
Appendices

Appendix 1 Energy Supply Hedging Strategy

Unprotected Version

The electric supply hedging strategy discussed in this Appendix is intended to accomplish a number of things including: dampening the effects of market price volatility; increasing price stability for ratepayers; and improving the probability of cost recovery for NorthWestern. These goals can be achieved by limiting exposure to short-term market volatility and by obtaining longer-term fixed price supply contracts. The 2009 Plan as a whole sets the stage for implementing actions for longer-term stability. This Appendix provides a structured approach with specific measures and timelines that sets forth a guided, disciplined approach to energy supply procurement over a rolling redacted period. Adhering to this procurement strategy will eliminate adverse situations that can arise when a material volume of energy supply resources is about to expire and no alternative has been identified or implemented. While this systematic approach seeks to mitigate supply price volatility, it cannot protect customers from electric market price trends. The information regarding procurement strategies discussed below is provided for planning purposes and is based on current market conditions. Accordingly, it is subject to change. If NorthWestern does deviate from these procurement strategies it will document the reasons.

This procurement strategy, in its theoretical form, will assemble a portfolio of energy supply resources and purchases that are reflective of market conditions over time, not market conditions at one specific point in time. In doing so, price volatility will be reduced which will in turn provide more stable supply prices for customers. This portfolio approach to resource procurement will result in a set of resources that may not contain either the lowest or highest possible cost, but rather a blended value derived from market conditions over a wide time spectrum.

Throughout this Appendix when discussing “hedging”, “fixed price hedges”, “locking in”, or other similar terms, we are referring to the price of the supply and not necessarily the actual electrons. This strategy will provide the needed flexibility to take advantage of favorable buying opportunities to “lock-in” or financially hedge material amounts of supply when market conditions dictate.

Prior to now NorthWestern has utilized physical “fixed for float” transactions as its primary hedging tool to lock-in or hedge prices. In the 2007 Electric Procurement Plan (Docket N2007.11.138) and the 2008/2009 Electric Tracker filing (Docket D2009.5.62) NorthWestern sought approval to use financial swaps. Financial swaps and physical “fixed for float” transactions are virtually identical, and they always result in similar outcomes, but NorthWestern wanted to open a dialogue as a means of educating stakeholders on how hedge transactions are executed, knowing well that the two products were the same. While NorthWestern considered this a formality (financial swaps have been approved for NorthWestern natural gas operations for a number of years), the discussions did not take place in the aforementioned dockets and NorthWestern has not utilized financial swaps for electric hedging purposes. Since that time many large market participants have exited the physical markets and are concentrating solely on financial transactions, the result being a much less liquid market for physical hedge transactions, especially those involving electronic trading platforms such as Intercontinental Exchange (ICE). So as to not limit purchases to illiquid, less-transparent markets, NorthWestern will allow participants to offer financial swaps as well as physical products for any long-term purchases made via formalized RFP’s. If the RFP results demonstrate a preference or advantage of using financial swaps they will then be utilized for long-term purchases as well as for transactions of 18 months or less.

Hedging Plan Going Forward from 2010

The goal of NorthWestern’s hedging strategy is to dampen electricity price volatility in an effective, systematic, and efficient manner. NorthWestern currently acquires the

majority of its physical electricity through rate-based assets and long and medium term market purchase contracts, with the remaining volumes purchased in the day-ahead and hourly markets. The hedging strategy NorthWestern proposes for this plan involves three main areas:

- 1) Entering into systematic and defined market purchases based on portfolio metrics and timelines while taking into consideration resource and asset development activities;
- 2) Entering into physical exchanges and intra-day physical swaps that provide physical energy at times when it is most needed; and
- 3) Setting “hard target” price values that supplement other hedging techniques and allow for increased purchases of fixed price electricity.

Systematic and Defined Market Purchases

Fixed price market transactions will be utilized to fill gaps in the portfolio where long-term resources and contracts are not sufficient to provide adequate price protection. These systematic and defined purchases with firm timetables are intended to provide the necessary discipline and direction to avoid the volumetric exposure mentioned earlier. In addition, this structured approach to making market purchases will limit the amount of supply that is procured in the hourly or spot market, which is the most volatile market for procuring electricity. Finally, the parameters or operating ranges employed will provide the needed flexibility to take advantage of down turns in the market by allowing for the procurement of larger volumes of supply when the market is viewed as being favorable.

redacted

Below are the metrics and timelines that will be followed for entering into fixed price transactions:

- 1) Prior to the beginning of each calendar quarter, at least redacted % of forecasted supply needs for each of the following redacted quarters, excluding the second

quarter (April – June) of each year, must be fixed price hedged. This will be calculated on an energy basis using normal weather. Unit-contingent resources will be forecasted at historical capacity factors after taking into consideration planned maintenance outages.

- 2) Prior to the beginning of each quarter other than the second quarter of each year, at least **redacted** % of the forecasted supply needs for that quarter must be fixed price hedged. This will be calculated on an energy basis using normal weather. Unit-contingent resources will be forecasted at historical capacity factors after taking into consideration planned maintenance outages. Should a unit-contingent resource become inoperable during a quarter, replacement energy may be purchased in the term or spot markets.
- 3) Prior to the beginning of each month, except for the months of April, May, and June of each year, at least **redacted** % of the forecasted supply needs for that month must be fixed price hedged. This will be calculated on an energy basis using normal weather.
- 4) Under normal conditions, it is NorthWestern's intent to not have an energy portfolio that is greater than **redacted** % of expected needs during the proposed hedging periods. Other than this ceiling, there is no upper limit on the amount of fixed price energy that may be procured for the **redacted** look-ahead periods.

Physical Exchanges and Shaped Swaps

Physical exchanges and shaped swaps are products that allow physical energy to be procured in the location needed to serve load when it is needed most. A physical energy exchange is merely trading power at Mid C or another trading hub for power on the NorthWestern transmission system. The value from a physical energy exchange is derived from avoiding the transmission costs to move power from one location to another. With most of our physical hedging activities

occurring at Mid C, physical exchanges provide a cost effective, efficient way to move physical energy to the NorthWestern system in order to serve load.

A shaped swap involves delivering a block of power at Mid C in return for receiving “shaped” energy on the NorthWestern transmission system in the hours and volumes when it is needed most. NorthWestern receives different volumes of energy in different hours; the volumes and hours are reflective of when the energy is needed most by NorthWestern to serve forecasted load. There is a value differential to NorthWestern that is derived from the shaped energy received and the straight block of energy delivered to the counter party. When structuring this type of deal the underlying value of the energy is not considered; only the value differential between the straight and shaped blocks of energy is monetarily exchanged. The advantage of this product is that it provides capacity when it is needed most and in doing so helps free up Basin Creek to be used for other applications.

Hard Targets

In addition to the systematic and defined market purchase strategy discussed above, a “hard target” mechanism will be utilized to trigger additional fixed price market purchases for forward delivery. These targets will be set at levels deemed to be “favorable” to customers. This reflects the fact that at some “low” price there may be no desire to have exposure to floating or index prices. NorthWestern proposes that hard targets be reviewed and updated as part of the biennial planning process to reflect changes in the market.

At any time during 2010 and 2011, if market purchases for forward delivery from that point in time through the end of 2014 reach the levels below, the following percentage of energy that is still subject to market prices should be fixed price hedged. It should be noted that only the volumes that are un-hedged will be considered, and NorthWestern will not enter into any hedges that in doing so will make total supply resources greater than expected load in any given on-peak or off-peak monthly period.

Hard Targets	
(2010/ 2014)	% of Supply
redacted	redacted
redacted	redacted
redacted	redacted
redacted	redacted

Appendix 2

Avoided Cost Information

Regulation by Federal and State statutes

Under the Administrative rules of Montana (ARM), within rule 38.5.1901 the MPSC adopted certain rules governing Federal requirements that require NorthWestern as a public utility to calculate and publish “Avoided Costs” for use by cogeneration and small power production facilities. This section was further detailed in requirements adopted within rule 38.5.1905. These sections of ARM are as follows:

38.5.1901 DEFINITIONS

(1) The commission hereby adopts and incorporates by reference 18 CFR, Part 292, which sets forth general requirements and criteria for cogeneration and small power production facilities which are eligible for consideration under sections 201 and 210 of the federal Public Utility Regulatory Policies Act of 1978, Pub. L. 95-617. A copy of this incorporated material may be obtained from the Commission, 1701 Prospect Avenue, P.O. Box 202601, Helena, Montana 59620-2601.

(2) For purposes of these rules, the following definitions apply:

(a) "Avoided costs" means the incremental costs as determined by the commission to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source.

(b) "Cogeneration facility" means equipment used to produce electric energy and forms of useful thermal energy such as heat or steam, used for industrial, commercial, heating or cooling purposes, through the sequential use of energy.

(c) "Commission" means the Montana Public Service Commission.

(d) "Interconnection costs" means the reasonable costs of connection, switching, metering, transmission, distribution, safety provisions, and administrative costs incurred by the utility directly related to the installation and maintenance of the physical facilities necessary to permit interconnected operations with a qualifying facility, to the extent such costs are in excess of the corresponding interconnection costs which the electric utility would have incurred if it had not engaged in interconnected operations, but instead generated an equivalent amount of electric energy itself or purchased an equivalent amount of electric energy or capacity from other sources. Interconnection costs do not include any costs included in the calculation of avoided costs.

(e) "Purchase" means the purchase of electric energy or capacity or both from a qualifying facility by an electric utility.

(f) "Qualifying facility" or "facility" means:

(i) A cogeneration facility which meets the operating, efficiency, and ownership standards established by FERC regulations, 18 CFR, Part 292, as incorporated in ARM [38.5.1901](#)(1) ; or

(ii) A small power production facility which meets the production capacity, energy source, and ownership criteria established by FERC regulations, 18 CFR, Part 292, as incorporated in ARM [38.5.1901](#)(1) .

(g) "Rate" means any price, rate, charge, or classification made, demanded, observed or received with respect to the sale or purchase of electric energy or capacity, or any rule, regulation, or practice respecting any such rate, charge, or classification and any contract pertaining to the sale or purchase of electric energy or capacity.

(h) "Sale" means the sale of electric energy or capacity or both by an electric utility to a qualifying facility.

(i) "Small power production facility" means a facility with a power production capacity which, together with any other facilities located at the same site, does not exceed 50 megawatts of electricity, and which depends upon biomass, waste, or renewable resources for its primary source of energy. At least 50 percent of the equity interest in a small power production facility must be owned by a person not primarily engaged in the generation or sale of

electric energy. The provisions of FERC regulations, 18 CFR, Part 292, as incorporated in ARM [38.5.1901](#)(1), respecting site location and primary energy sources are incorporated by reference in this definition.

(j) "Standard rates" means those rates calculated by a means approved by the commission which:

(i) In the case of purchases, are based on avoided costs to the utility, are computed annually by the utility and made available to the public, are reviewed by the commission, and are applicable to all contracts with qualifying facilities which do not choose to negotiate a different rate; or

(ii) In the case of sales by a utility to a qualifying facility, are the utility's tariff schedules in effect for members of the same class as the qualifying facility.

(k) "System emergency" means a condition on a utility's system which is likely to result in imminent significant disruption of service to customers or is imminently likely to endanger life or property.

(l) "Utility" means any public utility, as defined in [69-3-101](#), MCA, which provides electric service subject to the jurisdiction of the Montana Public Service Commission.

History: [69-3-103](#), MCA; [IMP](#), [69-3-102](#), MCA; [NEW](#), 1981 MAR p. 459, Eff. 5/15/81.

38.5.1905 RATES FOR PURCHASES

(1) Each utility shall submit to the commission within 30 days of the filing of its integrated least cost resource plan, or an update to that plan, as required by ARM [38.5.2001](#) - [38.5.2012](#), the following cost data for use by the commission in determining avoided costs and standard rates therefrom.

(a) The estimated avoided cost on the electric utility's system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of 10 megawatts and in blocks of 100 megawatts for systems with peak demand of 1000 megawatts or more, and in blocks of 10 megawatts and in blocks equivalent to 10 percent of the system peak demand for systems of less than 1000 megawatts. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next five years;

(b) The electric utility's integrated least cost resource plan, developed with reference to the commission's guidelines in ARM [38.5.2001](#) - [38.5.2012](#), for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding ten years; and

(c) The estimated capacity costs at completion of the planned capacity additions and planned capacity firm purchases, on the basis of dollars per kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases and shall represent the avoidable resources in the utility's integrated least cost resource plan developed according to the commission's guidelines, ARM [38.5.2001](#) - [38.5.2012](#).

(2) Each utility shall purchase available power from any qualifying facility at either the standard rate determined by the commission to be appropriate for the utility, or at a rate which is a negotiated term of the contract between the utility and the qualifying facility.

(3) The rate paid by the utility for any purchase shall not exceed the avoided costs to the utility, calculated:

(i) At the time of delivery of the facility's energy or capacity, for "as available" purchases; or

(ii) At either the time of delivery or the time the obligation is incurred, at the facility's option, for purchases of firm power over the term of the contract.

(4) The standard rate for purchases from a qualifying facility shall be that rate calculated on the basis of avoided costs to the utility which is determined by the commission to be appropriate for the particular utility after consideration, to the extent practicable, of the avoided cost data submitted to the commission by the utility and other interested persons.

(5) Assignment of a particular qualifying facility to the appropriate standard rate schedule for purchases by the utility should consider:

(a) The availability of capacity and energy from the qualifying facility during system daily and seasonal peak periods;

(b) The expected or demonstrated reliability of the qualifying facility;

(c) The relationship of the availability of energy or capacity from the qualifying facility to the ability of the utility to avoid cost;

(d) The contractual obligations the owner or operator of the qualifying facility is willing to undertake.

(e) The full range of resource attributes listed in the commission's integrated least cost resource planning and acquisition guidelines, ARM [38.5.2001](#) - [38.5.2012](#).

(6) If a qualifying facility has provided in its contract with a utility that measurement of facility energy input to the utility system and measurement of facility load will be accomplished with one meter, the qualifying facility shall be subject to a net billing system, whereby the utility shall pay the standard rate or the negotiated rate for purchases only for the facility's input to the system which is in excess of the facility's load.

(7) If the qualifying facility has agreed in its contract with a utility that measurement of facility input to the utility system shall be accomplished by metering separate from that measuring the facility load, the qualifying facility may receive payment for all of the energy it supplies to the utility according to the applicable schedule of standard rates for purchases. Unless the qualifying facility has contracted for a different rate, the standard rate is applicable regardless of whether the qualifying facility is simultaneously served by the utility for the facility's load, and regardless of the rate charged by the utility for such simultaneous sales.

History: 69-3-103, MCA; IMP, 69-3-102, MCA; NEW, 1981 MAR p. 459, Eff. 5/15/81; AMD, 1992 MAR p. 2764, Eff. 12/25/92.

Under the Code of Federal Regulation (CFR), within statute 18 CFR § 292.302 NorthWestern by its retail sales volume is required to provide data from which avoided costs can be derived. This section of the applicable CFR is as follows:

(a) *Applicability.* (1) Except as provided in paragraph (a)(2) of this section, paragraph (b) applies to each electric utility, in any calendar year, if the total sales of electric energy by such utility for purposes other than resale exceeded 500 million kilowatt-hours during any calendar year beginning after December 31, 1975, and before the immediately preceding calendar year.

(2) Each utility having total sales of electric energy for purposes other than resale of less than one billion kilowatt-hours during any calendar year beginning after December 31, 1975, and before the immediately preceding year, shall not be subject to the provisions of this section until June 30, 1982.

(b) *General rule.* To make available data from which avoided costs may be derived, not later than November 1, 1980, June 30, 1982, and not less often than every two years thereafter, each regulated electric utility described in paragraph (a) of this section shall provide to its State regulatory authority, and shall maintain for public inspection, and each nonregulated electric utility described in paragraph (a) of this section shall maintain for public inspection, the following data:

(1) The estimated avoided cost on the electric utility's system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of not more than 100 megawatts for systems with peak demand of 1000 megawatts or more, and in blocks equivalent to not more than 10 percent of the system peak demand for systems of less than 1000 megawatts. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next 5 years;

(2) The electric utility's plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years; and

(3) The estimated capacity costs at completion of the planned capacity additions and planned capacity firm purchases, on the basis of dollars per kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases.

(c) *Special rule for small electric utilities.* (1) Each electric utility (other than any electric utility to which paragraph (b) of this section applies) shall, upon request:

- (i) Provide comparable data to that required under paragraph (b) of this section to enable qualifying facilities to estimate the electric utility's avoided costs for periods described in paragraph (b) of this section; or
- (ii) With regard to an electric utility which is legally obligated to obtain all its requirements for electric energy and capacity from another electric utility, provide the data of its supplying utility and the rates at which it currently purchases such energy and capacity.
- (2) If any such electric utility fails to provide such information on request, the qualifying facility may apply to the State regulatory authority (which has ratemaking authority over the electric utility) or the Commission for an order requiring that the information be provided.
- (d) *Substitution of alternative method.* (1) After public notice in the area served by the electric utility, and after opportunity for public comment, any State regulatory authority may require (with respect to any electric utility over which it has ratemaking authority), or any non-regulated electric utility may provide, data different than those which are otherwise required by this section if it determines that avoided costs can be derived from such data.
- (2) Any State regulatory authority (with respect to any electric utility over which it has ratemaking authority) or nonregulated utility which requires such different data shall notify the Commission within 30 days of making such determination.
- (e) *State Review.* (1) Any data submitted by an electric utility under this section shall be subject to review by the State regulatory authority which has ratemaking authority over such electric utility.
- (2) In any such review, the electric utility has the burden of coming forward with justification for its data.

Applicability of Rules to NorthWestern

NorthWestern's retail sales are over 500 million kilowatt-hours a calendar year, which require it to file under the CFR. NorthWestern must make available its data from which avoided costs may be derived by June 30, 1982, and every two years following. Since its peak demand is and has been over 1,000 MW for several years it is required to state its avoided cost for energy during the current and next 5 years and also follow the capacity filing guidelines for additions and purchases as well as any capacity retirements during the current and succeeding 10 years.

Appendix 3 Price Elasticity of Demand

The resource procurement planning process and rules require that estimates of future load serving requirements be estimated in order to provide for the energy needs of supply customers. Specifically the Default Supply Utility (DSU) is directed to evaluate and quantify probable load characteristics, including trends in load shapes, load growth, load migration to choice and *price elasticity of demand*. In support of the 2009 Plan, NorthWestern has included a 20-year forecast of customer loads that include an aggregate load shape for the supply load and growth projections for both energy and peak demand. To the extent that growth (or decline) in consumer energy consumption includes an element of price elasticity of demand, the DSU is obligated to evaluate it.

In previous Plan documents, NorthWestern has explained the difficulty in determining, through quantitative treatment, the price elasticity of demand for its retail customers. The difficulty comes from a lack of meaningful price signal and corresponding usage response data from which to make the calculations. NREL (National Renewable Energy Laboratory) in a report dated February 2006 entitled “Regional Differences in the Price-Elasticity of Demand” provided the following observations:

We also found that the relationship between demand and price is small. That is, demand is relatively inelastic to price. We also found that in the past 20 years, this relationship has not changed significantly; analyses performed in the 1980s showed approximately the same results. These findings might imply that there are few options available to the consumer in response to changes in the price of energy, and that price does not respond much to changes in demand. On the other hand, because prices were declining in real terms over most of the period we studied, the inelasticity of demand may be more of an artifact of the lack of price increases.

However, we now may be witnessing some changes in this area. The past few years have seen some increases in energy prices, with some states facing increasing electricity prices and all states facing increasing natural gas prices. While it is difficult statistically to uncover specific changes in trends, there are signs that demand growth has slowed, possibly due to a combination of increasing or flat prices and the economic slowdown of the past few years. Although we cannot say specifically that the relationship between price and demand might shift in an increasing-price environment, more analysis of recent trends may be warranted.

In the report, NREL cited the following values for Montana:

- Short-run price elasticity for residential electricity 1977-2004: -0.15 to -0.05
- Long-run price elasticity for residential electricity 1977-2004: -0.25 to 0

For values less than 1, prices are said to be inelastic or demand is not sensitive to price changes.

During the 2009 DSM assessment, Nexant was asked to include, in their survey of retail customers, questions regarding energy usage behavior if electricity prices were to increase. It was hoped that customer responses could be used as a qualitative measure of price elasticity. After conducting the surveys and compiling the results, it was determined that answers to these questions were inconclusive with regard to customer usage intentions when and if electricity prices increase. In general, historical prices for electricity are not believed to be the determining factor with regard to customer usage. To the extent that price elasticity factors are reflected in historical usage by NorthWestern retail customer classes, forecasts of customer loads that use historical usage trends and values assume the same factors continue to apply in the future.

Appendix 4 Abbreviations

AC	Alternating current
ACES	American Clean Energy & Security Act
AGC	Automated Generation Control
AMI	Advanced Metering Infrastructure
AMPS	AMPS line to Idaho
aMW	Average megawatts
AMR	Automated Meter Reading
ARM	Administrative Rules of Montana
ASU	Air separation unit
ARRA	American Recovery & Reinvestment Act
AWS	Archimedes Wave Swing
BACT	Best Available Control Technology
BPA	Bonneville Power Administration
BTU/kWh	British thermal unit per kilowatt-hour
CAA	Clean Air Act
CAES	Compressed Air Energy Storage
CAMR	Clean Air Mercury Rule
CCCT	Combined Cycle Combustion Turbine
CCS	Carbon Capture and Sequestration
CFLS	Compact Florescent Light Bulbs
CFR	Code of Federal Regulation
CHP	Combined Heat and Power
CO ₂	Carbon dioxide
CPS2	Control Performance Standard 2
CREP	Community Renewable Energy Project
CT	Combustion turbine
CTED	Washington Dept. of Community, Trade & Economic Development
CU3	Colstrip Unit 3
CU4	Colstrip Unit 4
DC	Direct current
DCS	Disturbance Control Standard
DOE	Department of Energy
DSI	Direct Service Industry
DSM	Demand Side Management
DSU	Default Supply Utility
EIA	Energy Information Administration
EPA	Environmental Protection Agency

EPP	Electric Procurement Plan
EPRI	Electric Power Research Institute
ETAC	Electric Technical Advisory Committee
EUI	Energy Utilization Index
FERC	Federal Energy Regulatory Commission
GENIVAR	Genivar Consultants Limited Partnership
GHG	Greenhouse gases
GNP	Gross National Product
GWh	Gigawatt hour
HL	Heavy Load (on peak hours per Mid-Columbia definition)
HP	Horsepower
HRSG	Heat Recovery Steam Generator
HVAC	Heating Ventilating and Air Conditioning
Hz	Hertz
IC	Internal Combustion
IGCC	Integrated Gasification Combined Cycle
IOU	Investor Owned Utility
IPC	Idaho Power Company
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Producer
IRP	Integrated Resource Plan
kW	Kilowatt
LCRF	Levelized Capital Recovery Factor
LIEAP	Low Income Energy Assistance Program
LL	Light Load (off peak hours per Mid-Columbia definition)
LRAM	Lost Revenue Recovery Mechanism
Maf	Million acre feet
MAPP	Mid-Continent Area Power Pool
MATL	Montana Alberta Tie Line
MCA	Montana Code Annotated
MCC	Montana Consumer Counsel
MCGS	Mill Creek Generating Station
MCT	Marine Current Turbines, Ltd.
MDU	Montana Dakota Utilities
Mega-	Prefix meaning million
MG	Montana Generation, LLC
Mid-C	Mid-Columbia electric trading point
MIT	Massachusetts Institute of Technology
MMBtu	Millions of British thermal units

MOU	Memorandum of Understanding
MPSC	Montana Public Service Commission
MSTI	Mountain States Transmission Intertie
MSW	Municipal Solid Waste
MW	Megawatt
MWh	Megawatt hour
NEEA	Northwest Energy Efficiency Alliance
NERC	North American Reliability Corporation
NorthWestern	NorthWestern Energy
NOx	Nitrous oxide
NREL	National Renewable Energy Laboratory
NRF	Northwest Regional Forecast
NW	Northwest
NWE	NorthWestern Energy
NWPCC	Northwest Power and Conservation Council
NWPP	Northwest Power Pool
NYMEX	New York Mercantile Exchange, Inc.
O&M	Operation & Maintenance
PAC	Pacificorp
PC	Pulverized coal
PCI	PowerCosts Inc.
PGE	Portland General Electric
PNUCC	Pacific Northwest Utilities Conference Committee
PPA	Power Purchase Agreement
PPL	Pennsylvania Power & Light
PRS	Preferred Resource Strategy
PSC	Public Service Commission
PSE	Puget Sound Energy
PUC	Public Utility Commission
PUD	Public Utility District
QF	Qualifying Facility
QRE	Qualified Reporting Entity
REC	Renewable Energy Credit
RFI	Request for Information
REP	Residential Exchange Program
RFP	Request for Proposals
ROD	Record of Decision
RPS	Renewable Portfolio Standards
SCCT	Simple Cycle Combustion Turbine

SCL	Seattle City Light
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxide
TISEC	Tidal In-Stream Energy Conversion
TOU	Time of Use
TPVRR	Total Present Value of Revenue Requirements
TRC	Total Resource Cost
USB	Universal System Benefits
WAPA	Western Area Power Administration
WECC	Western Electricity Coordinating Council
WIC	Wind Integration Charge
WIWG	Wind Integration Working Group
WREGIS	Western Renewable Energy Generation Information System
WSPP	Western Systems Power Pool

