

Memorandum

City of Las Vegas Planning & Development

To: Planning Commission Members

From: Flinn Fagg, Planning Manager

CC: Margo Wheeler, Planning & Development Director

Date: 22 May 2009

Re: May 28th Planning Commission Meeting, Agenda Item #34 – Small Wind Energy Systems (TXT-33703)

Attached is a revised version of the small wind system text amendment, which is intended to replace the version that was included in your backup materials for the 28 May 2009 Planning Commission meeting. Please note the following changes as summarized below:

Requirement	Existing	4/23/09 Proposal	5/28/09 Proposal
Minimum Parcel Size	▪ 2 acres	▪ No minimum size	▪ No minimum size
Permitted Districts	▪ R-A, R-E, R-D	▪ Added R-1, P-R, O, C-1, C-2, C-PB, C-M, M	▪ Same districts as 4/23/09 proposal
Configuration	▪ Tower mount	▪ Tower mount	▪ Parcels under 20,000 SF: mounted on principal building ▪ Parcels over 20,000 SF: tower mount or mounted on principal building
Height	▪ 2 acres: 90' ▪ 5 acres: 110'	▪ R-D, R-1, P-R: 50' ▪ R-A, R-E: 65' ▪ All others: 90'	▪ Parcels under 20,000 SF: not to exceed 10' above roof ▪ Parcels over 20,000 SF: 65' for residential, 90' for commercial
Setbacks	▪ R-D: Front – 30'; Side & Rear – 10' ▪ R-A, R-E: Front & Side – 50'; Rear – 10'	▪ 0.9 times tower height from all property lines ▪ 1.0 times tower height from occupied structures on adjacent properties	▪ Parcels under 20,000 SF: per district setbacks ▪ Parcels over 20,000 SF: greater of district setback or 1.0 times tower height from occupied structures on adjacent properties
Quantity	▪ Not specified	▪ Not specified	▪ 1 system permitted by right; SUP required for additional systems
Noise	▪ 60dBA	▪ No change	▪ Installed and maintained so not to exceed 60dBA
FAA Regulations	▪ Compliance with FAA regulations required	▪ FAA approvals required @ building permit	▪ No changes

While we believe this proposal to be equitable, please note that the final language of this text amendment will need to be reviewed by the City Attorney for conformance with NRS 278.0208, which prohibits unreasonable restrictions on solar or wind energy systems.

I have also included photos of several different configurations of small wind systems, as a demonstration of the different range of systems that are available.

Submitted at Planning Commission

Date 5-28-09 item 34

Table 2 – Land Use Table
Utilities, Communications & Transportation

USE	RESIDENTIAL												COMMERCIAL					INDUSTRIAL			
Small Wind Energy System (Ord. 5934 – 09/19/07)	U	R-A	R-E	R-D	R-1	R-CL	R-2	R-3	R-4	R-5	R-MH	R-MHP	P-R	N-S	O	C-D	C-1	C-2	C-PB	C-M	M
		C	C	C	C								C		C		C	C	C	C	C
Description: A wind energy conversion system consisting of a wind turbine, <u>a tower or supporting structure</u> , and associated control or conversion electronics, which has a rated capacity of not more than 100kW and which is intended primarily to reduce on-site consumption of utility power. The use is not to be deemed an accessory structure.																					
Conditional Use Regulations: 1. The minimum parcel size shall be two acres (net). *1 <u>2. No small wind energy system is eligible for approval if all or part of the property is within a conservation easement or scenic highway corridor, or is listed on the State or National Registers of Historic Places, unless the applicant submits satisfactory evidence that the addition of a small wind energy system is not a violation of the rules that govern the development of the property.</u> 3 <u>2. The tower height (meaning the height above grade of the fixed portion of the tower, excluding the wind turbine itself) may not exceed the lesser of the following:</u> a. The maximum height recommended by the manufacturer or distributor of the system, as demonstrated by evidence included with the application; or b. A height of 90 feet for a parcel less than 2 net acres in size, or a height of 110 feet on a parcel of 5 net acres or more in size. <u>For parcels under 20,000 square feet in size, the following regulations shall apply:</u> a. The small wind energy system shall be directly mounted or attached to the principal structure on the site. b. The small wind energy system shall not extend more than 10 feet above the highest point of the roof of the principal structure, as measured to the highest point of the fixed structure to which the system is attached but excluding the wind turbine. 3. For parcels 20,000 square feet in size or larger, the following regulations shall apply: a. The small wind energy system may be directly mounted to the principal structure, or may be mounted on a freestanding tower. It is encouraged that the system be integrated with other structures wherever possible, such buildings, light poles or on-premise sign structures, so as to minimize visual impacts. b. The height of the structure to which the system is attached shall be limited to 65 feet for residential parcels, and shall be limited to 90 feet for commercial or industrial parcels, as measured to the highest point of the structure to which the system is attached but excluding the wind turbine. c. When mounted to a freestanding tower, the tower and any guy-wires or other supports shall comply with all minimum setbacks for the property. In addition, the tower shall be set back a minimum of 1.0 times the tower height from any occupied structure on an adjacent property. 4. In the R-D Zoning District, the entire system must be set back at least 30 feet from the front property line and at least 10 feet from the side and rear property lines. In the R-A and R-E Zoning Districts, the entire system must be set back at least 50 feet from the front and side property lines, and at least 10 feet from the rear property line. <u>No more than one small wind energy system shall be permitted on a parcel of land. Requests for additional small wind energy systems on a parcel shall require the submittal of a Special Use Permit application.</u> 5. No part of a system, including guy wire anchors, may be closer to any residential building or outbuilding than the sum of the following distances: the length of the tower, plus half the length of the blade diameter, plus an additional 10 feet. 6 <u>*5. A The system shall be constructed and maintained so that noise levels of the system do not exceed 60dBA, as measured by a sound level meter at the closest neighboring inhabited dwelling. However, this level may be exceeded during short term events such as utility outages or severe severe windstorms.</u> 7 <u>*6. The applicant must submit proof of turbine certification approved under the Emerging Technologies program of the California Energy Commission or any other small wind certification program recognized by the American Wind Energy Association.</u> 8 <u>*7. A system must comply with applicable FAA regulations, including any necessary approvals for installations close to airports. Necessary approvals must be received prior to submittal to city for a building permit. For locations within the Airport Overlay District, the system must comply with all regulations and requirements applicable to that district.</u> 9 <u>*8. A system must comply with all applicable fire codes and building codes.</u> 10 <u>*9. A building permit application for a system must be accompanied by:</u> a. Standard drawings of the wind turbine structure including base, tower and footings; b. An engineering analysis of the tower showing compliance with the International Building Code and certified by a licensed professional engineer; and c. A line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. 11 <u>*10. Before the installation of a system, the applicant must provide satisfactory evidence that the electrical utility provider has been informed of the applicant's intent to install a system. An off-grid system shall be exempt from this requirement if the property is not served by an electrical utility provider.</u> 12 <u>*11. No system shall be erected or moved onto any lot prior to construction of the main building unless a building permit has been issued for the construction of the main building.</u> 13. The Special Use Permit provision of Section 19.04.040(B) do not apply to this use. On-site Parking Requirement: No additional parking required beyond that which is required for the principal use(s) on the site.																					

Examples of Small Wind Energy Systems



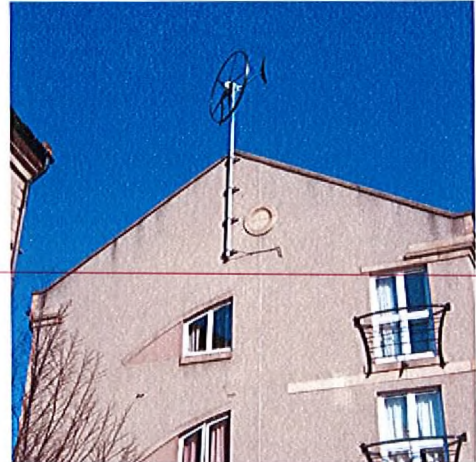
Roof-mounted vertical axis system
Manufacturer: Cleanfield Energy
Location: Blacksburg, Virginia



Roof-mounted horizontal axis system
Manufacturer: AeroVironment
Location: California



Ground-mounted vertical axis system
Manufacturer: Windspire
Location: North Carolina



Wall-mounted horizontal axis system
Manufacturer: Swift (Cascade Engineering in U.S.)
Location: Netherlands



Roof-mounted horizontal axis system
Manufacturer: Aerotecture International
Location: Chicago, Illinois