

# Chapter 165, Zoning

## ARTICLE III

### **Section 165-28.2 Solar Energy Systems** (Effective XX/XX/202X)

- A. This chapter is adopted in accordance with RSA 674:17, I (j), and the purposes outlined in RSA 672:1, III-a, as amended. The purpose of this ordinance is to permit the building of distributed generation resources using renewable energy, while protecting the public's health, safety, and welfare. The Town intends to promote the State and national goals of developing clean, safe, and renewable energy resources in accordance with New Hampshire's Ten Year State Energy Strategy that includes national security and economic and environmental sustainability.
- B. Word Usage and Definitions. For the purpose of this chapter, certain terms or words herein shall be interpreted as follows: the present tense includes the future tense, the singular number includes the plural, and the plural includes the singular. The words "shall" and "will" are mandatory; the word "may" is permissive.

**ADVERSE NOISE IMPACTS** - Disturbance and noise above 60 decibels at the property line.

**GLARE** – The effect produced by light that exceeds the Index of Refraction, which is equal to 1.3, including the loss of visual performance or discomfort produced by an intensity of light in the visual field that is greater than the intensity of light to which the eyes are adapted.

**GROUND -MOUNTED** – A solar collection system and associated mounted hardware that is affixed to or placed upon the ground (such as ballasted systems) including but not limited to fixed, passive, or active tracking racking systems.

**RATED NAMEPLATE CAPACITY** – Maximum rated alternating current ("AC") output of solar collection system based on the design output.

**RESIDENTIAL/SMALL BUSINESS SOLAR** – Any ground mounted or roof mounted solar collection system primarily for on-site residential use, and consisting of one or more free-standing, ground or roof mounted, solar arrays or modules, or solar related equipment, intending to primarily reduce on-site consumption of utility power and with a rated nameplate.

**ROOF MOUNTED** – A solar collection system that is structurally mounted to the roof of a building or other permitted structure, including limited accessory equipment associated with the system which may be ground mounted.

**SHARED/COMMUNITY SOLAR ENERGY SYSTEM** – A solar energy system that serves a group of local energy users situated on one or more separate lots, which

are not necessarily contiguous. These systems may be connected to privately-owned distribution lines or utility-owned distribution or transmission lines. Users are typically connected to the shared system through a group net metering agreement, power purchasing agreement, or other similar agreement or method.

**SOLAR ACCESS** – The ability of one property to continue to receive sunlight across property lines without obstruction from another’s property (buildings, foliage or other impediment). Solar access is calculated using a sun path diagram.

**SOLAR COLLECTION SYSTEM** - Includes all equipment required to harvest solar energy to generate electricity. The Solar Collection System includes storage devices, power conditioning equipment, transfer equipment, and parts related to the functioning of those items. Solar Collection Systems include only equipment up to (but not including) the stage that connection is made to the utility grid or site service point.

**SOLAR LAND COVERAGE** - Is defined exclusively for the purposes of calculating the footprint of the land area occupied by the components of a solar array. The Solar Land Coverage is the land area that encompasses all components of the solar collection system including but not limited to mounting equipment, panels, and ancillary components of the system. This definition does not include access roads or fencing and is not to be interpreted as a measurement of impervious surface.

**SOLAR PANEL** – That part or portion of a solar energy system containing one or more receptive cells or modules, the purpose of which is to convert solar energy for use including but not limited to space heating or cooling, for water heating and/or for electricity.

C. General Provisions. The following general provisions shall apply to Residential/Small Business Solar Collection Systems.

1. Location and Size.

- a. Solar panels exceeding eighteen (18) square feet in area are not permitted in any front yard, or on any face of a building or structure facing a street unless integrated with the ordinary construction of said building or structure, except roof mounted solar panels as set forth below.
- b. Ground mounted solar panels, larger than eighteen (18) square feet, shall be located in a side or rear yard only, not to exceed twenty-five (25) feet in height above the ground and shall be reasonably screened from adjacent properties by fencing or a combination of evergreen and deciduous plantings. A ten foot access shall be provided on one side of the fence array for emergency access. Gates shall have an emergency key box (“Knox Box<sup>®</sup>”).
- c. Roof -mounted solar panels. Permitted roof-mounted solar panels shall include integrated solar panels as the surface layer of the roof structure with no additional apparent change in relief or projection (the preferred installation), or separate flush-mounted solar panels attached to the roof. An engineer will be required to review the roof structure and provide a report saying it will support the array prior to permitting the installation

or indicating what modifications must be performed to make the roof viable to support the array.

- d. Separate flush-mounted solar panels installed on a building or structure with a sloped roof surface shall not project vertically above the peak of the roof to which it is attached, or project vertically more than ten (10) feet above a flat roof installation. Total height, including panel angles must comply with NFPA 1, Section 11.12.2.2.1, Fire Accessways.
- e. Solar Collection systems of up to and including 15kW and less than 900 square feet of solar land coverage shall be allowed as a right, requiring only compliance with setbacks and no more than 18 square feet may be located in the front yard. A building permit and electrical inspection, by a licensed master electrician, is required to ensure compliance with electrical and building code provisions.

#### D. Specific Solar System Requirements and Exemptions

1. Any Solar Collection System must meet all setback and height regulations of the Town of Derry.
2. Any Solar Collection System must meet all State and Federal requirements.
3. The applicant must provide notice of the expected output (kW). This information must be provided with the Building Permit application.
4. If connected to a utility, copies of the utility approval must be provided for solar arrays both less than and greater than 15kW.
5. For a roof-mounted solar array and ground mounted arrays of 15kW AC or less, no further review is required.
6. For free-standing, ground-mounted solar array greater than 15kW AC, the process shall be as follows:
  - a. Application for site plan review to the Planning Board is required.
  - b. The Planning Board, at its option, may require the applicant to submit an analysis of potential glare and other nuisances caused by the installation and require the applicant to take steps to mitigate, as appropriate.

E. Decommissioning. Each Solar Collection System and all solar related equipment shall be removed within twelve (12) months of the date when the use has been discontinued or abandoned by the system owner and/or operator, or upon termination of the useful life of same. The Solar Collection System shall be presumed to be abandoned if no electricity is generated by such solar collector for a period of twelve (12) continuous months. An escrow/removal bond, such as those assessed for tower removal, may be required by the Planning Board or Public Works.

#### F. Solar Ready Zoning

1. Solar Ready Zoning should be considered as one among multiple considerations in planning new developments.
  2. New structures are encouraged, to the extent possible and insofar as practical, to be situated on the lot to take advantage of solar access, including the orientation of proposed buildings with respect to sun angles, the shading and windscreen potential of existing and proposed vegetation on and off the site, and the impact of solar access to adjacent uses and properties.
  3. To permit maximum solar access to proposed lots and future buildings, where reasonably feasible and where consistent with other appropriate design considerations, new streets are encouraged to be located in such a way as to encourage building siting with the maximum exposure of roof and wall area to the sun.
  4. Derry town tree-planting programs are encouraged to take into account the impact of street trees on the solar access of surrounding properties and, where possible, efforts made to avoid shading possible locations of solar collectors.
  5. Developers submitting applications for residential subdivision approval or site plan approval, are encouraged to take into consideration whether the proposed construction would block access to sunlight between the hours of 10:00 a.m. and 4:00 p.m. Eastern Standard Time for existing ground-mount, pole-mount, or roof-mounted solar energy collectors or for solar energy collectors.
- G. Shared Community Solar Energy System. Together with the requirements detailed above, the application must include a certified copy of the agreement of all principals involved with the collaboration, detailing the intended management of the system, the ongoing financial requirements, and the procedure regarding the change of ownership or withdrawal of any principals.
- H. Municipal Systems. All solar collection systems for municipal use are exempt from land use regulations pursuant to RSA 674:54.