

ORDINANCE NO. _____

CITY OF FRANKFORT
BENZIE COUNTY, MICHIGAN
ZONING ORDINANCE AMENDMENT

THE CITY OF FRANKFORT ORDAINS:

Chapter 8, Article 2: Zoning: General Provisions: Section 8207 is added as "Renewable and Alternative Energy" as follows:

8207.01 Intent

The City of Frankfort, along with the State of Michigan, recognizes the importance of developing renewable, sustainable, and alternative energy sources to supplement and/or replace traditional forms of electrical and fossil fuel based electrical power and heat generation.

1. The first step in any program for the creation of any renewable, sustainable or alternative energy is to conserve and most efficiently use traditional and non-traditional energy forms. The objective is to prevent, to the extent possible, the loss of energy, however created, due to poor construction, inadequate insulation or inefficient applications, or appliance utilization.
2. The second step is to utilize and apply the findings of an Energy Conservation Audit conducted by a licensed Energy Audit professional for the building, residence or facility for which the owner seeks to improve energy conservation.
3. Third, is the selection of traditional and/or alternative energy devices that will increase the efficiency and conservation of heating, cooling and ventilation results for the structure(s).

Guidelines and regulations in this section are designed to provide a process of evaluation and assessment that will improve energy use and efficiency, reduce the relative cost of energy for residential and commercial uses, and result in enhanced safety, health and welfare for the residents of the City of Frankfort and its visitors.

8207.02 Land Use Permit for Renewable and/or Alternative Energy Creation and Storage

1. In all zoning districts, a Land Use Permit is required from the City of Frankfort for the erection, attachment or installation of any structure or device for the creation and for the storage of any form of renewable or alternative energy.
2. Each property owner who desires to introduce alternative methods of energy creation and storage through non-traditional and traditional methods must provide evidence of optimum energy efficiency and conservation for all energy-consuming structures on the property. This evidence must be in the form of a comprehensive audit of the building(s) by a licensed Energy Audit professional.
3. The Application for Land Use Permit for Renewable and/or Alternative Energy Creation within the City of Frankfort must be accompanied by:
 - a. An original copy of a comprehensive Energy Conservation Audit report produced by a licensed Energy Audit professional, in terms of [8207.03 Energy Audit Requirements](#) (below).
 - b. In compliance with the major items for increased energy efficiency and conservation, as identified by the Energy Conservation Audit, a completed labor,

50 construction and materials receipt demonstrating that the recommended building
51 improvements have been performed.

- 52 c. A follow-up report by the Energy Audit professional identifying the completed
53 improvement(s), certifying that energy efficiency has been increased, and
54 identifying what, if any, additional improvements are required to achieve
55 optimum efficiency for the building(s).

56
57 **8207.03 Energy Conservation Audit Requirements**

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59 The Energy Conservation Audit shall include, at a minimum, the following evaluations
60 for energy conservation and efficiency in each energy-consuming building:

- 61
62 1. Insulation of ceiling, sidewalls, crawl spaces, and attics to a level to meet County
63 Building Code requirements for new buildings of the same type and size.
64 2. Installation of double glazed windows, or a combination of weatherproof storm
65 windows with standard single glass windows, to reduce winter heat loss and/or
66 summer heat gain.
67 3. Installation of replacement doors, storm doors, garage doors and side-doors that fit
68 existing openings, reduce heat loss, reduce heat gain, and meet fire code
69 requirements.
70 4. Repair, replacement or conversion of heating and cooling equipment sufficient to
71 meet minimum heating and/or cooling requirements, under existing County Building
72 Code standards to maintain temperature within the building(s).
73 5. Repair, replacement or conversion of roofing materials to meet current building
74 requirements, snow loads, and water, ice, and wind protection under existing building
75 standards.
76 6. Installation of additional structural support to allow the use of existing building for
77 any alternative energy collection structure, e.g. solar panels, wind energy conversion
78 equipment or other collection or distribution device(s) are subject to County Building
79 Code.
80 7. Replacement of energy-consuming appliances, [e.g. washing machines, clothes
81 dryers, refrigerators, freezers, stoves, ovens, air conditioning, furnaces, geo-thermal
82 devices, and other energy consuming devices or equipment, etc] that do not meet the
83 Energy Star compliance and certification objectives.
84 8. Provide sufficient evidence, through receipts, that replacement of lighting, lighting
85 fixtures, bulbs, external heating or cooling devices and other energy-consuming
86 device(s) with the most energy efficient models available are completed.

87
88 **8207.04 Basis of Administration and Enforcement**

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90 Administrative and Enforcement shall be based on Section 8106.

91
92 **8207.05 Solar Panels**

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94 Solar panels shall be allowed in all zoning districts, attached either to permitted principal or
95 accessory buildings, or as accessory structures, subject to the following regulations:

- 96 **1. Attached to Building.** Where attached to a building, the solar panel(s) shall be subject to
97 the same regulations as the building in terms of height and setbacks. Solar panels may be

98 attached to the building's roof or the building's wall, but not to both. All electrical
99 connections must be approved, in advance, by County Building Department inspection and
100 must meet County and State of Michigan building standards and electrical safety
101 requirements. All electrical power transmission lines shall be installed in an approved method
102 and travel underground (if necessary) to point of interconnection with utility grid power lines.

103 **a. Roof-mounted solar panels** shall include solar panels integrated as the surface layer
104 of the roof structure with no additional apparent change in relief or projection, or
105 shall be separate flush-mounted solar panels attached to the roof surface.

106 **i.** Solar panels integrated as the surface layer of the roof structure may be
107 located on any part of the roof.

108 **ii.** Separate flush-mounted solar panels may only be located on a rear or side-
109 facing roof.

110 **iii.** Separate flush-mounted solar panels installed on a building or structure with
111 a sloped roof surface shall not project vertically above the peak of the roof to
112 which attached.

113 **iv.** Solar panels mounted on a flat roof shall not project vertically higher than the
114 height of the parapet wall surrounding the roof and the panels shall be
115 screened by architectural features in accordance with [Sections 8306, Main](#)
116 [Street East, 8307 Main Street West, 8308 Industrial-Entrepreneurial and](#)
117 [8310 Waterfront](#).

118 **b. Flush-mounted solar panels** on the building's wall may be attached to one (1) side
119 or to the rear building façade, and shall not face a front street.

120 **c. Movable solar panels** that track the location of the sun relative to the panels and are
121 moved by mechanical or manual means, shall be illustrated in the Site Plan materials
122 to demonstrate that the maximum elevation, or depression, from horizontal which
123 shall not exceed the maximum height of the roofline or the minimum height of eight
124 feet above ground below the moveable panel. At no time may any movable solar
125 panel endanger the safety of persons approaching or departing from the building or
126 accessory structure. Solar panels, when fully extended in either direction may not
127 extend closer than six (6) feet of any lot line, during any orientation in relation to the
128 sun.

129 **2. Free-standing.** Solar panels not attached to a building shall be permitted as accessory
130 structures subject to the regulations at [Section 8203.02 Accessory Buildings](#) and to the
131 following additional regulations:

132 **a.** Free-standing solar panels are permitted in the rear yard only.

133 **b.** Free-standing solar panels shall be set back the minimum feet from the side and rear
134 lot line, as defined at [Section 8301.04 General Characteristics of Zoning Districts](#)
135 [\(Summary Table\(s\) D & E\)](#).

136 **c.** Free-standing solar panels shall not exceed the height of an accessory building, as
137 stated at [Section 8203.02 Accessory Buildings](#).

138 **d.** The ground surface area covered by a free-standing system shall not exceed
139 **DISCUSSION POINT 6,8 percent (%) of the lot, or 400, 500, 800 square feet,**
140 **whichever is less.** Area covered shall be included in the lot coverage calculations for
141 the building lot, such coverage limited to 40% maximum. (see [Section 8301.04](#)
142 [General Characteristics of Zoning Districts \(Summary Table C. Lot Occupation](#)
143 [Standards for the Zoning District\)](#).

144 **e.** All electrical power transmission lines shall be underground.

145 **f.** Free-standing solar panel(s), associated mounting structure, and other equipment,
146 shall not be visible from adjacent property and must be protected by restrictive
147 landscaping and/or barrier fencing to avoid harm to any person entering or leaving

148 the property, including but not limited to locked fencing structures, warning signs on
149 all sides, and locks and/or alarm devices.

- 150 3. **Glare.** Solar panels shall be placed and arranged such that reflected solar radiation and/or
151 Glare is not directed onto adjacent buildings, properties or roadways.
- 152 4. **Building permit.** Solar energy systems shall conform to applicable industry standards. A
153 Building Permit is required for a solar energy system in accordance with the [County and State](#)
154 [Building and Electrical Codes](#). See reference to building standards [Section 8203.08 Dwelling](#)
155 [Situated Outside of Mobile Home Park, Minimum Requirements](#).
- 156 5. **Storage of electricity on site** is subject to specific location limitations to create a safe and
157 secure structure that will not create or increase the explosion or fire hazard and must meet the
158 requirements of the County Building Department and State Regulations for type and number
159 of batteries employed rated as "Storage Batteries". Annual inspection and replacement of
160 defective and/or inoperable batteries at regular intervals is required.
- 161 6. **Decommissioning and removal** of inoperable, damaged and unused solar panels, electrical
162 generating devices and storage batteries is the responsibility of the property owner. Costs
163 associated with removal and disposal of inoperable, damaged and unused solar panels shall
164 be borne by the property owner. Each decommissioning of solar panels, electrical generating
165 devices and storage batteries shall be concluded within one hundred and eighty (180) days of
166 becoming inoperable or unused. Solar panels, other electrical generating devices and storage
167 batteries, that are damaged are a public nuisance and potentially hazardous to public health
168 and safety, and must therefore be removed within two (2) weeks of the date of the damage.
169 When solar panels or other electrical collecting, storage, or generating devices are removed, a
170 County Building Department and City Zoning Administrator inspection must occur to
171 approve the restoration of the original electrical, structural and safety materials and
172 connections.

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174 **8207.06 Outdoor Wood Stoves and Furnaces**

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176 *A Land Use Permit issued by the Zoning Administration is required for the installation of any*
177 *(i.e., not previously existing) stove or furnace unit that is located outside the principal building*
178 *where permitted in the Rural, North, East and West Residential and Industrial-Entrepreneurial*
179 *Zoning Districts. No Outdoor Stoves or Furnaces are permitted in any other zoning district. The*
180 *Application for a Land Use Permit shall be based on the standards set out in Section 8106. The*
181 *Site Plan and Land Use Permit application shall also be based on the following standards:*

- 182
183 1. **The purpose of the stove/furnace** unit is for the heating air or water for a dwelling, facility,
184 and/or accessory structure(s) on the same lot as the proposed Wood Stove or Furnace.
- 185 2. **Isolation Distance from other structures.** The stove/furnace unit shall be **DISCUSSION**
186 **POINT 10,20,30,40 feet** from any other structure on the lot.
- 187 3. **Location.** The stove/furnace unit shall be located no less than the minimum distance from the
188 lot line setbacks as established at [Section 8301.04 E. Setbacks for Ancillary Buildings from](#)
189 [all property lines](#). The combustion unit and chimney may only be located in a rear yard. The
190 unit shall not be located where smoke will create a nuisance to any neighboring properties.
- 191 4. **Isolation Distance.** Once the stove/furnace is located, no ignitable vegetation, fuel or debris
192 may be planted or stored within an area at least **DISCUSSION POINT thirty (30) feet** in
193 diameter around the unit, and within the property setbacks.
- 194 5. **Chimney Height.** The stove/furnace unit shall utilize a chimney with a minimum height of
195 fifteen (15) feet above ground level.
- 196 6. **Limited Fuel Material.** No fuel or burnable product that could pose a hazard to any person
197 shall be used to create heat. This prohibition includes but is not limited to: any trash, garbage,

198 plastics, gasoline, rubber, naphtha, material treated with petroleum products (particleboard,
199 railroad ties and pressure treated wood), leaves, paper products, cardboard, styrofoam, etc.

200 **7. Federal EPA and State EPA Rules.**

201 **a.** All new installations of a furnace/stove unit shall be qualified by the U.S. Environmental
202 Protection Agency (EPA) and the State Department of Environmental Quality (DEQ) as
203 an "advanced furnace device" at the time of installation on the property.

204 **b.** The new installed unit must comply with Phase 2 list of cleaner burning hydronic heaters
205 having a "**white tag**" indicating that these units are 90% cleaner than unqualified units
206 based on the U.S. EPA voluntary Hydronic Heater and Fireplace Programs Performance
207 Standard; Based on that standard, Annual Average Emission Rate in U.S. EPA (grams/hr)
208 range from 1.5 grams to 10.7 grams for the 37 units listed on the February 8, 2013
209 updated list. (See www.epa.gov/burnwise/owhhist.html) based on the emitted
210 particulate matter in suspension or emitted into the surrounding atmosphere.

211 **c.** An advanced combustion chamber technology or a catalytic converter in working order is
212 required to be maintained for each chimney to eliminate higher amounts of particulate
213 count per hour.

214 **8. Existing Stoves and Furnaces :** The owner of any stove/furnace unit existing on the date of
215 enactment of this ordinance must within one (1) year bring the unit the unit into compliance
216 with current environmental standards through up-grade or replacement of the original unit.
217 The health, welfare and safety of the general public require compliance with air quality and
218 safety standards for all heat generating units using alternative fuel. Violation of this
219 requirement is a Civil Violation subject to penalty and fine by the City of Frankfort.

220 **9. Disposal of Ash, Dust, Creosote, and other hazardous materials** created by Stoves or
221 Furnaces and remaining after combustion shall be transported in a closed container to a
222 sanitary landfill or other state certified disposal facility. No public or private land, water or
223 sewer may be used for disposal. Disposal by any means other than those approved methods
224 increases the risk that hazardous materials and substances in post-combustion materials will
225 remain a public safety and health issue. Violation of disposal standards is a civil offense
226 subject to penalty and fine by the City of Frankfort.

227 END OF EDITS ... BCO 4/2/2013