

1 **ALTERNATE VERSION**

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3
4 AN ORDINANCE TO ESTABLISH CITY ZONING
5 ORDINANCE REGULATIONS PERTAINING TO WIND
6 ENERGY CONVERSION SYSTEMS, INCLUDING
7 DEFINITIONS, APPLICATION REQUIREMENTS,
8 LOCATIONAL AND OTHER REQUIREMENTS, AND
9 ZONING DISTRICTS WHERE PERMITTED

10 Sections Amended: City Zoning Ordinance Sections 111,
11 202, 301, 401, 501, 601, 701, 801, 901, 1001, 1501, 1511
12 and 1521

13
14 Sections Added: City Zoning Ordinance Sections 209 and
15 242.5

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17 WHEREAS, the public necessity, convenience, general welfare and good zoning
18 practice so require;

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20 BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF VIRGINIA BEACH,
21 VIRGINIA:

22 That Sections 111, 202, 301, 401, 501, 601, 701, 801, 901, 1001, 1501, 1511 and
23 1521 of the City Zoning Ordinance, pertaining to wind energy conversion systems, are
24 hereby amended and reordained, and new Sections 209 and 242.5 are hereby added, to
25 read as follows:

26 **Sec. 111. Definitions**

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28 Wind energy conversion system. Any device, such as a windmill, wind turbine or
29 wind charger, that converts wind energy into electricity, including the rotors, nacelles,
30 generators, towers and associated control or conversion electronics.

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32 Wind energy conversion system, freestanding. A wind energy conversion system
33 other than roof-mounted.

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35 Wind energy conversion system, roof-mounted. A wind energy conversion system
36 affixed to the roof of a building or other structure.

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39 **COMMENT**

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41 **The section defines wind energy conversion systems and classifies them as either freestanding**
42 **or roof-mounted.**

43

44 **Sec. 202. Height regulations.**

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46 (a) Whenever height limits for buildings and other structures are established, no
47 portion of any building or other structure shall extend above such height limits, except
48 residential chimneys, ~~line-of-sight relaying devices~~ communication towers, broadcasting
49 towers, radio or television antennas, spires, flagpoles, water tanks, roof-mounted wind
50 energy conversion systems or monuments otherwise approved for erection; provided,
51 however, that smokestacks may also extend beyond such limits, if they do not exceed in
52 height the distance to the nearest lot line; and further provided that one tower for
53 purposes of an amateur radio station operation, which may contain multiple antennas,
54 may extend beyond said height limits but shall not exceed ninety (90) feet in height above
55 ground elevation.

56
57 (b) No artificial structure or tree or other natural growth which on the basis of its
58 height would constitute an obstruction to air navigation pursuant to Part 77 of the Federal
59 Aviation Administration Regulations, 14 C.F.R. §§ 77.21 et seq. shall be allowed in any
60 district. The director of the department of planning shall prepare a map delineating
61 geometric specifications and height limitations for protecting navigable airspace in
62 compliance with Part 77 of the Federal Aviation Administration Regulations, 14 C.F.R. §§
63 77.21 et seq.

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65 **COMMENT**

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67 The amendment allows roof-mounted wind energy conversion systems to exceed the height
68 limits otherwise applicable in the various zoning districts within the City. The proposed Section
69 242.5, which appears immediately below, contains independent limitations on the height of wind
70 energy conversion systems, both roof-mounted and freestanding.

71
72 The amendment on Line 48 is a technical correction that replaces the term “line-of-sight
73 relaying devices” with the currently-used term, “communication towers.” It is not related to the
74 regulation of wind energy conversion systems.

75
76 **Sec. 209 Wind Energy Conversion Systems.**

77
78 (a) Purpose. The purpose of this section is to promote the use of renewable
79 energy sources by allowing wind energy conversion systems in appropriate locations
80 while minimizing visual, safety and environmental impacts and promoting the safe,
81 effective and efficient use of such systems.

82
83 (b) Application requirements.

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85 (1) Conditional use permit applications. In addition to the information
86 required by Section 221, applications for a conditional use permit for
87 a wind energy conversion system shall include the following items:

88
89 (A) A site plan or plan drawn to scale, showing the location,
90 height and design of the proposed system, including any

91 accessory buildings or other appurtenances, adjacent land
92 uses, and any other applicable information required by the
93 Planning Director;

94
95 (B) A certification from a professional engineer licensed in the
96 Commonwealth of Virginia that the proposed system complies
97 with all applicable regulations and requirements of the Virginia
98 Uniform Statewide Building Code and Federal Aviation
99 Administration;

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101 (C) A certification from a professional engineer licensed in the
102 Commonwealth of Virginia that the structure upon which the
103 proposed wind energy conversion system is to be mounted
104 will have the structural integrity to carry the weight and wind
105 loads of the wind energy conversion system and have minimal
106 vibration impacts on the structure; and

107
108 (D) Elevation drawings, computer-generated photographic
109 simulations, or such other documentation as the Planning
110 Director may require that depict how the proposed wind
111 energy conversion system, including accessory buildings, will
112 appear as constructed on the proposed site; provided,
113 however, that this requirement shall not apply if the proposed
114 wind energy system is allowed as a principal use.

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116 (2) Building permit/site development plan applications. In addition to
117 information otherwise required by ordinance, applications for building
118 permits or site development plans shall include the information
119 specified in subdivisions (A), (B) and (C).

120
121 (c) Lot area, setback, height, etc. requirements. Wind energy conversion
122 systems shall be subject to the following requirements:

123
124 (1) Lot area. Minimum lot area requirements for wind energy conversion
125 systems shall be as follows:

126
127 (A) For freestanding wind energy conversion systems outside of
128 Residential Districts, forty thousand (40,000) square feet plus
129 an additional twenty thousand (20,000) square feet for each
130 such system in excess of one (1);

131
132 (B) For roof-mounted wind energy conversion systems, the
133 minimum lot area specified in the district regulations; and

134
135 (C) For wind energy conversion systems allowed as a conditional
136 use, the City Council may approve an application in which the

137 subject property fails to meet the specified minimum lot area
138 requirements upon a finding that the proposed system is of
139 such size or in such location, or that the conditions attached to
140 the conditional use permit are sufficiently restrictive, that the
141 deficiency in lot area will not result in any adverse effects
142 upon surrounding properties. The Planning Director shall
143 include in his report to the Planning Commission the specific
144 factors, if any, that would support the granting of a conditional
145 use permit on lots that fail to meet the minimum lot area
146 requirements of this section.

147
148 (2) *Setbacks.*
149

150 (A) No tower in any freestanding wind energy conversion system
151 shall be located closer to any property line or public right-of-
152 way than a distance equal to one hundred ten per cent
153 (110%) of the height of the tower or the setback specified in
154 the applicable district regulations, whichever is greater, or
155 closer to any residential structure or overhead utility
156 transmission line than a distance equal to one hundred ten
157 per cent (110%) of the height of the tower.

158
159 (B) No support structure of a freestanding wind energy conversion
160 system, including guy wires, shall be located in any required
161 front yard or any required side yard adjacent to a street.
162

163 (3) *Height.*
164

165 (A) Unless otherwise specified in this section or the conditional
166 use permit, wind energy conversion systems shall be subject
167 to the height regulations of the zoning district in which they
168 are located; provided, that in no event shall the height of any
169 such system exceed that recommended by the manufacturer.
170

171 (B) The height of a freestanding wind energy conversion system
172 shall be measured as the distance from ground level to the
173 highest point on the tower, including the vertical length of any
174 extensions such as rotor blades. The height of a roof-mounted
175 wind energy conversion system shall be measured as the
176 distance from the point at which the base of the system is
177 attached to the building or the lowest point of any component
178 of the wind energy conversion system, whichever is lower, to
179 the highest point on the wind energy conversion system,
180 including the vertical length of any extensions such as rotor
181 blades.

182 (C) Notwithstanding any contrary height limitation specified in the
183 district regulations, roof-mounted wind energy conversion
184 systems may project a maximum of eight (8) feet above the
185 roofline of the structure on which they are located unless a
186 greater height is allowed by the conditional use permit.

187
188 (D) The minimum rotor clearance of freestanding wind energy
189 conversion systems shall be twenty-five (25) feet above
190 ground level for systems incorporating horizontal-axis turbines
191 and ten (10) feet for systems incorporating vertical-axis
192 turbines.

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194 (4) Signage. No signage, other than safety and warning signs, shall be
195 allowed.

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197 (5) Tower construction. All freestanding towers shall be of monopole
198 construction, without guy wires or visible anchors, unless allowed by
199 the conditional use permit.

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201 (6) Noise. The highest level of noise generated by the system, as
202 measured at any adjoining property line, shall not exceed an A-
203 weighted decibel level of 55 dB(A).

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205 (7) Illumination. No portion of a system shall be illuminated unless
206 required by the Federal Aviation Administration.

207
208 (8) Siting. Systems shall be sited in a manner to minimize shadowing
209 and flickering effects on any adjacent property.

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211 (9) Electrical connections. All electrical controls, control wiring and
212 power lines shall be located underground or otherwise hidden from
213 view.

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215 (10) Braking. All systems shall be equipped with a redundant braking
216 system that engages at wind speeds in accordance with the
217 manufacturer's specifications so as to minimize the potential for wind
218 damage to the system or its supporting structure.

219
220 (11) Unless otherwise required by the Federal Aviation Administration or
221 other governmental authority or allowed by the conditional use
222 permit, all portions of a wind energy conversion system shall be of a
223 non-reflective white, black, galvanized steel, aluminum or other
224 matte-finish color designed to blend with the surrounding
225 environment; provided, however, that blades may be painted black to
226 facilitate deicing. Where more than one system is located on a lot,
227 all such systems shall be of a uniform appearance.

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(d) Inspections. All wind energy conversion systems, including all associated equipment, shall be inspected every two (2) years to ensure compliance with this section and the conditional use permit. The report of such inspection shall be provided to the Planning Director.

(e) Discontinuance. Any wind energy conversion system that is not in use for a period of one (1) year shall be removed within ninety (90) days after notification by the Planning Director.

COMMENT

Subsection (a) [lines 78-81] states that the purpose of the wind energy system section is to promote energy conservation by allowing wind energy conversion systems while minimizing the safety, visual and environmental impacts of such systems.

Subsection (b) sets forth the conditional use permit application requirements [lines 83-114] and requirements for site plans and building permit applications [lines 116-119].

Subsection (c) [lines 121-227] sets forth requirements pertaining to lot area, setbacks, height, structural standards, lighting, signage, noise, appearance, shadowing/flickering, electrical connections and braking.

Subsection (d) [lines 227-230] requires an inspection every two years and submission of the inspection report to the Planning Director.

Subsection (e) [lines 232-234] requires the removal of the system if it is not used for one year.

Sec. 242.5. Wind energy conversion systems.

In addition to general requirements, wind energy conversion systems shall be subject to the provisions of Section 209.

COMMENT

The section provides that wind energy conversion systems allowed as conditional uses shall be subject to the provisions of Section 209 of the City Zoning Ordinance.

Sec. 301. Use regulations [Preservation District].

(a) *Principal and conditional uses.* The following chart lists those uses permitted within the P-1 Preservation District. Those uses and structures shall be permitted as either principal uses indicated by a "P" or as conditional uses indicated by a "C." No uses or structures other than as specified shall be permitted.

<i>USE</i>	<i>P-1</i>
.....	
<u>Wind energy conversion systems, freestanding</u>	<u>C</u>
<u>Wind energy conversion systems, roof-mounted</u>	<u>C</u>

COMMENT

The amendments allow freestanding and roof-mounted wind energy conversion systems (WECS) as conditional uses in the P-1 Preservation District.

Sec. 401. Use regulations [Agricultural Districts].

(a) Principal and conditional uses. The following chart lists those uses permitted within the AG-1 and AG-2 Agricultural Districts. Those uses and structures in the respective agricultural districts shall be permitted as either principal uses indicated by a "P" or as conditional uses indicated by a "C." Uses and structures indicated by an "X" shall be prohibited in the respective districts. No uses or structures other than as specified shall be permitted.

<i>USE</i>	<i>AG-1</i>	<i>AG-2</i>
.....		
<u>Wind energy conversion systems, freestanding, except as provided below</u>	<u>P</u>	<u>P</u>
<u>Wind energy conversion systems, freestanding, in excess of one (1)</u>	<u>C</u>	<u>C</u>
<u>Wind energy conversion systems, roof-mounted, except as provided below</u>	<u>P</u>	<u>P</u>
<u>Wind energy conversion systems, roof-mounted, in excess of one (1)</u>	<u>C</u>	<u>C</u>

COMMENT

The amendments allow one freestanding wind energy conversion system (WECS) and one roof-mounted WECS as principal uses in the AG-1 and AG-2 Agricultural Districts. Two or more such systems are allowed as conditional uses.

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Sec. 501. Use regulations [Residential Districts].

(a) *Principal and conditional uses.* The following chart lists those uses permitted within the R-40 through R-2.5 Residential Districts. Those uses and structures in the respective residential districts shall be permitted as either principal uses indicated by a "P" or as conditional uses indicated by a "C." Uses and structures indicated by an "X" shall be prohibited in the respective districts. No uses or structures other than as specified shall be permitted.

Use	R-40	R-30	R-20	R-15	R-10	R-7.5	R-5D	R-5R	R-5S	R-2.5
.....										
<u>Wind energy conversion systems, freestanding, except as provided below</u>	P	P	P	P	X	X	X	X	X	X
<u>Wind energy conversion systems, freestanding, in excess of one (1)</u>	C	X	X	X	X	X	X	X	X	X
<u>Wind energy conversion systems, roof-mounted, except as provided below</u>	P	P	P	P	P	P	P	P	P	X
<u>Wind energy conversion systems, roof-mounted, in excess of one (1)</u>	C	C	C	C	C	X	X	X	X	X

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COMMENT

The amendments allow one freestanding wind energy conversion system (WECS) as a principal use in the R-40 through R-15 Residential Districts. Two or more such systems are allowed as conditional uses in the R-40 District. One roof-mounted WECS is allowed as a principal use in

349 the all Residential Districts except the R-2.5 Residential Townhouse District. Two or more such
 350 systems are allowed as conditional uses in the R-40 through R-10 Residential Districts.
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352 **Sec. 601. Use regulations [Apartment Districts]**
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354 (a) Principal and conditional uses. The following chart lists those uses permitted
 355 within the A-12 through A-36 Apartment Districts. Those uses and structures in the
 356 respective apartment districts shall be permitted as either principal uses indicated by a
 357 "P" or as conditional uses indicated by a "C." Uses and structures indicated by an "X"
 358 shall be prohibited in the respective districts. No uses or structures other than as
 359 specified shall be permitted.

360 Use	A-12	A-18	A-24	A-36
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364 <u>Wind energy conversion</u> 365 <u>systems, freestanding</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>
368 <u>Wind energy conversion</u> 369 <u>systems, roof-mounted</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>

372 **COMMENT**

373 The amendments allow freestanding and roof-mounted wind energy conversion systems as a
 374 conditional use in all Apartment Districts.
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 378 **Sec. 701. Use regulations [Hotel District]**
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380 (a) *Principal and conditional uses.* The following chart lists those uses permitted
 381 within the H-1 Hotel District. Those uses and structures in the district shall be permitted
 382 as either principal uses indicated by a "P" or as conditional uses indicated by a "C." Uses
 383 and structures indicated by an "X" shall be prohibited in the district. No uses or structures
 384 other than as specified shall be permitted
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386 Use	H-1
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390 <u>Wind energy conversion systems,</u> 391 <u>roof-mounted, except as provided</u> 392 <u>below</u>	<u>P</u>
394 <u>Wind energy conversion systems,</u> 395 <u>roof-mounted, in excess of one (1) per</u> 396 <u>principal structure</u>	<u>C</u>

COMMENT

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The amendments allow one (1) roof-mounted wind energy conversion system (WECS) as a principal use in H-1 Hotel District and more than one such WECS per principal structure as a conditional use in the district.

Sec. 801. Use regulations [Office Districts].

(a) *Principal and conditional uses.* The following chart lists those uses permitted within the O-1 and O-2 Office Districts. Those uses and structures in the respective office districts shall be permitted as either principal uses indicated by a "P" or as conditional uses indicated by a "C." Uses and structures indicated by an "X" shall be prohibited in the respective districts. No uses or structures other than as specified shall be permitted.

<i>USE</i>	O-1	O-2
. . . .		
<u>Wind energy conversion systems, freestanding</u>	<u>C</u>	<u>C</u>
<u>Wind energy conversion systems, roof-mounted, except as provided below</u>	<u>P</u>	<u>P</u>
<u>Wind energy conversion systems, roof-mounted, in excess of one (1)</u>	<u>C</u>	<u>C</u>

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COMMENT

The amendments allow freestanding wind energy conversion systems (WECS) as a conditional use in the O-1 and O-2 Office Districts. They also allow one (1) roof-mounted WECS as a principal use in the district and more than one WECS as a conditional use.

Sec. 901. Use regulations [Business Districts].

(a) *Principal and conditional uses.* The following chart lists those uses permitted within the B-1 through B-4K Business Districts. Those uses and structures in the respective business districts shall be permitted as either principal uses indicated by a "P" or as conditional uses indicated by a "C." Uses and structures indicated by an "X" shall be prohibited in the respective districts. No uses or structures other than as specified shall be permitted.

<i>USE</i>	B-1	B-1A	B-2	B-3	B-3A	B-4	B-4C	B-4K
. . . .								
<u>Wind energy conversion systems, freestanding, except as provided below</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>

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434	<u>Wind energy conversion systems,</u>							
435	<u>freestanding, in excess of</u>							
436	<u>one (1)</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
437								
438	<u>Wind energy conversion systems,</u>							
439	<u>roof-mounted, except as provided</u>							
440	<u>below</u>	<u>P</u>						
441								
442	<u>Wind energy conversion systems,</u>							
443	<u>roof-mounted, in excess of one (1)</u>							
444	<u>per principal structure</u>	<u>C</u>						
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COMMENT

448
 449 **The amendments allow one (1) freestanding wind energy conversion system (WECS) as a**
 450 **principal use in the B-1, B-1A and B-2 Business Districts, and more than one (1) WECS as a**
 451 **conditional use in the same districts. They also allow one roof-mounted WECS per principal**
 452 **structure as a principal use and more than one roof-mounted WECS per principal structure as a**
 453 **conditional use in all Business Districts.**

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 455 **Sec. 1001. Use regulations [Industrial Districts].**

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 457 (a) *Principal and conditional uses.* The following chart lists those uses
 458 permitted within the I-1 and I-2 Industrial Districts. Those uses and structures in the
 459 respective industrial districts shall be permitted as either principal uses indicated by a "P"
 460 or as conditional uses indicated by a "C." Uses and structures indicated by an "X" shall
 461 be prohibited in the respective districts. No uses or structures other than as specified
 462 shall be permitted.

Use	I-1	I-2
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COMMENT

The amendments allow two (2) freestanding wind energy conversion system (WECS) as a principal use in the I-1 and I-2 Industrial Districts, and more than two (2) as a conditional use in the same districts. They also allow one (1) roof-mounted WECS per principal structure as a principal use and more than one (1) roof-mounted WECS per principal structure as a conditional use in both Industrial Districts.

Sec. 1501. Use Regulations [RT-1 Resort Tourist District]

(a) The following chart lists those uses permitted within the RT-2 Resort Tourist District as either principal uses, as indicated by a "P," or as conditional uses, as indicated by a "C." Conditional uses shall be subject to the provisions of Part C of Article 2 (section 220 et seq.). Buildings within the RT-2 District may include any principal or conditional uses in combination with any other principal or conditional uses. No uses or structures other than those specified shall be permitted. All uses, whether principal or conditional, should to the greatest extent possible adhere to the provisions of the Oceanfront Resort Area Design Guidelines.

<i>Use</i>	<i>RT-1</i>
.....	
<u>Wind energy conversion systems, roof-mounted, except as provided below</u>	<u>P</u>
<u>Wind energy conversion systems, roof-mounted, in excess of one (1) per principal structure</u>	<u>C</u>

COMMENT

The amendments allow one (1) roof-mounted wind energy conversion system (WECS) as a principal use in the RT-1 Resort Tourist District and more than one such WECS per principal structure as a conditional use in the district.

Sec. 1511. Use Regulations [RT-2 Resort Tourist District]

(a) The following chart lists those uses permitted within the RT-2 Resort Tourist District as either principal uses, as indicated by a "P" or as conditional uses, as indicated by a "C." Conditional uses shall be subject to the provisions of Part C of Article 2 (section 220 et seq.). No uses or structures other than those specified shall be permitted. All uses, whether principal or conditional, should to the greatest extent possible adhere to the provisions of the Oceanfront Resort Area Design Guidelines.

531 Use RT-2
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534 Wind energy conversion systems,
535 roof-mounted, except as provided P
536 below

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538 Wind energy conversion systems,
539 roof-mounted, in excess of one (1) per
540 principal structure C

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542 **COMMENT**

543
544 The amendments allow one (1) roof-mounted wind energy conversion system (WECS) as a
545 principal use in the RT-2 Resort Tourist District and more than one such WECS per principal
546 structure as a conditional use in the district.

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549 **Sec. 1521. Use Regulations [RT-3 Resort Tourist District]**

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551 (a) The following chart lists those uses permitted within the RT-3 Resort Tourist
552 District as either principal uses, as indicated by a "P" or as conditional uses, as indicated
553 by a "C." Conditional uses shall be subject to the provisions of Part C of Article 2 (section
554 220 et seq.). Except for single-family, duplex, semidetached and attached dwellings,
555 buildings within the RT-3 District may include any principal or conditional uses in
556 combination with any other principal or conditional use. No uses or structures other than
557 those specified shall be permitted. All uses, whether principal or conditional, should to the
558 greatest extent possible adhere to the provisions of the Oceanfront Resort Area Design
559 Guidelines.

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561 Use RT-3
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565 Wind energy conversion systems,
566 roof-mounted, except as provided P
567 below

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570 Wind energy conversion systems,
571 roof-mounted, in excess of one (1) per
572 principal structure C

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574 **COMMENT**

575
576 The amendments allow one (1) roof-mounted wind energy conversion system (WECS) as a
577 principal use in the RT-3 Resort Tourist District and more than one such WECS per principal
578 structure as a conditional use in the district.

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580 Adopted by the Council of the City of Virginia Beach, Virginia, on this _____ day of
581 _____, 2009
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583
584 CA-10821
585 August 26, 2009
586 R-1