

# Glossary for use in the MN RCI TWG Process<sup>1</sup>

**Achievable Potential.** The fraction of economic potential that could be achieved through cost-effective DSM programs over the planning period in light of constraints such as market acceptance, rate impacts, budget/staffing constraints and other operational considerations.

**Administrative Costs.** In the context of DSM, costs incurred by a utility for program planning, design, marketing, implementation, and evaluation. They include labor-related costs, office supplies and expenses, data processing, and other such costs. They exclude costs of marketing materials and advertising, purchases of equipment for specific programs, and rebates or other incentives.

**Air Conditioner, Room.** A room air conditioner is a factory-made encased assembly designed as a unit for mounting in a window, through a wall, or as a console. It is designed for free delivery of conditioned air to an enclosed space without ducts.

**Air Conditioner, Unitary or Split.** A rotary air conditioner consists of one or more factory-made assemblies which normally include an evaporator or cooling coil, a compressor and condenser combination, and may include a heating function as well; where each equipment is provided in more than one assembly, the separated assemblies are designed to be used together.

**Air Conditioning.** The process of treating air so as to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space.

**Ancillary Benefits.** The ancillary or side effects of policies aimed exclusively at climate change mitigation. Such policies have an impact not only on GHG emissions, but also on resource use efficiency (i.e. reduction in emissions of local and regional air pollutants associated with fossil fuel use). From the perspective of policies directed at abating local air pollution, GHG mitigation may in some cases also be considered to be an ancillary benefit, but these relationships are not quantitatively considered in this assessment.

**Annual Participation.** The number of participants who are enrolled in a particular program for a given year.

**Attrition.** Any pattern of customers dropping out of ongoing DSM programs.

**Audit.** Analysis of a home, building or industrial process by an energy engineer to determine ways the customer can improve their energy efficiency.

**Avoided Cost** means the total costs (the components of which include energy, capacity, transmission, storage, distribution, and customer costs) that would be avoided if a given level of end-use energy requirements were provided by a potential resource. Avoided

---

<sup>1</sup> Assembled from various sources. References furnished upon request.

cost must be determined in order to assess the cost-effectiveness of potential supply-side and demand-side resources. (See "Differential Total Resource Cost Method" below.)

**Ballast.** One component of a fluorescent fixture or compact fluorescent lamp which controls the voltage and current to the lamp.

**Base Load Generation.** Those generating facilities within a utility system which are operated to the greatest extent possible to maximize system mechanical and thermal efficiency and minimize system operating costs.

**Base Load Unit/Station.** Units or plants which are designed for nearly continuous operation at or near full capacity to provide all or part of the base load. An electric generation station normally operated to meet all, or part, of the minimum load demand of a power company's system over a given amount of time.

**Base Market** means the mix of end-use fuels and end-use technologies, including their associated costs, energy efficiencies and load factors expected to occur in each year of the planning period in the absence of expenditures on DSM programs.

**Base Year** means the first year of the planning period.

**Benefit-Cost Ratio.** The ratio of the value of a DSM measure's energy savings to its installed cost. The energy savings value is based on the utility's avoided cost.

**Biomass.** The total dry organic matter or stored energy content of living organisms. Biomass can be used for fuel directly by burning it (e.g., wood), indirectly by fermentation to an alcohol (e.g., sugar) or extraction of combustible oils (e.g., soybeans).

**Btu.** British Thermal Unit, equivalent to 1055 Joules.

**Building Envelope.** The walls, doors, windows, and roof that separates the inside of a building from the outside.

**Capacity Credit.** The fraction of a supply source's rated capacity that is expected to be available at times of peak demand with the same reliability as a conventional thermal plant.

**Capacity, Electric Supply.** The maximum quantity of electrical output for which a supply system or component is rated.

**Capacity Factor.** The ratio of the average operating capacity of an electric power generating unit for a period of time to the capacity rating of the unit during that period.

**Capacity Value.** The contribution of a supply resource to the maximum capacity of the system, a measure of reliability and predictability of a resource.

**Carbon Dioxide, or CO<sub>2</sub>.** A naturally occurring gas, it is also a by-product of burning fossil fuels and biomass, as well as land-use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the earth's temperature. It is the reference gas against which other GHGs are indexed and therefore has a 'Global Warming Potential' (see below) of 1. Carbon dioxide constitutes approximately 0.036 per cent of the atmosphere. The mass ratio of carbon to carbon dioxide is 12/44.

**Carbon Sequestration.** The long-term storage of carbon or carbon dioxide in the forests, soils, ocean, or underground in depleted oil and gas reservoirs, coal seams and saline

aquifers. Examples include: the separation and disposal of CO<sub>2</sub> from flue gases or processing fossil fuels to produce H<sub>2</sub> and carbon rich fractions; and the direct removal of CO<sub>2</sub> from the atmosphere through land-use change, afforestation, reforestation, ocean fertilization, and agricultural practices to enhance soil carbon.

**Carbon Tax.** A tax placed on carbon emissions. It is similar to a BTU tax, except that the tax rate is based on the fuel's carbon content.

**Climate Change** (*UNFCCC definition*). A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability over comparable time periods.

**Clothes Washer.** A consumer product designed to clean clothes, utilizing a water solution of soap and/or detergent and mechanical agitation or other movement, and can be one of the following classes: automatic clothes washers, semi-automatic clothes washers, and other clothes washers.

**Cogeneration** means the sequential production of electricity and useful thermal energy from the same energy source. Natural gas is a favored fuel for combined-cycle cogeneration units, in which waste heat is converted to electricity.

**Coincident Demand.** A customer's demand at the time of a utility's system peak demand.

**Coincident Peak.** Customer's demand at the time of the utility's system peak.

**Constant (or Real) dollar values.** Inflation has been taken into account. This allows one to analyze with more ease the economic advantages and disadvantages of different alternatives which occur in different time periods.

**Commercial Sector.** A group of nonresidential customers that provide services, including retail, wholesale, finance, insurance, and public administration.

**Cost-Effective.** The net present value (NPV) of the benefits of the potential resource under consideration over the planning period are greater than the NPV of its costs. Cost-effectiveness is always measured relative to an alternative. Cost-effectiveness can be measured from a variety of perspectives, which vary in terms of the specific costs and benefits included in the calculation.

**Cost of Avoided Emissions.** The ratio of incremental costs of emission-reducing measures to the incremental quantity of emissions reduced.

**Cream-Skimming.** This means implementing DSM programs in which only the most cost-effective demand-side resources are installed, thereby making it uneconomical and/or impractical to return at a later time to that facility to implement additional demand-side resources that would have been cost-effective if implemented at the time the original DS resources were installed.

**Customer.** An individual, firm, organization, or other electric utility which purchases electric service at one location under one rate classification, contract, or schedule. If service is supplied to a customer at more than one location, each location shall be counted as a separate customer unless the consumptions are combined before the bill is calculated.

**Customer Charge.** An amount to be paid periodically by a customer for electric service often based upon costs incurred for metering, meter reading, billings, etc., exclusive of demand and/or energy consumption.

**Customer Class.** A group of customers with similar characteristics, such as economic activity or level of electricity use.

**Demand.** The rate at which electric energy is delivered to or by a system, part of a system, or a piece of equipment. It is expressed in kilowatts, kilovolt amperes or other suitable unit at a given instant or averaged over any designated period of time. The primary source of “Demand” is the power-consuming equipment of the customers.

**Annual System Maximum:** The greatest demand on an electric system during a prescribed demand interval in a calendar year.

**Average:** The demand on, or the power output of, an electric system or any of its parts over any interval of time, as determined by dividing the total number of kilowatt hours by the number of hours in the interval.

**Billing:** The demand upon which billing to a customer is based, as specified in a rate schedule or contract. It may be based on the contract year, a contract minimum, or a previous maximum and, therefore, does not necessarily coincide with the actual measured demand of the billing period.

**Coincident:** Two or more demands which occur during the same time interval. Typically used to express customer demand which occurs at the time of utility system peak demand.

**Instantaneous Peak:** The demand at the instant of greatest load, usually determined from the readings of indicating meters or graphic meters.

**Integrated:** The demand usually determined by an integrating demand meter or by the integration of a load curve. It is the summation of the continuously varying instantaneous demands during a specified demand interval.

**Maximum:** The greatest demand which occurred during a specified period of time.

**Non-Coincident:** Two or more demands which do not occur during the same time interval. Typically used in the context of “non-coincident peak demand” to express the customer’s peak demand which does not necessarily occur at the time of utility system peak demand.

**Demand Charge.** That portion of the charge for electric service based upon the electric capacity (kW or kVa) consumed and billed on the basis of billing demand under an applicable rate schedule.

**Demand-Side Management (DSM).** The implementation of one or more demand-side management programs.

**DSM Objectives:** Defining broad utility DSM mission and objectives, operational objectives, and load shape objectives.

**DSM Alternatives:** Identifying the range of available end uses, technologies, and market

implementation techniques.

**DSM Evaluation and Selection:** Identifying and evaluating key customer or market considerations and utility considerations and completing a cost/benefit analysis of these.

**DSM Program Implementation:** Consisting of pilot and full-scale implementation or execution of the marketing plan.

**DSM Program Monitoring:** Measuring the outcomes of program implementation and providing feedback on results.

**Demand-Side Measure.** Any hardware, equipment, or device installed, or a behavioral practice which is altered to modify the quantity, timing or source of energy used by a customer to provide a specific end-use. (Rate design is not considered to be DSM.)

**Demand-Side Management (DSM) Program.** A program implemented by a utility which encourages customers to implement one or more DSM measures.

**Demand-Side Resource.** A DSM program.

**Differential Total Resource Cost Method.** A method for computing avoided costs for a potential resource, whereby the year-by-year total resource costs for a least cost supply plan excluding the potential resource are subtracted from the year-by-year total resource costs of a least cost supply plan including the potential resource. This method ensures consistency with integrated resource planning as a whole when the TRC test is utilized.

**Dispatch Order.** The order of priority in which each unit of generation capacity is selected for operation during a given time interval.

**Dispatchability.** The ability of the utility to schedule and control, directly or indirectly, manually or automatically, the generating plants and DSM measures.

**Dispatching.** The operating control of an integrated electric system to: 1) Assign load to specific generating stations and other sources of supply to effect the most reliable and economical supply as the total of the significant area loads rises or falls, 2) Control operations and maintenance of high-voltage lines, substations, and equipment, including the administration of safety procedures, 3) Operate the interconnection, and 4) Schedule energy transactions with other interconnected electric utilities.

**Diversity.** Individual maximum demands in a collection of demands (e.g., electric loads), usually occurring at different intervals. The diversity among customers' demands creates variations among the loads in distribution transformers, feeders, and substations at a given time. A load diversity is the difference between the sum of the maximum of two or more individual loads and the coincident or combined maximum load. It is usually measured in kilowatts.

**Economic Dispatch.** The start-up, shutdown, and allocation of load to individual generating units to effect the most economical production of electricity for customers.

**Economic Potential.** An estimate of the energy and capacity savings that would occur if all DSM measures offered through cost-effective DSM programs were adopted over the planning period, without regard to constraints such as market acceptance, and rate impacts.

**Efficient Technologies.** State-of-the-art commercially available appliances, equipment, building-shell measures, or industrial processes that improve the end-use efficiency of electricity relative to the existing stock of appliances, equipment, measures, and processes.

**Electric Clothes Dryer.** A cabinet-like appliance designed to dry fabrics in a tumble-type drum with forced air circulation. The heat source is electricity and the drum and blower(s) are driven by an electric motor(s).

**Electric Heater.** An electric appliance in which heat is generated from electrical energy and dissipated through convection and radiation and includes baseboard electric heaters, ceiling electric heaters, floor electric heaters, portable electric heaters, and wall electric heaters.

**Electric Refrigerator.** A cabinet designed for the refrigerated storage of food at temperatures above freezing and having a source of refrigeration requiring single phase, alternating current electric energy input only. An electric refrigerator may include a compartment for the freezing and storage of food at temperatures below freezing, but does not provide a separate low temperature compartment designed for the storage of food at temperatures well below freezing.

**Electric Refrigerator-Freezer.** A cabinet which consists of two or more compartments with at least one of the compartments designed for the refrigerated storage of food at temperatures above freezing and with at least one of the compartments designed for the freezing and storage of food at temperatures well below freezing, which may be adjusted by the user to a temperature at or below -32 degrees C. The source of refrigeration requires single phase, alternating current electric energy input only.

**Electric Space Heating.** Space heating of a dwelling or business establishment or other structure using permanently installed electric heating as the principal source of space heating throughout the entire premises.

**Electrification.** The term describing emerging electric technologies such as electric vehicles, industrial process heating, and automation. These technologies have the potential for increasing productivity, contributing to strategic load growth, or facilitating strategic conservation, peak clipping or load shifting. Examples include industry automation, microwave heating and freeze concentration of solutions.

**Emission Factor.** The ratio of emissions to energy produced or fuel consumed, denominated in units of tons of emissions per unit of energy.

**Emissions Cap.** A mandated restraint, in a scheduled time frame, that puts a ‘ceiling’ on the total amount of anthropogenic greenhouse gas (GHG) emissions that can be released into the atmosphere.

**End-Use.** Lighting, heating, cooling, refrigeration, motor drive, microwave energy, video or audio signal, computer processing, electrolytic process, and other services provided

through the use of electricity, natural gas or other sources of energy. Note that, due to their non-storable nature, the delivery and consumption of end-use services is essentially simultaneous.

**Energy Audit.** A review of the customer's electricity and/or gas usage often including recommendations to alter the customer's electric demand or reduce energy usage. An audit usually includes a visit to the customer's facility.

**Energy Efficiency Program.** DSM program aimed at reducing overall electricity consumption (kWh), often without regard for the daily timing of the program induced savings. Such savings are generally achieved by substituting technically more efficient equipment to produce the same level of end-use services with less electricity.

**Energy, Electric.** As commonly used in the electric utility industry, electric energy means kilowatt-hours.

**Off-Peak Energy** is supplied during periods of relatively low system demands as specified by the supplier.

**On-Peak Energy** is supplied during periods of relatively low system demands as specified by the supplier.

**Surplus Energy** is generated power that is beyond the immediate needs of the producing system. This energy is frequently obtained from spinning reserve and sold on an interruptible basis.

**Energy-Limited Resource.** A supply resource (e.g., hydro) of which the total annual energy output is limited, regardless of how much rated capacity is available.

**Energy Services.** The physical amenity provided by energy-using equipment, for example cooking, illumination, thermal comfort, food refrigeration, transportation or product manufacturing.

**Environmental Impacts.** Physical impacts on the environment (air, land and water) associated with the full fuel-cycle, i.e. development, extraction, processing, transportation, storage and combustion. If these impacts are measured relative to a specific point in the fuel-cycle, e.g. the point of combustion, they may be categorized as upstream or downstream, i.e. upstream of this reference point, or downstream of this reference point.

**Evaluation.** Systematic measurement of the performance of DSM programs.

**Existing Buildings.** All buildings that are in operation as of the beginning of an analysis period or program year.

**Expansion Plan.** The schedule of planned power-supply investments to produce sufficient electricity (including reserve margins) to meet forecasted future demand.

**Externality.** A cost or benefit from production or consumption that is not accounted for in market prices. All costs and benefits which are external to the current system of pricing for energy or energy services are externalities. For example, the costs of physical damage from the presence of certain pollutants are negative environmental externalities.

**Feedstocks.** The input material for a manufacturing process. For example, refinery light ends are the feedstock that is used in production of synthetic natural gas (SNG).

**Fixed Costs.** Costs that do not vary with the number of DSM program participants.

**Forecasting.** The methodical estimation of how much energy consumers will need over a specified time frame or "planning horizon".

**Fossil Fuels.** Carbon-based fuels formed in the ground over very long periods, including coal, oil and natural gas.

**Fuel Cell.** An electrochemical device, like a battery, that combines hydrogen and oxygen to produce electricity, heat and water. The source of hydrogen can be either pure hydrogen or a number of other fuels (such as methanol or other hydrocarbons) which are first converted to hydrogen and CO<sub>2</sub>.

**Fuel Switching.** Supplying energy services using different fuels. Often used to refer to actions that reduce CO<sub>2</sub> emissions from electric utilities by switching from coal to natural gas.

**Free Driver.** A customer who purchases DS measures as a result of a DSM program but who does not use the monetary incentives offered by the program.

**Free Rider.** A customer who would have implemented a DS measure in the absence of a DSM program but who takes advantage of the monetary incentives offered by the DSM program. There are various degrees with which a customer may be a free rider.

**Full-Scale Programs.** Mature, system wide programs that are available to all eligible customers in the utility's service area.

**Global Warming.** The view that the earth's temperature is being increased, in part due to emissions of greenhouse gases associated with human activities such as burning fossil fuels, biomass burning, cement manufacture, cow and sheep rearing, deforestation and other land-use changes.

**Global Warming Potential, or GWP.** A time dependent index used to compare the radiative forcing, on a mass basis, of an impulse of a specific greenhouse gas relative to that of CO<sub>2</sub>. Gases included in the Kyoto Protocol are weighted in the first commitment period according to their GWP over a 100-year time horizon as published in the 2001 *Third Assessment Report* of the IPCC.

**Greenhouse Gases, or GHGs.** Gases in the earth's atmosphere that absorb and re-emit infra-red radiation. These gases occur through both natural and human-influenced processes. The major GHG is water vapour. Other primary GHGs include carbon dioxide, nitrous oxide, methane, ozone and CFCs.

**Heat Pump.** An air conditioning unit that reverses itself and can thus be used as a heater. By means of a compressor and reversing valve system, a heat-transfer liquid is pumped between the indoor and outdoor units, moving heat into a building during cold weather and out of it during warm weather. In other words a heat pump is a refrigeration machine which is arranged to either heat or cool a building by using heat from the condenser section or by using cooling from the evaporator section.

**Heat Pump, Cooling and Heating.** A refrigeration system designed to utilize alternately or simultaneously the heat extracted at a low temperature and the heat rejected at a higher temperature for cooling and heating functions respectively.

**HVAC System.** A system that provides either collectively or individually the processes of comfort heating, ventilation and/or cooling within or associated with a building.

**Incandescent Filament (bulb).** A lamp in which light is produced by a filament heated to incandescence by an electric current.

**Incentive.** An award offered to encourage participation in a DSM program and adoption of recommended measures.

**Incentive Program.** Awards (either cash or non-cash) to customers, trade allies, or employees to encourage participation in a DSM program and adoption of recommended measures.

**Incentive Rate.** Some form of reduced commercial or industrial rate generally designed to provide an incentive for targeted businesses to remain in the utility's service territory or to promote business expansion in an economically depressed area of the utility's service territory. Some rates are also targeted at businesses experiencing severe financial difficulties. The rates are usually offered to customers for a fixed period of time.

**Incremental Cost.** The difference in costs, particularly between that of an efficient technology or measure and the alternative standard technology. In some early retirements and retrofits, the full cost of the efficient technology is considered to be the incremental cost.

**Insolation.** Solar radiation which is delivered to any place on the surface of the earth directly from the sun; the rate of such radiation per unit of surface.

**Integrated Resource Planning.** The combined development of electricity supplies and demand-side management (DSM) options to provide energy services at minimum cost, including environmental and social costs.

**Intergovernmental Panel on Climate Change, or IPCC.** Panel established in 1988 by governments under the auspices of the World Meteorological Organization and the UN Environment Programme. It prepares assessments, reports and guidelines on: the science of climate change and its potential environmental, economic and social impacts; technological developments; possible national and international responses to climate change; and cross-cutting issues. It provides advice to the UNFCCC's Conference of the Parties. It is currently organized into 3 Working Groups which address: I) Science; II) Impacts, Adaptation and Vulnerability; and III) Mitigation. There is also a Working Group to address GHG Inventories.

**Inventories.** Countries are required to submit regularly an inventory of their GHG emissions. The IPCC has provided guidance on how to estimate and report on anthropogenic GHG emissions and removals, using a standardized tabular reporting format for six major sectors: energy; industrial processes; solvents and other product use; agriculture; land-use change and forestry; and waste. In addition to a sector-by-sector approach of summing carbon dioxide emissions from fossil fuel combustion, the IPCC requires that, as a check, a top-down approach be used to calculate emissions based on

national fuel consumption data. A range of companies and associations are also preparing GHG inventories and the methodologies to calculate them. A number of factors need to be considered when designing a corporate GHG inventory including: emissions factors versus direct measurements; boundary definition around operations; the inclusion of emissions from contractors; and materiality. Certain sources of emissions, such as bunker fuels, are intentionally excluded from inventories for now.

**ISO.** The International Organization for Standardization. The ISO is a worldwide federation of national standards bodies from 130 countries.

**Levelized Cost.** The uniform annual cost which results in the same net present value over the planning horizon as the stream of actual annual average costs. An example of a levelized cost is a monthly mortgage payment.

**Line Losses.** Kilowatt-hours and kilowatts lost in the transmission and distribution lines under specified conditions.

**Load Building Programs.** Utility sponsored efforts designed to increase customer usage of the fuel provided by the sponsoring utility.

**Load-Duration Curve.** A graph showing a utility's hourly demand, sorted by decreasing size, and the amount of time a given level of demand is exceeded during the year.

**Load Factor.** The ratio of average requirements to peak requirement for the same time period. Load factor may be calculated for a customer, customer class or the entire system. An "improved" load factor implies that the peak requirement is reduced while average requirement is held constant, such that there is an increase in the ratio of the average to peak requirement.

**Load-Following.** The ability of a supply resource to respond to variations in demand.

**Load Forecasts.** Predicted demand for electric power. A load forecast may be short-term (e.g., 15 minutes) for system operation purposes, long-term (e.g., 5 to 20 years) for generation planning purposes, or for any range in between. Load forecasts may include peak demand (kW), energy (kWh), reactive power (kVAR), and/or load profile. Forecasts may be made of total system load, transmission load, substation/feeder load, individual customers' loads, and/or appliance loads.

**Load Management.** Economic reduction of electric energy demand during a utility's peak generating periods. Load management differs from conservation in that load management strategies are designed to either reduce or shift demand from on-peak to off-peak, while conservation strategies may primarily reduce usage over the entire 24-hour period. Motivations for initiating load management include the reduction of capital expenditure, circumvention of capacity limitations, provision for economic dispatch, cost of service reduction, system efficiency improvements, or system reliability improvements. Actions may take the form of normal or emergency procedures. Many utilities encourage load management by offering customers a choice of service options with various price incentives.

**Load Shape.** The time-of-use pattern of customer demand for energy.

**Load Shedding.** The turning off of electrical loads to limit peak electrical demand.

**Load Shifting.** Involves shifting load from peak to off-peak periods. Popular applications include use of storage water heating, storage space heating, cool storage, and customer load shifts to take advantage of time-of-use or other special rates.

**Loss of Load Probability.** A measure of the probability that system demand will exceed available capacity during a given period.

**Lost Opportunities.** Those situations where cost-effective DSM measures could have been employed at one time but were not, and where subsequent attempts to apply DS measures are not cost-effective. Perhaps the best example of this occurs in new construction where cost-effective measures left out at the time of construction become too expensive to apply at a later point in time.

**Lost Revenues.** Utility income that is lost through reduced sales due to a DSM or energy-efficiency program.

**Marginal Cost.** The cost of providing an incremental unit of energy services.

**Marginal Cost of Energy.** The cost of providing an incremental unit of energy.

**Marginal Cost of Capacity.** The cost of meeting an incremental unit of peak-demand.

**Marginal Resource.** The most expensive resource, in terms of short-run marginal (fuel and operating) cost, needed at a given time.

**Market Potential.** An estimate of energy savings that adjusts the economic potential for the likely acceptance by customers of various energy-saving actions.

**Mitigation option.** An end use option in the RCI sectors with the potential for reducing carbon dioxide equivalent emissions.

**Monitoring and Evaluation.** The process of collecting and analyzing data and drawing conclusions about the performance of supply- and demand-side resources.

**Net Present Value (NPV).** The present value of the future cash flows of an investment less the investment's current cost.

**Net Revenue Loss.** The portion of revenue requirements, net of avoided costs, a utility does not recover from ratepayers between rate cases because of the change in customer consumption attributable to its DSM programs.

**New Participants.** Customers who participate in a program during the current year and did not participate in the program during the previous year.

**No Regrets.** Actions which result in greenhouse gas limitations and abatement, and which also make good environmental and economic sense in their own right.

**Nominal (or Current) dollar values.** Inflation has not been taken into account. Dollar values given in nominal terms are taken at face value.

**Non-Technical Losses.** Commercial losses from theft of electricity through unauthorized connections, tampering with meter reading, metering errors, etc.

**Participant.** Units used by a utility to measure participation in its DSM programs. Such units of measurement include customers or households for residential programs and

customers, square foot floor area, and/or kW-connected for commercial, industrial, and agricultural customers.

**Participant Costs.** Costs associated with participation in a DSM program paid by the customer and not reimbursed by the utility.

**Participant Test.** A cost-benefit test that identifies the quantifiable benefits and costs to participants in a DSM program. If the result of the test, i.e., benefit cost ratio, is greater than 1.0 the program is, by definition, cost-effective under the test.

**Participation Rate.** The ratio of the number of participants in a program to the number eligible for the program, with both the numerator and denominator defined in the same units.

**Peak Demand.** The maximum rate of electricity consumption, expressed in GW.

**Programs.** Experimental programs whose design, technology, and/or method of implementation are being tested to determine if they are cost-effective. Pilot programs are typically limited in scope as to target population and duration.

**Planning Period.** The time period over which the utility IRP analysis is performed. For the purposes of this rule, the planning period is 20 years.

**Potential Resources.** Resources, either supply-side or demand-side, which are either currently commercially available, feasible or are expected to be commercially available within the planning period.

**Preferred Plan.** The plan, identified through an IRP process, which a utility believes will best enable it to provide reliable service at minimum reasonable total resource cost over the planning period, in light of considerations such as risk, rate impact and total societal costs. The preferred plan is based upon the IRP that minimizes total resource costs, with such modification as the utility deems appropriate to address non-direct costs and other factors. The preferred plan necessarily specifies the mix of demand- and supply-side resources which satisfies this objective, subject to these considerations.

**Present Worth:** the equivalent value today of discounted future cash flows.

**Radiative Forcing.** A change in the balance between incoming solar radiation and outgoing infra-red and short-wave radiation. Without any radiative forcing, solar radiation absorbed by the earth would continue to be approximately equal to the infra-red radiation emitted from the earth. The addition of greenhouse gases absorbs an increased fraction of the infra-red radiation in the atmosphere, reradiating it and creating a warming influence.

**Ratepayer Impact Test.** An analytic test that includes the costs and benefits from the perspective of a non-participating consumer. In effect, this test examines the price impacts of DSM programs.

**Reference Case.** A projected level of future GHG emissions against which reductions by mitigation options could be determined, or the emissions that would occur without policy intervention.

**Renewables.** Energy sources that are constantly renewed by natural process. These include non-carbon technologies such as solar energy, hydropower and wind as well as

technologies based on biomass. Life cycle analyses are required to assess the extent to which such biomass-based technologies may limit net carbon emissions.

**Reserve Margin.** The difference between an electric system's maximum capacity and the expected peak demand.

**Retrofit.** Modifications made to update existing equipment or structures.

**Revenue Requirements.** The amount of revenues that a utility needs to receive in order to cover operating expenses, pay debt service, and provide a fair return to common equity investors.

**Saturation. (a measure of stock).** The ratio of the number of specific types of appliances or equipment to the total number of customers in that class or to the total number of appliances or equipment in use (e.g., the fraction of existing homes with double-pane windows).

**Social Discount Rate.** A rate that reflects the rate of time preference for evaluating investments from the perspective of society. The rate for U.S. Treasury bonds at the time the IRP is prepared, for a time period equal to the planning period, may be used to represent this discount rate.

**Societal Cost Test.** An analytic test that evaluates all of the costs and benefits to society associated with a specific resource. A resource option is cost-effective under this test when the present value of benefits over the planning period exceeds the present value of costs, using an appropriate social discount rate. All direct (economic) costs and benefits and all externalities (positive and negative) are considered. See Appendix A for a more detailed description of this test.

**Strategic Load Growth.** The increase of end-use consumption during certain periods. The result is a general increase in energy sales beyond the valley filling (defined herein) strategy. Strategic load growth may involve increased market share of loads that are, or can be, served by competing fuels, as well as area development.

**Summer Peak.** The greatest load on an electric system during any prescribed demand interval in the summer (or cooling) season, usually between June 1 and September 30 in the northern hemisphere.

**Supply or Supply-Side Resource.** A resource option including baseload, intermediate, or peaking fossil units, or renewable energy technologies.

**Supply-Only Plan.** The plan, using only supply-side resources, which a utility believes will best enable it to provide reliable service at minimum reasonable total resource costs over the planning period.

**Total Resource Costs.** Revenue Requirements plus total customer contributions for all DSM programs implemented.

**Total Resource Cost Test (TRC).** An analytic test which evaluates all of the direct costs and benefits to society associated with a specific resource. A resource option is cost-effective under this test when the present value of benefits over the planning period exceeds the present value of costs, using an appropriate social discount rate. In applying

this test, the allocation of these costs and benefits between the utility and program participants is not considered.

**Utility Discount Rate.** A rate that reflects the utility's current weighted after-tax cost of capital.

**Utility Revenue Requirements Test.** An analytic test that includes the costs and benefits from the perspective of a utility company. On the cost side are the costs of administering and delivering DSM measures (excluding any participant contribution) and on the benefit side are the utilities' avoided supply costs.

**Valley Filling.** The building of off-peak loads. Valley filling may be partially desirable where the long-run incremental cost is less than the average price of electricity. Adding properly priced off-peak load under those circumstances decreases the average price. Valley filling can be accomplished in several ways, one of the most popular of which is thermal storage (water heating and/or space heating or cooling) that increase night-time loads and reduce peak period loads.

**Watt-hour.** The total amount of energy used in one hour by a device that requires one watt of power for continuous operation. Electric energy is commonly sold by the kilowatt-hour (defined herein).

**Winter Peak.** The greatest load on an electric system during any prescribed demand interval in the winter (or heating) season, usually between December 1 and March 31 in the northern hemisphere.