems performance monitoring as well as critical design analysis projects. An ongoing workshop program for practitioners, contractors, and designers has already been launched and an interpretive website (<http://www.strawhousemarket.com/>) was inaugurated in June of 2004.
- 8. Expected cost of Outreach Program:** Start-up costs for the website total \$2,000 with annual content and design maintenance projected at \$2,000. Initial design and development of on-site interpretive materials is projected at \$2,500. Annual reproduction cost for interpretive handouts is anticipated to be \$1,000. Staff time devoted to guided tours each year is expected to require 75 to 100 hours at \$25 per, or \$1,875 to \$2,500.
- 9. Nameplate capacity of renewable generation source:** 12.692 kW
- 10. Expected energy to be generated over project life:** 453,204 kWh (see Exhibit C)
- 11. Expected project life:** 25 years (see Exhibit C)
- 12. Alternative source of electric generation:** Northwestern Energy Electric
- 13. Siting & Orientation:** Building integrated, fixed tilt @ 45.0°, azimuth @ 180.0° (see Exhibit C)
- 14. Benefits in addition to generated energy and capacity:** The StrawHouse Market project incorporates a thoroughly integrated approach to site, climate, and resource conservation. Moreover, it constitutes an unprecedented sensitivity to environmental issues within the small-scale commercial retail sector. It has already attracted the attention of design and engineering professionals throughout the Western U.S. as evidenced by devices voluntarily embedded in the structure itself by some of those professionals to gather long-term data on the building's

performance. When this professional awareness is coupled with the project's location in the State's capitol city as well as its potential for exposure to a broad segment of the population as a retail market, its power to educate both practitioners and the buying public is significantly magnified. Western Skys' outreach program will serve to make StrawHouse Market a potent tool for effecting the market transformation necessary to a sustainable future in Montana and the West.

- 15. Customer group:** Commercial, Residential, General Public, Consumers, Educational Institutions, Professional Services such as design, application and installation groups.
- 16. Environmental impact:** The building integrated array eliminates any land use burden and complements a thoughtful architectural response to retail marketing. Energy embodied during the manufacture of the PV components is eclipsed by solar-source power generated within three years. The solar-source power generated annually (25-year average) avoids the release of 21,210 pounds of CO₂ from conventional Montana hydro and coal power generation.
- 17. Maintenance requirement:** The PV panels are easily accessible for routine inspection and cleaning if required. Related components (conduit, conductors, inverters and the like) have no maintenance requirement across utility half-lives expected to well exceed the 25 years projected here. The system is equipped with counterpoise grounding.
- 18. Sources of funding to assure expected life of system:** The Kyocera panels are warranted for 25 years to maintain power generation of at least 80% of rated capacity. The unique lower array mounting system is integrated into the structure of the building and therefore is maintained under the life of the building. Any related components failing beyond warranty will be adsorbed in the capital replacement operating budget of StrawHouse. StrawHouse will maintain customary insurance coverage for accidental or force-of-nature events.
- 19. Monitoring and verification:** The specified inverters are equipped with digital read-out monitoring panels. Those monitoring panels are connected to a central control unit which, in turn, will supply kWh generation data to a public digital display both on site and at the website. In addition, the website will track actual net-metered consumption, power consumption avoided, and green house gas avoidance. The goal in both venues will be to provide information in graphic and narrative form to meet the needs of the broadest segment of the population possible.
- 20. Yes, this project is grid-tied and will be used to supply electric power to Northwestern Energy customers.**
- 21. Net metering:** The system specified here (see Exhibit B) is provisioned with grid-tie inverters, meter, and automatic disconnect.
- 22. Yes, this project requires net metering.**

EQUIPMENT

Oasis Montana (PV Array & associated Equipment)

76 Kyocera KC167G 16V 167W solar modules @ \$626 ea.....	\$ 47,576
4 30' Multi-Contact (MC) cable assembly sets @ \$35 ea.	140
1 46' Multi-Contact (MC) cable assembly set	55
1 82' Multi-Contact (MC) cable assembly set	85
2 outdoor rated junction boxes with terminal strips @ \$150 ea.....	300
5 Outback PSSB segmenting breaker assemblies @ \$196 ea.	980
5 Outback PSSB-MP mounting plate for PSSB & Sunny Boy inverter @ \$80 ea.	400
5 SMA Sunny Boy 2500U-208 grid-tie inverters @ \$2,315 ea.	11,575
5 SMA SBSL cover lids for Sunny Boy inverters @ \$120 ea.	600
5 SMA SB RS-485-N RS-485 modules for Sunny Boy inverters @ \$148 ea.	740
1 SMA SBC-485 Sunny Boy Control unit.....	1,069
100' of RS-485 cable to connect all 5 Sunny Boy inverters to the SBC-485.....	100
1 Square-D 100A 3-pole outdoor rated disconnect	817
1 solar array grounding kit	
(1,000' of #10 AWG copper grounding wire & 100 grounding lugs)	300
2,000' #8 AWG single conductor copper wire @ 65¢ per foot.....	<u>1,300</u>
Equipment total.....	66,037
Freight.....	<u>800</u>
Total.....	\$ <u>66,837</u>

Direct Power and Water (Rack mounting of the upper arrays @ east and west end)

6 Custom TT-RGM6-KC167-OP-45 deg @ \$682.00 ea.	
Two-Tier Roof Ground Mount to hold 6 Kyocera 167 watt modules in Landscape mode; angle adjusted for 1:12 pitch	4,092
1 Custom TT-RGM8-KC167-OP-45 deg	
Two-Tier Roof Ground Mount to hold 8 Kyocera 167 watt modules in Landscape mode; angle adjusted for 1:12 pitch	815
Equipment total.....	4,907
Contingency ¶ @ 5%.....	245
Freight.....	<u>250</u>
Total.....	\$ <u>5,157</u>

Northside Welding and Fabrication (Materials and fabrication of array mounting

brackets, array rack, and hardware as per Sheet S6)	\$ 8,790
Contingency ¶ @ 5%.....	<u>440</u>
Total.....	\$ <u>9,230</u>
Total Equipment	\$ <u>81,224</u>

LABOR

Installation of array mounting brackets and rack on building for panel Install.....	\$ 11,750
Installation (PV panels & associated materials)	7,200
Labor and installation, conduit and misc. hardware	\$ <u>5,275</u>
Total Labor	\$ <u>24,225</u>

¶ Allowance for recent volatility in structural steel prices.

DESIGN

Billing directly related to PV array	
James Cooke (Array integration & modeling)	2,500
Odisea (Structural Engineering).....	1,950
CWG Architects (Construction Documents & Permitting)	1,280
Ames Electrical Engineering (Integration of array electrical design; EsGil, the City of Helena and NorthWestern Energy's specifications and requirements)	\$ <u>2,235</u>
Total Design	\$ <u>7,965</u>
TOTAL PROJECT COST	\$ <u>113,414</u>

ENERGY PRODUCTION

76 Kyocera KC167G 16V 167W solar modules warranted for 25 years to maintain output @ 80% of rated.

Assume: 20% linear regression in output over 25 years with Year 1 @ 100%

PV WATTS CALCULATION

Station Identification	
City	Helena
State:	MT
Latitude:	46.60° N
Longitude:	112.00° W
Elevation:	1188 m
PV System Specifications	
AC Rating:	12.7 kW
Array Type:	Fixed Tilt
Array Tilt :	45.0°
Array Azimuth:	180.0°

YEAR ONE

Month	kWh
1	1106
2	1281
3	1951
4	1823
5	1970
6	1947
7	2299
8	2136
9	1892
10	1662
11	1185
12	970
Year	20222

25 YEAR OUTPUT

Year	kWh	Output %
1	20,222	100.00%
2	20,035	99.07%
3	19,850	98.16%
4	19,666	97.25%
5	19,484	96.35%
6	19,304	95.46%
7	19,125	94.58%
8	18,948	93.70%
9	18,773	92.83%
10	18,599	91.97%
11	18,427	91.12%
12	18,256	90.28%
13	18,087	89.44%
14	17,920	88.62%
15	17,754	87.80%
16	17,590	86.98%
17	17,427	86.18%
18	17,266	85.38%
19	17,106	84.59%
20	16,948	83.81%
21	16,791	83.03%
22	16,636	82.27%
23	16,482	81.50%
24	16,329	80.75%
25	16,178	80.00%
	Total	Avg.
	453,204	89.65%

NorthWestern Energy

INTERCONNECTION AGREEMENT

FOR CUSTOMER-OWNED, GRID-CONNECTED

ELECTRIC GENERATING FACILITIES

OF

50 KILOWATTS OR LESS PEAK GENERATING CAPACITY

Revised March, 2003

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
1.	APPLICABILITY	3
2.	DESCRIPTION OF ELECTRIC GENERATING FACILITY	3
3.	INTERRUPTION OR REDUCTION OF DELIVERIES	3
4.	INTERCONNECTION	4
5.	DESIGN REQUIREMENTS	5
6.	MAINTENANCE AND PERMITS	5
7.	ACCESS TO PREMISES	5
8.	RENEWABLE ENERGY CERTIFICATES	5
9.	INDEMNITY AND LIABILITY	5
10.	INSURANCE	6
11.	GOVERNING LAW	6
12.	AMENDMENTS, MODIFICATIONS OR WAIVER	6
13.	NOTICES	7
14.	TERM OF AGREEMENT	7
15.	ENTIRE AGREEMENT	7
16.	NO THIRD PARTY BENEFICIARY	7
17.	NO ASSIGNMENT; BINDING EFFECT	8
18.	HEADINGS	8
19.	SEVERABILITY	8
20.	SIGNATURES	8
	EXHIBIT A	2 Pages

NET METERING AGREEMENT

This Interconnection Agreement for Net Energy Metering ("Agreement") is entered into by and between Western Skys Ltd. Co. dba StrawHouse Market ("Customer"), and NorthWestern Energy, a division of NorthWestern Corporation (NWE or NorthWestern Energy) sometimes also referred to in this Agreement jointly as "Parties" or individually as "Party."

1. APPLICABILITY

This Agreement applies only to NWE distribution customers who are utility customers in good standing.

2. DESCRIPTION OF CUSTOMER'S SOLAR, WIND, HYDROELECTRIC OR FUEL CELL ELECTRIC GENERATING FACILITY (CUSTOMER FACILITY)

2.1 Customer has elected to interconnect and operate its electric generating facility (Customer Facility) in parallel with NWE's Montana electric distribution system.

2.2 Customer Facility must be built with the following ratings, which shall not be changed without 30 days advance written notice to NWE according to the notice requirements herein:
Photovoltaic/Solar ("PV") Array Rating: 12.692 kW

2.3 Customer Facility Location:

StrawHouse Market
1050 Road Runner Drive
Helena, MT 59601

2.4 Customer's NWE Electric Account Number: 1275779-5, Customer No: 1041470

2.5 Customer Facility will be ready for operation on or about: Mid February 2005

3. INTERRUPTION OR REDUCTION OF DELIVERIES

3.1 NWE shall not be obligated to accept or pay for and may require Customer to interrupt or reduce deliveries of available energy (a) when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any NWE equipment or part of the NWE system, or (b) if it determines that curtailment, interruption, or reduction is necessary because of emergencies, forced outages, force majeure or compliance with any electrical code or standard.

3.2 Whenever possible, NWE shall give Customer reasonable notice of the possibility that interruption or reduction of deliveries may be required.

3.3 Despite any other provision of this Agreement, without liability, if at any time NWE determines that either (a) the Customer Facility, or its operation, may endanger NorthWestern Energy personnel, or (b) the continued operation of Customer Facility may endanger the integrity of NorthWestern Energy's electric system, NWE shall have the right to disconnect Customer Facility from NorthWestern Energy's system. Customer Facility shall remain disconnected until such time as NorthWestern Energy is satisfied that the condition(s) referenced in (a) or (b) of this Section 3.3 have been corrected.

4. INTERCONNECTION

- 4.1 Customer shall deliver the available energy to NWE at the energy (kwh) meter located on the Customer's premises.
- 4.2 Customer shall not commence parallel operation of the Customer Facility until the following conditions (4.3 or 4.4) are met. In no case will NWE provide any credit for customer generation done before the installation of the net meter. NWE shall install the required meter within ten (10) working days from the customer notification. Such installation shall not be unreasonably withheld.
- 4.3 In the case where the generator control is accomplished by a static inverter as described in the NWE Net Metering Requirements for Grid Connection of Renewable Resources (attached hereto as Exhibit A), the installation must be inspected and passed by the appropriate state or city electrical inspector and this net metering agreement must be fully executed and returned to NWE. Customer shall notify NWE that the inspection has been completed and passed.
- 4.4 In the case where the generator control is accomplished by means other than a static inverter as described in the NWE Net Metering Requirements for Grid Connection of Renewable Resources (attached hereto as Exhibit A), NWE must pre-approve the project interconnection. NWE strongly recommends the pre-approval be obtained before facility construction begins. Customer should provide facility and interconnection information to NWE as early in the design process as possible, and provide NWE with any project time constraints.
- 4.5 Customer shall bear all costs for any meter installation, inspection by NWE, and any costs for unusual metering required. Customer shall pay meter reading costs. Customer shall pay all costs associated with necessary distribution system modifications directly resulting in the installation of the Customer's generator. NWE shall invoice Customer, who is responsible for payment within thirty (30) days of receipt of invoice.

5. DESIGN REQUIREMENTS

- 5.1 Customer shall be responsible for the design, installation, operation, and maintenance of the Customer Facility and shall obtain and maintain any required governmental authorizations and/or permits.
- 5.2. Customer shall comply with the requirements of the NWE Net Metering Requirements for Grid Connection of Renewable Resources (attached hereto as Exhibit A) and the NWE Electric Service Requirements and Guidelines (provided upon request).

6. MAINTENANCE AND PERMITS

Customer shall (a) maintain the generator and interconnection facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to Section 5, and (b) obtain any governmental authorizations and permits required for the construction and operation of the generator and interconnection facilities. Customer shall reimburse and hold harmless NWE for any and all claims, costs, expenses (including any reasonable attorney's fees or court costs) losses, damages, judgments, penalties, or liability it incurs as a result of Customer's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of Customer Facility.

7. ACCESS TO PREMISES

NWE may enter Customer's premises (a) to inspect, at reasonable hours, Customer's protective devices and read or test meters, and (b) to disconnect, without notice, the interconnection facilities if, in NWE's opinion, a hazardous condition exists and such immediate action is necessary to protect persons, or NWE's facilities, or property of others from damage or interference caused by Customer's renewable source energy generation facilities, or lack of properly operating protective devices.

8. RENEWABLE ENERGY CERTIFICATES

Renewable Energy Certificates (RECs) or Green Tag Credits (GTCs) are marketable environmental attributes of electric energy generated using renewable fuel sources. NWE is solely responsible to apply and qualify for, and shall have the right to receive, the benefits of any and all RECs or GTCs created or granted as a result of the net metering arrangement with Customer.

9. INDEMNITY AND LIABILITY

9.1 Each Party shall defend, hold harmless, and indemnify the other Party and the directors, officers, employees, and agents of the other Party against and from any and all loss, liability, damage, claim, cost, charge, demand, or expense (including any direct, indirect or consequential loss, liability, damage, claim, cost, charge, demand, or expense, including attorneys' fees) for injury or death to persons, including employees of either Party, and damage to property, including property of either Party, arising out of or in connection with (a) the negligent engineering, design, construction, maintenance, repair, operation, supervision, inspection, testing, protection or ownership of the Party's facilities, or (b) the negligent making of replacements, additions, improvements to, or reconstruction of the Party's facilities.

9.2 Despite the indemnity of Section 9.1, and except for a Party's willful misconduct, each Party shall be responsible for damage to its own facilities resulting from electrical disturbances or faults.

9.3 The provisions of this Section 9 shall not be construed to relieve any insurer of its obligations to pay any insurance claims in accordance with the provisions of any valid insurance policy.

9.4 Neither Party shall be liable to the other Party for consequential, special, incidental or punitive damages incurred by that Party.

10. INSURANCE

Customer understands that the installation, operation and/or ownership of the Customer Facility may result in potential liabilities arising from property damage or personal injury as described in Section 9. At NWE's sole discretion, NWE may require Customer to purchase or maintain property insurance and comprehensive personal liability insurance to protect Customer against such potential liabilities. However, Customer understands that property insurance and comprehensive personal liability insurance may provide protection against such potential liabilities. Accordingly, Customer is encouraged to explore with insurers the extent to which existing or additional insurance policies may protect against the potential liabilities associated with the installation, operation and/or ownership of the Customer Facility.

11. GOVERNING LAW

This Agreement shall be interpreted, governed, and construed under the laws of Montana.

12. AMENDMENTS, MODIFICATIONS OR WAIVER

Any amendments or modifications to this Agreement shall be in writing and agreed to by both Parties. The failure of any Party at any time to require performance of any provision hereof shall in no manner affect the right at a later time to enforce the same. No waiver by any Party of the breach of any term or covenant contained in this Agreement, whether by conduct or otherwise, shall be deemed to be construed as a further or continuing waiver of any such breach or a waiver of the breach of any other term or covenant unless such waiver is in writing.

13. NOTICES

Any notice required under this Agreement shall be in writing and mailed or personally delivered to the Party at the address below. Written notice is effective within 3 days of depositing the notice in the United States mail, first class postage prepaid. Personal notice is effective upon delivery. Written notice of any address changes shall be provided. All written notices shall refer to the Customer's NWE Electric Account Number, as set forth in Section 2.4 of this Agreement. All written notices shall be directed as follows:

NWE

Attn: John Campbell
NorthWestern Energy
40 East Broadway
Butte, MT. 59701

Customer

Attn: Dirk Ellis, Managing Member
Western Skys Ltd. Co. dba StrawHouse Market
3117 Cooney #201
Helena, MT 59602

14. TERM OF AGREEMENT/TERMINATION

This Agreement shall become effective as of the last date set forth in Section 20 and shall continue in full force and effect until terminated by Customer by providing 30-day's prior written notice to the other Party in accordance with Section 13. This Agreement may be terminated prior to 30 days by agreement of both Parties. NWE may terminate this Agreement for nonpayment according to its tariffs and the Montana Public Service Commission Rules and Regulations. NWE may renegotiate this agreement upon any change in Net Metering Statute 69-8-601 et seq. MCA. Failure to reach agreement as a result of negotiation terminates this Agreement.

15. ENTIRE AGREEMENT

This Agreement supercedes all prior discussions and agreements between the Parties with respect to the subject matter hereof.

16. NO THIRD PARTY BENEFICIARY

The terms and provisions of this Agreement are intended solely for the benefit of each Party and their respective successors or permitted assigns, and it is not the intention of the Parties to confer third-party beneficiary rights upon any other person or entity.

17. NO ASSIGNMENT; BINDING EFFECT

Customer shall not assign either this Agreement or any right, interest or obligation without NWE's prior written consent. Any attempt to do so will be void. Subject to the preceding, this Agreement is binding upon, inures to the benefit of, and is enforceable by the Parties and their respective successors and assigns. Customer agrees to notify NWE upon the sale of the generation system.

18. HEADINGS

The headings used in this Agreement have been inserted for convenience of reference only and do not define or limit the provisions hereof.

19. SEVERABILITY

If any provision of this Agreement is determined to be partially or wholly invalid, illegal, or unenforceable, then such provision shall be deemed to be modified or restricted to the extent necessary to make such provision valid, binding, and enforceable; or, if such provision cannot be modified or restricted in a manner so as to make such provision valid, binding or enforceable, then such provision shall be deemed to be excised from this Agreement and the validity, binding effect, and enforceability of the remaining provisions of this Agreement shall not be affected or impaired in any manner.

20. SIGNATURES

The Parties to this Agreement hereby agree to have two originals of this Agreement executed by their duly authorized representatives. This Agreement is effective as of the latter of the two dates set forth below.

**Western Skys Ltd. Co.
Dba StrawHouse Market**

**NorthWestern Energy, a division of
NorthWestern Corporation**

By:

By:

Dirk N. Ellis

John Campbell

Managing Member

Title:

Date:

Date:

Exhibit A

Net Metering Requirements for Grid Connection of Renewable Resources

NorthWestern Energy (NWE) Montana customer owned generation may be interconnected to NWE's distribution system using a technique known as "Net Metering". A net metering system is one which: 1. Uses as its fuel renewable resources, defined to be solar, wind or hydropower, or other generation system pre-approved by NWE. 2. Has a generating capacity of not more than 50 (fifty) kilowatts. 3. Is located on the customer-generator's premises. 4. Operates in parallel with the NWE distribution system. 5. Is intended primarily to offset part or all of the Customer-generator's requirements for electricity at the specific site where the generation is installed. Parallel generation is covered in the NWE Electric Service Requirements and Guidelines section 7.08. Systems generating more than 50 kilowatts will be handled on an individual basis and will require a special agreement between the Customer and NWE.

Any net metered system interconnected with NWE's distribution system is expected to use NWE's distribution system for backup power, and so shall not employ any non-renewable resource to provide power, e.g. propane fired engine generator. These types of generator interconnections are addressed in the NWE Electric Service requirements and Guidelines section 7.07.

These requirements are designed to ensure that the generating facility will meet NWE's safety and power quality requirements. In particular, the requirements are designed to prevent back-feeding of power from the generating facility to the utility grid during power outages, and to match the NWE's own power characteristics with respect to voltage and frequency.

Requirements:

1. The generating facility shall be metered with a NorthWestern Energy utility installed meter.
2. Any direct current (DC) generating facility shall be interconnected to the NorthWestern Energy utility system through a static inverter that complies with the following requirements:

Institute of Electrical and Electronics Engineers (IEEE) standard 929, "Recommended Practice for Utility Interface of Photovoltaic (PV) Systems."

Underwriters Laboratories (UL) Subject 1741, "Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems"
3. Any alternating current (AC) generating facility interconnected to the NorthWestern Energy utility system shall employ a controller which will disconnect the generator if the power generated is over 60.03 Hz or under 59.97 Hz. Also, the controller shall disconnect the generator if the voltage of the power generated is over 128 volts, or under 112 volts.
4. The generating facility shall be installed in conformance with all applicable requirements of the National Electric Code and local building or electrical codes.

5. The owner of the generating facility and/or the owner's agents or representatives shall agree not to alter the factory set points for the owner's inverter without first notifying NWE in writing of the owner's intent to make any such modifications.
6. The generating facility shall be capable of being manually isolated from NWE's system by means of an external, visible load break, electrically located between the generating facility and the NWE system. The disconnect switch should be located within 10 feet of the Customer's electric meter and shall be clearly marked "Generator Disconnect Switch" on a weather resistant placard. This switch shall be readily accessible to NWE personnel at all times, and NWE shall have the right to lock this switch open whenever necessary to maintain safe electrical operating conditions. If the disconnect switch is located farther than 10 feet away from the NWE meter, a weather resistant placard shall be mounted next to the meter indicating clearly where the disconnect switch is located. NWE will assume that the Customer's generating facility is serving the Customer load while the NWE system is disconnected. Before connection to the NWE system is reestablished, the generator must be taken completely off line. When the Customer generator is completely off line, the utility service may be restored. At that point in time, the customer-generator may reconnect in parallel to the NWE system.
7. Demand metered facilities require two meters for net metering. The standard utility metering of demand metered facilities consists of one meter capable of metering both energy and demand. This meter shall remain in place as the "facility" meter. A second energy meter shall be installed on the output from the generator to meter the energy generated by the generator (the "generator meter"). NWE will balance the accounts between the facility and the generator to credit the customer for the energy generated in accordance with applicable law. The net metered customer will not be charged for the demand placed upon NWE's system by the generator.