620 SOLAR ENERGY SYSTEMS

DEFINITIONS:

A. **Battery Back-Up:** A battery system that stores electricity energy from solar energy conversion system for future use.

B. **Electricity Generation:** The amount of electric energy produced by transforming other forms of energy, usually expressed in kilowatt-hours or megawatt-hours.

C. **Ground-Mount System:** A Solar energy system that is attached to an anchor in the ground and wired to connect to the meter of a home or building.

D. **Kilowatt (kW)** – Equal to 1,000 Watts

E. **Kilowatt-hour (kWh)** – A unit of energy that is equivalent to one kilowatt (1kW) of power expended for 1 hour of time.

F. **Megawatt (MW)** – Equal to 1,ooo Kilowatts.

G. **Megawatt-hour(MWh)** – A unit of energy that is equivalent to one Megawatt (1MW) of power expended for 1 hour of time.

H. **Net Metering:** A billing arrangement that allows customers with grid-connected solar systems to receive credit for any excess electricity generated on site and provided to the utility grid.

I. **Photovoltaic System**" An active solar system that converts solar energy directly into electricity.

J. **Pole-Mount Systems:** A solar energy system that is directly installed on specialized pole-attached systems, anchored to a concrete foundation in the ground, and wired underground to a meter.

K. **PV-Direct System:** A solar energy conversion system designed to only provide electricity during sunlight.

L. **Roof-Mount System:** A solar energy system consisting of solar panels installed directly on the roof of a primary or accessory structure.

M. **Solar Access:** The ability to receive sunlight across property lines without obstruction from another's property.

N. **Solar Array:** Multiple solar panels combined together to create one system.

O. **Solar Collector:** Any solar device that absorbs and accumulates solar radiation for use as a source of energy. The device may be roof-mounted or ground-mounted as an accessory use.

P. **Solar Energy:** Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

Q. **Solar Energy System:** A device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or to provide for the collection, storage and distribution of solar energy for space heating or cooling, electricity generating, or water heating. Solar Energy Systems may include, but not be limited to, solar farms and any of several devices that absorb and collect solar radiation for use as a source of energy as an accessory use.

R. **Solar Farm:** An area of land designated use for the sole purpose of deploying photovoltaic power and generating electric energy.

S. **Solar Panel/Module:** A device for the direct conversion of sunlight into useable solar energy (including electricity or heat)

T. **Tilt:** The angle of the solar panels and/or solar collector

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A. Solar Farm: A Solar Farm developed as the primary use of a property shall be considered as a Conditional Use in accordance with Article 10, subject to the following:

1. Setbacks:
   Solar Farms shall mee the minimum building setbacks for the zoning district in which located.
2. Height:
   Twenty (20) feet maximum when oriented at maximum tilt.
3. Visibility:
   a. Solar Farms with panels located at least one hundred fifty (150) feet from an adjacent public road right-of-way, or adjacent property line, shall not require screening.
   b. Solar Farms with panels located less than one hundred fifty (150) feet from an adjacent public road right-of-way, or adjacent property line, must provide landscaping and/or trees to visually obscure the facility from the public road.
4. Application Requirements:
   a. A site plan denoting the dimensions of the parcel, proposed solar farm location(arrangement of panels), distance from the proposed area to all

property lines and location of the driveway(s). No portion of the system area may encroach into the required setbacks.

b. Horizontal and vertical (elevation) to-scale drawings with dimensions. The drawings must show the location of the system on the property and its relationship to adjacent roads or highways.

c. If applicable, the applicant must apply and receive from the Nebraska Department of Transportation (NDOT) authorization for a private driveway or access easement from a State or Federal Highway, or submit documentation from NDOT that the existing site access is acceptable for the required use prior to final project approval.

d.

5. Installation and Design:

a. Approved Solar Components
Electric solar energy system components must have a UL listing and must be designed with anti-reflective coating(s).

b. Compliance with Nebraska fire and electric codes.
All solar farms shall meet all requirements of the Nebraska State Fire Marshal and Electrical Division.

c. A fence, a minimum of 8 feet tall, shall be erected around the outside of the Solar Farm and must follow the setbacks to adjacent property line and public roads.

d. Ground cover under the solar panels must be approved by the County Board.

B. SOLAR COLLECTOR (Accessory Uses): Solar Collectors shall be permitted as an accessory use to existing or newly constructed structures or facilities in any zoning district under the following standards:

1. Types of Solar Collectors Classified as an Accessory Use:

a. Roof-Mounted Solar Systems:
The collector surface and mounting devices for roof-mounted solar systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built.

b. Pitched Roof Mounted Solar Systems:
For all roof-mounted systems other than a flat roof the elevation must show the highest finish slope of the solar collector and the slope of the finished roof surface on which it is mounted.

c. Flat Roofed Mounted Solar Systems:
For flat roof applications a drawing shall be submitted showing the distance to the roof edge and any parapets on the building.

d. Ground Mounted Solar System:
Ground Mounted solar collectors (accessory) may not exceed ten (10) feet in height and shall meet the minimum zoning setback for the zoning district in which located, except it may be located within the front yard setback.

2. Approved Solar Components

   Electric solar system components must have a UL listing and must be designed with antireflective coating.

3. Application Requirements:

   Plan applications for solar energy systems shall be accompanied by horizontal and vertical (elevation) to-scale drawings with dimensions. The drawings must show the location of the system on the building for a roof-mounted system or on the property for a ground-mounted system, including the property lines.

4. Compliance with fire and Electrical Codes:

   All solar collector systems shall be in conformance with the Nebraska State Fire Marshal and Electrical Division requirements for inspection and licensing.

C .Safety:

1. The design of any solar energy system shall be in conformance with the Nebraska State Fire Marshal and Electrical Division requirements for inspection and licensing.
2. Prior to operation, electrical connections must be inspected by an appropriate electrical inspection person or agency.
3. Any connection to the public utility grid must be approved by the local public utility.

D Battery Energy Storage System:

1. If the solar energy system includes a Battery Storage Energy System, the batteries must be installed according to all requirements set forth in the National Electric Code and State Fire Code when in operation. When no longer in operation, the batteries shall be disposed of in accordance with current laws and regulations and any other applicable laws and regulations relating to hazardous waste disposal.
2. The owner/operator of any Battery Energy Storage System must train local fire and rescue teams on controlling fire or any emergency situation that might occur and donate to the local fire and rescue organizations the proper equipment needed.

Decommissioning and Abandonment:

1.The applicant shall submit a decommissioning plan which shall include at a minimum:

a. The anticipated life of the project.

b. An estimated decommissioning costs and source(s) of financing for removing all above ground facilities and underground improvements to a depth of 3 feet, net salvage value, in current dollars.

c. The method or process of insuring that decommissioning will be properly and timely completed.

d. The anticipated manner in which the project will be decommissioned, and the time period in which the decommissioning shall be completed.