Recommendations for Municipal Tools to Promote and Regulate the Deployment of Solar Energy Systems

Roof-Mounted and Building-Integrated Solar Energy Systems

Appropriate Locations. Roof-Mounted and Building-Integrated Solar Energy Systems should be permitted as-of-right on all other permitted buildings and structures throughout the community.

Height. Roof-Mounted and Building-Integrated Solar Energy Systems should be required to meet the same height restrictions as any other building or structure. In other words, if located on a principal building they should meet the height requirements of a principal building; if located on an accessory building, they should meet the height requirements of an accessory building.

***Historic Districts*. Municipalities with historic districts should establish specific guidelines and standards for building owners that wish to install solar energy systems. To the extent possible, the requirements should not involve any additional review beyond that required of any other alteration to an existing historic building.

Accessory Ground-Mounted Solar Energy Systems

Appropriate Locations. Accessory Ground-Mounted Solar Energy Systems should be permitted as-of-right accessory uses throughout the community.

Height. Accessory Ground-Mounted Solar Energy Systems should be required to meet the same height restrictions as any other accessory building or structure.

***Location on a Property*. (a) Accessory Ground-Mounted Solar Energy Systems should be required to meet the same setback requirements as any other accessory building or structure.

(b) In residential zoning districts, Accessory Ground-Mounted Solar Energy Systems should be located in side or rear yards, to the extent practical.

Large-Scale Solar Energy Systems

Appropriate Locations. (a) Communities should conduct a thorough review of all their zoning districts to determine in which Large-Scale Solar Energy Systems would be appropriate. As a general rule of thumb, Industrial Zoning Districts and Agricultural Zoning Districts would be appropriate, as would some Rural and Low-Density Residential Zoning Districts and some Commercial Zoning Districts. Other Zoning Districts may also be suited for such energy systems.

(b) Where the municipality's comprehensive plan does not address renewable energy systems, add language indicating the critical nature of these systems to our energy future and identify the types of areas where they are appropriate.

Height. Large-Scale Solar Energy Systems should be required to meet the same height restrictions as an accessory building or structure.

**See the notes section of this report for additional information about this recommendation.

Recommendations: Solar Energy Systems, cont.

Location on a Property. Large-Scale Solar Energy Systems should be required to meet the same setbacks as any other principal building, but not be required to have more than 30 foot rear or side setbacks.

Approval Process. Large-Scale Solar Energy Systems should be permitted either with a special use permit or with a site plan review and a public hearing on proposals should be required.

***Decommissioning*. There is no specific recommendation concerning decommissioning. Refer to the NYSERDA Decommissioning Fact Sheet for guidance.

***Glare from Systems*. When located where glare may be an issue for specific uses, communities should require the preparation of a glare analysis for proposed Large-Scale Solar Energy Systems.

***Stormwater Management.* Unless located over an existing parking lot or other already-paved area, a vegetative cover should be established and maintained underneath solar panels in Large-Scale Solar Energy Systems. Management of that vegetative cover should be reviewed as part of the local municipal review of the project. Natural hydrology should be maintained to the maximum extent practical and stormwater management plans required only when already required by a municipality's stormwater management law or where hydrology is being significantly modified.

Screening. Screening of Large-Scale Solar Energy Systems should only be required to address site-specific conditions identified during local municipal review.

***Agricultural Resources.* Large-Scale Solar Energy Systems should avoid large extents (10 acres or more) of actively-farmed prime agricultural soils. Land underneath solar panels within agricultural areas should be maintained as vegetative cover. For any proposed disturbance of ten acres or more of prime agricultural soils, communities should consider the value of requiring a soil reclamation plan and related financial guarantee of plan implementation.

***Natural Resources.* (a) Large-Scale Solar Energy Systems should avoid Critical Environmental Areas, Unique Natural Areas, slopes in excess of 15%, clearing extensive areas of forest, and previously-identified distinctive viewsheds. Any systems located in these areas should be required to take appropriate mitigation measures.

(b) NYS DEC regulated wetlands should be avoided. Development in federally-identified wetlands should be avoided, but could be considered where wetland hydrological function can be maintained and no endangered or threatened species would be impacted.

(c) Habitat loss, habitat fragmentation, and wildlife corridors should be reviewed for potential impacts on a case-by-case basis.

***Water Quality.* Large-Scale Solar Energy Systems should be prohibited within 100-foot buffers of perennial streams and 50-foot buffers of intermittent streams.

Flood Hazard Areas. Large-Scale Solar Energy Systems, including any related fill, should be prohibited within 100-year floodplains. Any incidental and unavoidable development within the floodplain should be required to assess changes to flood levels, runoff quantity, and velocity resulting from any structure, facility, or fill within a floodplain. No structure, facility, or fill of any kind should be permitted within a floodway.

**See the notes section of this report for additional information about this recommendation.

Recommendations for Municipal Tools to Promote and Regulate the Deployment of Wind Energy Systems

Small-Scale Wind Energy Systems

Appropriate Locations. Small-Scale Wind Energy Systems consisting of a single turbine should be a permitted as-of-right accessory use throughout the community.

***Setbacks*. Setbacks for Small-Scale Wind Energy Systems from lot lines should be the total height of the installation plus 10 feet, unless the affected adjoining property owner agrees otherwise in writing. This setback should be measured from the center of the tower.

Location on a Property. In residential zoning districts, Small-Scale Wind Energy Systems should be located in the side or rear yards, to the extent practical.

Height. Small-Scale Wind Energy Systems should be allowed to exceed otherwise-established maximum height requirements.

Medium-Scale Wind Energy Systems

Appropriate Locations. Communities should conduct a thorough review of all their zoning districts to determine in which Medium-Scale Wind Energy Systems would be appropriate. As a general rule of thumb, Industrial Zoning Districts and Agricultural Zoning Districts would be appropriate, as would some Rural Zoning Districts and some Commercial Zoning Districts. Other Zoning Districts may also be suited for such energy systems.

(b) Where the municipality's comprehensive plan does not address renewable energy systems, add language indicating the critical nature of these systems to our energy future and identify the types of areas where they are appropriate.

Approval Process. Medium-Scale Wind Energy Systems should be permitted through a site plan review process in order to ensure that proposed installations comply with the standards established by the community.

***Setbacks.* (a) Setbacks for Medium-Scale Wind Energy Systems from lot lines should be 1.5 times the total height of the installation.

(b) Setbacks from neighboring residences, schools, churches, and libraries should be 2 times the total height of the installation, unless the affected adjoining property owner agrees otherwise in writing.

Height. Medium-Scale Wind Energy Systems should be allowed to exceed otherwise-established maximum height requirements.

***Natural Resources*. Medium-Scale Wind Energy Systems should avoid Critical Environmental Areas, Unique Natural Areas, slopes in excess of 15%, and clearing extensive areas of forest. Any systems located in these areas should be required to take appropriate mitigation measures.

***Scenic Resources*. Medium-Scale Wind Energy Systems located in previously-identified distinctive or noteworthy viewsheds should be required to prepare a visual impact analysis.

**See the notes section of this report for additional information about this recommendation.

Recommendations: Wind Energy Systems, cont.

Large-Scale Wind Energy Systems

Approval Process. Large-Scale Wind Energy Systems should be permitted either with a special use permit or with a site plan review and a public hearing on proposals should be required.

***Setbacks.* (a) Setbacks for Large-Scale Wind Energy Systems from lot lines should be 1.5 times the total height of the installation.

(b) Setbacks from neighboring residences, schools, churches, and libraries should be 2 times the total height of the installation, unless the affected adjoining property owner agrees otherwise in writing.

Height. Large-Scale Wind Energy Systems should be allowed to exceed otherwise-established maximum height requirements.

***Decommissioning*. There is no specific recommendation concerning decommissioning. Refer to the NYSERDA Decommissioning Fact Sheet for guidance.

***Stormwater Management.* When stormwater management plans are required by the community under existing stormwater management ordinances, the impacts of towers, roads, utility lines, and all appurtenant facilities should be considered.

***Agricultural Resources*. Proposals for Large-Scale Wind Energy Systems should be reviewed for potential impacts on agricultural operations.

***Natural Resources.* Large-Scale Wind Energy Systems should avoid Critical Environmental Areas, Unique Natural Areas, slopes in excess of 15%, and clearing extensive areas of forest. Any systems located in these areas should be required to take appropriate mitigation measures.

***Water Quality*. (a) Large-Scale Wind Energy Systems should be prohibited within 100-foot buffers of perennial streams and 50-foot buffers of intermittent streams.

(b) Large-Scale Wind Energy Systems should be prohibited in wetlands.

***Scenic Resources.* Large-Scale Wind Energy Systems located in previously-identified distinctive or noteworthy viewsheds should be required to prepare a visual impact analysis.

***Wildlife.* Habitat loss, habitat fragmentation, and impacts on migratory routes and Important Bird Areas should be assessed on a case-by-case basis when proposals are reviewed by municipal officials.

***Birds and Bats.* Large-Scale Wind Energy Systems should be the subject of bird and bat studies performed in accordance with NYSDEC guidelines.

***Shadow Flicker.* Communities should require a preliminary (and, if indicated, a more comprehensive) shadow flicker analysis for all proposed Large-Scale Wind Energy Systems. If shadow flicker will occur for more than 30 hours per year on any one nearby residence or facility, mitigation steps should be required.

***Ice Throw.* No additional recommendations are provided for ice throw as the recommended setbacks are designed, in part, to minimize the impact of ice throw.

***Noise and Vibration.* Communities should <u>either</u> (a) establish the following noise standards to be measured at neighboring residences, schools, churches, and libraries:

- a design goal of 40 dBA;
- a long-term average sound limit of 45 dBA; and
- a short-term (10-20 minute) maximum sound limit of 50 dBA; <u>or</u>

(b) if the community wishes to use setbacks <u>instead of</u> sound measurements to address noise impacts, require that wind turbines be set back from residences, schools, churches and libraries by at least 1,150 feet.

**See the notes section of this report for additional information about this recommendation.