ORDINANCE NO. ____

WHEREAS, Adamstown Borough Council has conducted a public hearing to consider certain amendments to the Adamstown Borough Zoning Ordinance; and

WHEREAS, prior to the public hearing, the proposed amendments were provided to the Adamstown Borough Planning Commission and to the Lancaster County Planning Commission for comments as provided by law; and

WHEREAS, after a public hearing and after consideration of all information, comments and questions, members of the Council of Adamstown Borough have deemed it beneficial to the residents of Adamstown Borough and to the promotion of the health, safety, morals, convenience, order and welfare of present and future inhabitants of Adamstown Borough to amend the said sections of the Zoning Ordinance.

NOW, THEREFORE, BE IT ORDAINED AND ENACTED, by the Council of Adamstown Borough as follows:

SECTION 1. SECTION 202 IS HEREBY AMENDED TO DELETE THE DEFINITION OF "WIND ROTOR."

SECTION 2. SECTION 202 IS HEREBY AMENDED TO ADD THE FOLLOWING NEW DEFINITIONS:

ALL-WEATHER SURFACE. Any roadway, driveway, alley or parking surface paved with crushed stone, asphalt, concrete or other pervious or impervious material in a manner that will support the weight of anticipated vehicular traffic in all weather conditions and minimize the potential for ruts, potholes or pooling of water.

CLEAN WOOD. The term includes the following:

A. Wood that contains no paint, stains or other types of coatings.

B. Wood that has not been treated with preservatives or chemicals, including copper, chromium arsenate, creosote and pentachlorophenol.

CLOSED HORIZONTAL LOOP GEOTHERMAL SYSTEM. A mechanism for heat exchange which consists of the following basic elements: underground loops of piping; heat transfer fluid; a heat pump; an air distribution system. An opening is made in the Earth. A series of pipes are installed into the opening and connected to a heat exchange system in the building. The pipes form a closed loop and are filled with a heat transfer fluid. The fluid is circulated through the piping from the opening into the heat exchanger and back. The system functions

in the same manner as the open horizontal loop system except there is no pumping of groundwater.

CLOSED VERTICAL LOOP GEOTHERMAL SYSTEM. A borehole that extends beneath the surface. Pipes are installed with U-bends at the bottom of the borehole. The pipes are connected to the heat exchanger and heat transfer fluid is circulated through the pipes.

GEOTHERMAL BOREHOLE. A hole drilled or bored into the earth into which piping is inserted for use in a closed vertical loop geothermal system.

GEOTHERMAL ENERGY SYSTEM. An energy generating system that uses the Earth's thermal properties in conjunction with electricity to provide greater efficiency in the heating and cooling of buildings.

LARGE WIND ENERGY PRODUCTION FACILITY. An area of land or other area used for a wind energy conversion system principally used to capture wind energy and convert it to electrical energy. Large wind energy production facilities consist of one (1) or more wind turbines, tower, and associated control or conversion electronics and other accessory structures and buildings including substations, electrical infrastructure, transmission lines and other appurtenant structures and facilities. A facility is considered a large wind energy production facility if it supplies electrical power principally for off-site use.

OPEN HORIZONTAL LOOP GEOTHERMAL SYSTEM. Water is pumped from a water well or other water source into a heat exchanger located in a surface building. The water drawn from the Earth is then pumped back into the ground through a different well or in some cases the same well, also known as "re-injection". Alternatively, the groundwater could be discharged to a watercourse also known as a "pump and dump". In the heating mode, cooler water is returned to the Earth, and in the cooling mode, warmer water is returned to the watercourse or well.

OUTDOOR WOOD-FIRED BOILER.

A. A fuel-burning device that:

1. Is designed to burn, or is capable of burning clean wood or other fuels listed in 25 Pa. Code Chapter 123, Section 123.14, (relating to outdoor wood-fired boilers).

2. Has a rated thermal output of less than 350,000 Btu per hour.

3. The manufacturer designs or specifies for outdoor installation or installation in structures not normally intended for habitation by humans or domestic animals, including structures like garages and sheds.

4. Heats building space or fluid, or both, through the distribution, typically through pipes, of a fluid heated in the device, typically water or a mixture of water and antifreeze.

B. The fuel-burning device may also be known as an:

1. Outdoor wood-fired furnace.

2. Outdoor wood-burning appliance.

3. Outdoor hydronic heater.

ROOF ACCESS POINTS. Areas where ladders are not placed over openings (i.e., windows or doors) and are located at strong points of building construction and in locations where they will not conflict with overhead obstructions (i.e., tree limbs, wires or signs).

SKYSPACE. The open space between a solar collector or wind turbine and the sun or prevailing wind which must be free of obstructions that may shade or impede the collector to the extent that it would reduce its cost-effective operation.

SMALL WIND ENERGY SYSTEM. A wind energy conversion system consisting of a wind turbine, tower, and associated control or conversion electronics, and is intended to primarily reduce on-site consumption of utility power. A system is considered a small wind energy system only if it supplies electrical power solely for on-site use, except that when a parcel on which the system is installed also receives electrical power supplied by a utility company, excess electrical power generated and not presently needed for on-site use may be used by the utility company.

SOLAR COLLECTOR. A device or combination of devices, structure, or part of a device or structure that transforms direct solar energy into thermal, chemical or electrical energy.

SOLAR ENERGY SYSTEM. A complete design or assembly consisting of a solar energy collector, an energy storage system (where used), and components for the distribution of transformed energy.

STACK. Any vertical structure enclosing a flue or flues that carry off smoke or exhaust from a furnace, especially that part of a structure extending above a roof.

TURBINE HEIGHT. The distance measured from the highest point of the wind turbine rotor plane to the ground level.

WIND CHARGER. A wind-driven direct-current generator used for charging storage batteries.

WINDMILL. A device that runs on the energy generated by a wheel of adjustable blades or slats rotated by the wind.

WIND TURBINE. A device that converts wind energy into electricity through the use of a wind turbine generator, and includes the nacelle, rotor, tower and pad transformer, if any.

WIND TURBINE TOWER. The vertical component of a wind energy conversion system that elevates the wind turbine generator and attached blades above the ground.

SECTION 3. SECTION 202 IS HEREBY AMENDED TO REVISE THE EXISTING DEFINITION OF "WIND ENERGY CONVERSION SYSTEM" AS FOLLOWS:

WIND ENERGY CONVERSION SYSTEM (WECS). A device such as a wind charger, wind turbine or windmill and/or other electric generation facility whose main purpose is to convert wind power into another form of energy such as electricity or heat, consisting of one (1) or more wind turbine and other structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities.

SECTION 4. SUBSECTION 502 C.2.g. IS HEREBY AMENDED TO READ AS FOLLOWS:

g. Large Wind Energy Production Facilities subject to the requirements of Section 717 of this Ordinance.

SECTION 5. SECTION 717 IS HEREBY AMENDED TO READ AS FOLLOWS:

SECTION 717. ALTERNATIVE ENERGY SOURCES

A. Solar Energy Systems – General Requirements

1. The local utility provider shall be contacted to determine grid interconnection and net metering policies. The Applicant shall submit written confirmation to the Borough that the utility company has been informed of the owner's intent to install a grid connected system and has approved of such connection. The Applicant also shall submit certificates of design compliance obtained by the equipment manufacturers from a certifying organization and any such design shall be certified by an Engineer registered in the Commonwealth of Pennsylvania.

2. The solar energy system shall comply with all applicable Borough Ordinances and Codes so as to ensure the structural integrity of such solar energy system.

3. In order to ensure the safety of emergency responders and in accordance with Borough requirements, the type of solar energy system (thermal, chemical or electrical) and the system shut-off location(s) shall be clearly identified on the equipment.

4. Before any construction can commence on any solar energy system the property owner must acknowledge that he/she is the responsible party for owning and maintain the solar energy system. If the solar energy system is abandoned or is in a state of disrepair it shall be the responsibility of the property owner to remove or maintain the solar energy system.

B. Solar Collectors – Roof Mounted

Roof mounted solar collectors shall be permitted as an accessory use to a principal use within any zoning district by right in accordance with the following standards:

1. Roof mounted solar collectors shall comply with the maximum building height requirements of the zoning district in which the installation of the solar collector is proposed.

2. On pitched roofs, roof mounted solar collectors shall be installed as close to parallel as possible to the pitch of the roof while not sacrificing the efficiency of the solar collector.

3. On flat roofs, roof mounted solar collectors may be installed at an angle to improve the efficiency of the solar collector with regard to the predominant sun angle, provided that the solar collector is placed in a manner to minimize its visibility from street level.

4. There will be a minimum of thirty-six inches (36”) of clearance at the ridge line where Solar Photovoltaic Energy Systems are installed on roofs. Systems are allowed to be installed down to the eave, if there remain three (3) access points from the ground to the ridge. If there are less than three (3) access points to the roof ridge, then there shall remain a (thirty-six inch) 36" perimeter of walking area around the System.

5. The systems installed shall provide for the ability to disconnect the system and disable the production of electricity to avoid potentially hazardous conflicts between the system and firefighters and their respective firefighting apparatuses. The manufacturer specifications and a detailed sketch showing the location of all disconnects shall be submitted to the Borough with a copy to the local fire department responsible for coverage

of the site as part of the application. The systems shall be subject to the review of the local fire chief/marshal prior to the issuance of a building permit.

C. Solar Collectors– Ground Mounted

Ground mounted solar collectors shall be permitted as an accessory use to a principal use within any zoning district by right in accordance with the following standards:

1. Ground mounted solar collectors shall comply with the setback requirements of the zoning district in which the installation of the solar collector is proposed.

2. Ground mounted solar collectors shall not be permitted by right in any front yard. The Zoning Hearing Board may authorize, by special exception, the installation of a ground mounted solar collector in a front yard if the Applicant demonstrates that, due to solar access limitations, no location exists on the property other than the front yard where the solar collector can perform effectively.

3. Ground mounted solar collectors shall not exceed a height of ten feet (10').

4. Glare from ground mounted solar collectors shall be directed away from adjoining properties or street rights-of-way. Fences or vegetative screens may be utilized to prevent glare from impacting adjoining properties or street rights-of-way.

D. Small Wind Energy Systems

Small wind energy systems shall be permitted as an accessory use to a principal use within any zoning district by right in accordance with the following standards:

1. The design and installation of all small wind energy systems shall conform to applicable industry standards, including those of the ANSI, Underwriters Laboratories (UL), Det Norske Veritas, Germanischer Lloyd Wind Energies, the ASTM, or other similar certifying organizations, and shall comply with the Building Code and with all other applicable fire and life safety requirements. The manufacturer specifications shall be submitted as part of the application.

2. No more than one (1) small wind energy system shall be permitted per lot.

3. Small wind energy systems shall not generate noise which exceeds fifty-five (55) decibels measured at any property line.

4. Small wind energy systems shall not be artificially lighted, except to the extent required by the FAA.

5. All on-site utility and transmission lines extending to and from the small wind energy system shall be placed underground.

6. No part of any small wind energy system shall be located within or above any front yard, along any street frontage, nor within any required principal building setback of any lot.

7. Structure-mounted small wind energy systems shall comply with all applicable provisions of this Section.

8. All small wind energy systems that are independent of any other structure shall be located a minimum distance of one and one tenth (1.1) times the turbine height from any inhabited structure, property line, street right-of-way, or overhead utility line. This setback requirement shall not apply to inhabited structures when located on the same lot as the small wind energy system.

9. The maximum height of any small wind energy system shall not exceed fifty (50) feet from the finished grade elevation.

10. No portion of any small wind energy system shall extend over parking areas, access drives, driveways or sidewalks.

11. The minimum height of the lowest position of the wind turbine shall be fifteen (15) feet above the ground.

12. Small wind energy systems shall not display advertising, except for reasonable identification of the small wind energy system's manufacturer. Such sign shall have an area of less than four (4) square feet.

13. When an accessory building is necessary for storage cells or related mechanical equipment, the accessory building shall not have a floor area exceeding two hundred (200) square feet, and shall comply with the accessory building requirements specified within each zoning district. Accessory buildings shall not be located within any front yard or along any street frontage, nor within any required setback of any lot.

14. The owner shall provide a copy of the letter from the electric utility company indicating that it has received and processed an application for interconnection of renewable generation equipment with the application for a zoning permit. The owner shall provide a copy of the final inspection report or other final approval from the electric utility company to the Borough prior to the issuance of a certificate of use and occupancy for the

small wind energy system. Off-grid systems shall be exempt from this requirement.

15. The owner of the small wind energy system shall, at the owner's expense, complete decommissioning within twelve (12) months after the end of the useful life of the small wind energy system. It shall be presumed that the wind turbine is at the end of its useful life if no electricity is generated for a continuous period of twelve (12) months.

16. The owner of the small wind energy system shall provide evidence that the owner's insurance policy has been endorsed to cover damage or injury that might result from the installation and operation of the small wind energy system.

E. Large Wind Energy Production Facilities

Large wind energy production facilities shall be permitted as a special exception use in the Woodland (W) District, subject to the following regulations:

1. The layout, design, and installation of large wind energy production facilities shall conform to applicable industry standards, including those of the ANSI, Underwriters Laboratories (UL), Det Norske Veritas, Germanischer Lloyd Wind Energies, the ASTM, or other similar certifying organizations, and shall comply with the Building Code and with all other applicable fire and life safety requirements. The manufacturer specifications shall be submitted as part of the application.

2. Large wind energy production facilities shall not generate noise which exceeds fifty-five (55) decibels measured at any property line.

3. All on-site utility and transmission lines extending to and from the large wind energy production facility shall be placed underground.

4. All large wind energy production facilities shall be equipped with a redundant braking system. This includes both aerodynamic overspeed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Staff regulation shall not be considered a sufficient braking system for overspeed protection.

5. Large wind energy production facilities shall not be artificially lighted, except to the extent required by the FAA.

6. Wind turbines and towers shall not display advertising, except for reasonable identification of the large wind energy production facility's manufacturer. Such sign shall have an area of less than four (4) square feet.

7. Wind turbines and towers shall be a non-obtrusive color such as white, off-white or gray.

8. All large wind energy production facilities shall, to the extent feasible, be sited to prevent shadow flicker on any occupied building on adjacent lot.

9. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations or fence.

10. All access doors to wind turbines and electrical equipment shall be locked or fenced, as appropriate, to prevent entry by non-authorized persons.

11. No portion of any large wind energy production system shall extend over parking areas, access drives, driveways or sidewalks.

12. All large wind energy production facilities shall be independent of any other structure and shall be located a minimum distance of one and one tenth (1.1) times the turbine height from any inhabited structure, property line, street right-of-way, or overhead utility line.

13. The minimum height of the lowest position of the wind turbine shall be thirty (30) feet above the ground.

14. All large wind energy production facilities shall be completely enclosed by a minimum eight (8) foot high fence with a self-locking gate, or the wind turbines' climbing apparatus shall be limited to no lower than twelve (12) feet from the ground, or the wind turbines' climbing apparatus shall be fully contained and locked within the tower structure.

15. The large wind energy production facility owner is required to notify the Borough immediately upon cessation or abandonment of the operation. The large wind energy production facility owner shall then have twelve (12) months in which to dismantle and remove the large wind energy production facility from the lot. At the time of issuance of the permit for the construction of the large wind energy production facility, the owner shall provide financial security in form and amount acceptable to the Borough to secure the expense of dismantling and removing said structures.

16. The owner of the large wind energy production facility shall be required to provide a certificate of insurance to the Borough providing evidence of liability insurance of not less than One Million Dollars ($1,000,000.00) and naming the Borough as an additional insured on the policy or policies of the owner and/or lessee.

F. Outdoor Wood-Fired Boilers

Outdoor wood-fired boilers shall be permitted as an accessory use to a principal use within any zoning district by right in accordance with the following standards:

1. All outdoor wood-fired boilers shall comply with the regulations established for outdoor wood-fired boilers by the Pennsylvania Department of Environmental Protection, in 25 Pa. Code Chapter 123, Section 123.14, as may be amended from time to time.

2. All outdoor wood-fired boilers shall be setback a minimum of fifty (50) feet from any property line and a minimum of one hundred fifty (150) feet from any residences or other buildings or structures where frequent assembly occurs, such as schools., offices, businesses, places of worship, or any similar use as determined by the Zoning Officer, excluding such structures when located on the same lot as the outside wood-fired boiler.

3. All outdoor wood-fired boilers shall have a minimum stack height of 10 feet above the ground. In any case where residences or other buildings or structures where frequent assembly occurs, such as schools., offices, businesses, places of worship, or any similar use as determined by the Zoning Officer, are located within three hundred (300) feet or closer to an outside wood-fired boiler, excluding such structures when located on the same lot as the outside wood-fired boiler, the stack height shall be two (2) feet above the height of the eave of overhang of the roof of such residences or buildings that are nearest to the outdoor wood-fired boiler location.

4. No person shall construct, install, establish or maintain any outdoor wood-fired boiler without first obtaining a Zoning Permit.

G. Geothermal Energy Systems

Geothermal energy systems shall be permitted as an accessory use to a principal use within any zoning district by right in accordance with the following standards:

1. Only closed loop geothermal energy systems shall be permitted. Open-loop geothermal energy systems are prohibited within the Borough.

2. For all closed loop geothermal systems relying upon circulating fluids, only nontoxic, biodegradable circulating fluids such as food grade propylene glycol shall be permitted.

3. Geothermal systems shall not encroach on public drainage, utility roadway or trail easements of any nature.

4. All horizontal closed loop systems shall be no more than twenty (20) feet deep.

5. All vertical closed loop geothermal energy systems shall have proper grout sealing with the following properties:

   a. High thermal conductivity to allow heat transfer;

   b. Low viscosity to allow the grout top wrap around the pipe;

   c. Low shrinkage volume to ensure that the grout will not pull away from the pipe; and

   d. Low permeability to prevent the migration of antifreeze solution in the event of a line breakage.

6. Geothermal energy systems shall be located a minimum distance of twenty-five (25) feet from any property line, unless documentation in the form of a written agreement with the adjoining property owner(s) is provided.

7. Geothermal energy systems shall be located a minimum distance of one hundred (100) feet from existing potable water wells and a minimum distance of twenty-five (25) feet from any existing septic system.

8. Above-ground equipment associated with geothermal pumps shall not be installed in the front yard of any lot or the side yard of a corner lot adjacent to a public right-of-way and shall meet all required setbacks for the applicable zoning district.

9. All horizontal closed-loop geothermal energy systems shall be properly backfilled, including the removal of sharp-edged rocks before backfilling in order to prevent such rocks from coming into contact with the system pipe.

10. The design and installation of geothermal systems and related boreholes for geothermal heat pump systems shall conform to applicable industry standards, including those of the American National Standards Institute (ANSI), the International Ground Source Heat Pump Association (IGSHPA), the American Society for Testing and Materials (ASTM), the Air-Conditioning and Refrigeration Institute (ARI), or other similar certifying organizations, and shall comply with the Adamstown Borough Building Code, and with all other applicable Borough requirements. The manufacturer specifications shall be submitted as part of the application.

11. Abandonment. If the geothermal system remains nonfunctional or inoperative for a continuous period of one year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The

owner shall remove the abandoned system at their expense after a demolition permit has been obtained in accordance with the following:

a. The heat pump and any external mechanical equipment shall be removed.

b. Pipes or coils below the land surface shall be filled with grout to displace the heat transfer fluid. The heat transfer fluid shall be captured and disposed of in accordance with applicable regulations. The top of the pipe, coil or boring shall be uncovered and grouted.

H. Building Permit Required

The installation of solar energy systems, wind energy facilities, geothermal energy systems and/or outdoor wood-fired boilers shall be subject to all permitting and inspections with regard to applicable provisions of the Pennsylvania Uniform Construction Code (UCC) and the National Electric Code (NEC,) in addition to any other Borough ordinances and/or regulations required to demonstrate compliance with the provisions of this Ordinance.

I. Protection

Where a solar or wind energy system has been installed, it shall be the responsibility of the property owner to secure any easements or restrictive covenants necessary to protect the skyspace affecting the solar or wind system. Such an agreement shall be negotiated between owners of affected properties, but it is not a requirement for approval of a Building and Zoning Permit for the solar or wind energy system.

SECTION 6. SUBSECTION 802 C. IS HEREBY AMENDED TO READ AS FOLLOWS:

C. Surface. All required parking facilities shall be provided with an “all-weather” surface.

SECTION 7. SECTION 1204. IS HEREBY AMENDED TO READ AS FOLLOWS:

SECTION 1204. HEARINGS OF THE ZONING HEARING BOARD.

The Zoning Hearing Board shall conduct hearings and make decisions in accordance with the provisions of the MPC.

A. Referral to Adamstown Borough Planning Commission.

Applications before the Zoning Hearing Board shall be referred to the Adamstown Borough Planning Commission at least thirty (30) days prior to the hearing on such Application to provide the Planning Commission an opportunity to submit recommendations.

B. Planning Commission Review.

Within thirty (30) days of the Borough Planning Commission's receipt of an Application, the Borough Planning Commission shall review said application together with all supporting information and forward its written recommendations to the Zoning Hearing Board. In their review, the Planning Commission shall take into consideration the public health, safety, and welfare, the comfort and convenience of the public in general and of the residents of the immediate neighborhood in particular, and may recommend appropriate conditions and safeguards as may be required in order that the result of its action may, to the maximum extent possible, further the expressed intent of this Ordinance and the Borough's Comprehensive Plan. The Commission may recommend approval, disapproval or modification. In the case of disapproval or modification the Commission shall set forth the reasons for the recommendation in writing and a representative of the Planning Commission shall attend the Zoning Hearing to present the position of the Planning Commission.

SECTION 8.

All other provisions of the Adamstown Borough Zoning Ordinance not amended or changed shall remain in full force and effect.

These Sections shall become effective upon enactment.

Ordained and enacted into law this _____ day of _____, 2012.

Borough Council
Borough of Adamstown

ATTEST: _____ _____
Borough Secretary President of Council

Approved this _____ day of _____, 2012.

_____
Mayor

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