

## **GLOSSARY OF SOLAR PHOTOVOLTAIC THERMAL TERMS**

### **BASIC TERMS**

**Compliance Entities:** Entities that must comply with the Renewable Portfolio Standard by providing a percentage of their load from renewable sources. Also referred to as Retail Electricity Suppliers and Load Serving Entities.

**Customer sited (or behind the meter)** - Refers to technology that provides electricity directly to a customer on site and not from a utility central power plant. A common form of distributed generation (DG), or electricity generated close to its use, is customer-sited DG.

**Grid or socket parity** - Grid parity (or socket parity) occurs when an alternative energy source can generate electricity at a levelized cost of electricity (LCoE) that is less than or equal to the price of purchasing power at a retail price from the electricity grid. Simplified, it means the cost of renewable electricity equivalent to the retail price of utility supplied electricity.

**Levelized cost of energy (LCoE)** - The constant price per unit of electricity that causes the investment to break even. The calculation will often consider capital costs, operations and maintenance (O&M), performance, and fuel costs and could include financing issues, discount issues, future replacement, or degradation costs.

**Retail Electricity Supplier:** A company that sells retail electricity (electricity to the consumer). In Mass., regulated utilities and competitive electric suppliers can sell retail electricity. (Delivery of electricity remains with the distribution companies). Also referred to as Load Serving Entities (LSEs) and Compliance Entities.

**Solar Photovoltaic (Solar PV)** - Technology that converts solar energy to usable electricity which can be used, stored, or converted for long-distance transmission. A photovoltaic system minimally includes an array of solar panels, an inverter, and interconnection wiring.

**Solar thermal**— Technology that converts direct and indirect solar energy into thermal energy to provide usable heat for a number of applications including but not limited to water heating, space heating and cooling, and process heat.

**Utility Scale or Utility side of the meter** - Renewable energy generation that feeds directly into the electric grid such as 1 MW or greater stand alone solar PV projects. This is in direct contrast to customer-sited distributed generation.

### **MEASUREMENT TERMS**

**Watt** - A derived unit of power. A watt is a measure of electrical power.

**Kilowatt (kW)** - 1,000 watts. A typical residential sized solar PV system is 5-7 kW.

**Kilowatt-hour (kWh)**—A kilowatt-hour is a unit of energy which measures the amount of power used over a given period of time. Electricity bills are provided to customers in kWh. In 2010, Massachusetts residents on average used 633 kWh of electricity monthly.

**Megawatt (MW)** 1,000 kW or 1,000,000 Watts.

**Megawatt-hour (MWh)** -- a unit of energy which measures the amount of power used over a given time. In 2010, the average annual electricity consumption for a U.S. residential utility customer was 11.5 MWh (or 11,496 kWh).

#### STATE POLICY TERMS:

**Alternative Compliance Payment (ACP)** - A payment that utilities must pay if they are not able to produce enough renewable energy to satisfy the State's renewable electricity mandate (RPS).

**Net Metering** - Net metering is a state regulation allowing customers to receive retail value during periods when their eligible on-site distributed generation (such as a solar array) generates more electricity than they use. That is, the electric meter runs backward whenever a customer's net metered facility is producing more power than is being consumed and the customer receives onbill net metering credits for the net excess generation.

**Renewable Energy Credit (REC)** - REC (pronounced: rĕk) represents the property rights to the environmental, social, and other non-power qualities of renewable electricity. A renewable energy system owner is eligible to receive one REC for every MWh of renewable energy generated.

**Renewable Portfolio Standard (RPS)**-- A state program requiring a certain percentage of the in-state energy load served by Retail Electric Suppliers (RES) to come from renewable energy resources such as wind, solar, biomass, and geothermal.

**Solar Renewable Energy Credit (SREC)** —REC generated from solar energy technologies. See attached.

#### SOLAR FINANCING TERMS

**Investment Tax Credit (ITC)** - The federal Investment tax credit (ITC) is a 30 percent tax credit for renewable energy systems on residential and commercial properties. The ITC reduces the tax liability for individuals or businesses that purchase qualifying energy technologies.

**Power Purchase Agreement (PPA)** - A PPA is a financial arrangement in which a third-party developer owns, operates, and maintains an energy generating system, and a host customer agrees to site the system on its property and purchases the system's electricity output from the third-party owner for a predetermined period and price. This is a common mechanism that allows commercial and residential customers to, in effect, lease solar energy on site.