

Ambient Energy Technology

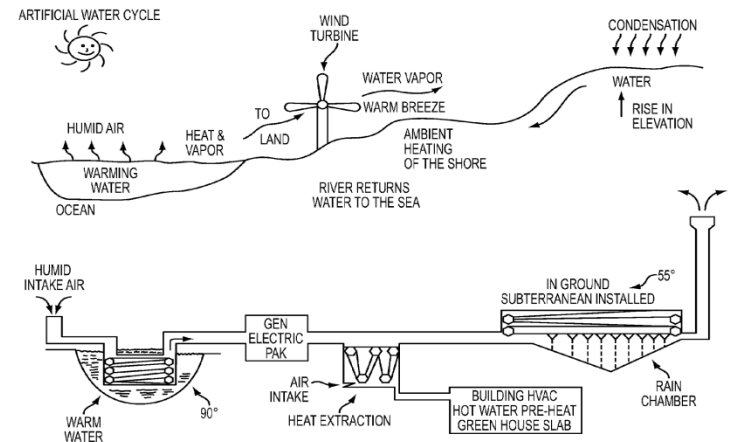


AMBIENT ENERGY RESEARCH TECHNOLOGY

A Science Company

AeRT... Unleashing the Power of Nuclear Suns

- Research, development and consultation in the field of Environmental Green Energy Design and Regenerative Energy Design.



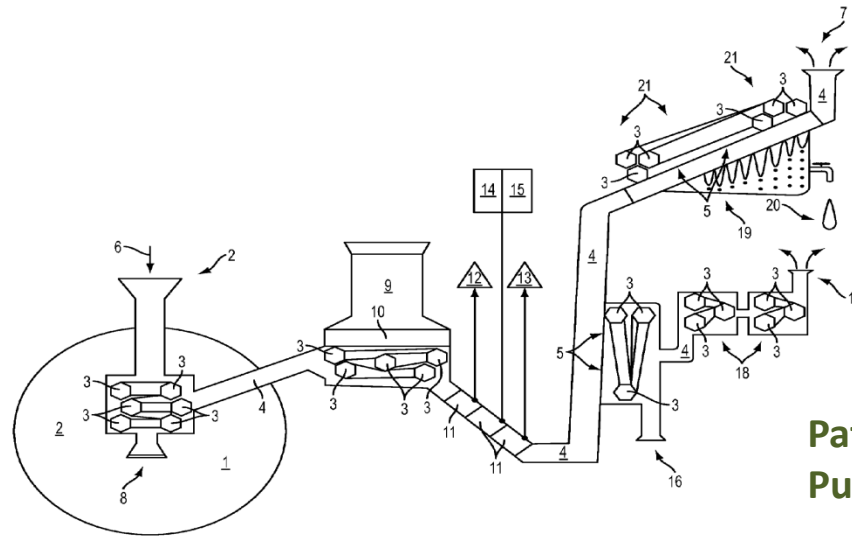
Re-Greening

Parts 1,2, 3 = AEC

Regenerative

What is an Ambient Energy Chamber (AEC)?

Part 1 (elementary overview)

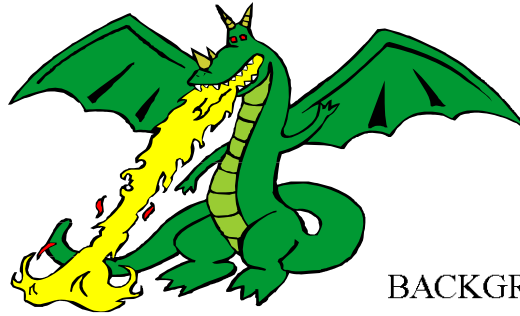


Patent Application Publication
Pub. No.: US 011/0100012 A1

System and Method for Transmitting Thermal Energy



The Management of Industrial Fire



BACKGROUND OF THE INVENTION

[0003] When one looks upon the wasted ambient thermal energy of an industrial warm water lake, one wonders if that heat energy could be captured and funneled into productive use, without the use of artificial power or without mechanical means. Likewise, other waste thermal energy sources, such as parking lots or roads, hold such a large amount of heat energy that they change the environmental conditions of cities. In fact, cities can be considered as “urban heat islands” due to the amount of stored energy compared to surrounding areas.

[0004] A renewable energy system that can move thermal energy from these waste heat sources and use the energy productively would both provide a source of energy where it is needed and also provide a re-greening of the waste heat source by reducing its temperature to one that is more suitable for its natural environment.

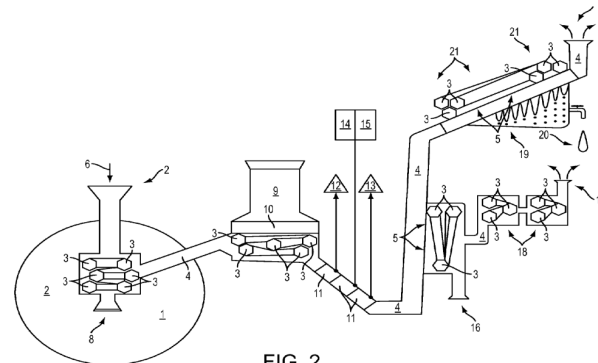
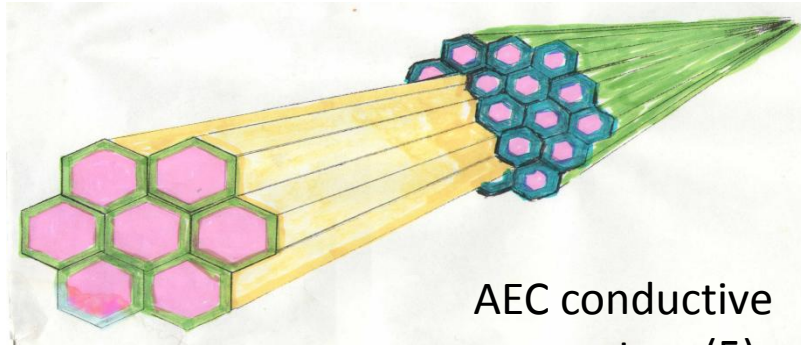


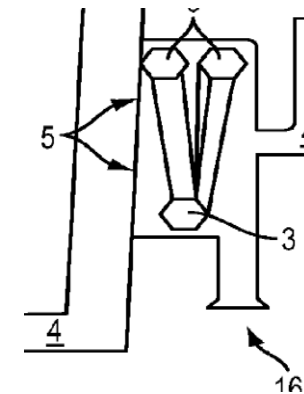
FIG. 2

Ambient Energy Chamber (AEC)



AEC conductive energy tap (5)

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- An Ambient Energy Chamber (AEC) is a Thermal Dynamic Amplifier (TDA) that absorbs thermal energy, then transfers that thermal energy into containment while transmitting that energy away from the thermal energy source towards productive use **Without** the use of **Artificial Power** or **Mechanical means (WAPM)**.



*WAPM = Without Artificial Power or Mechanical means

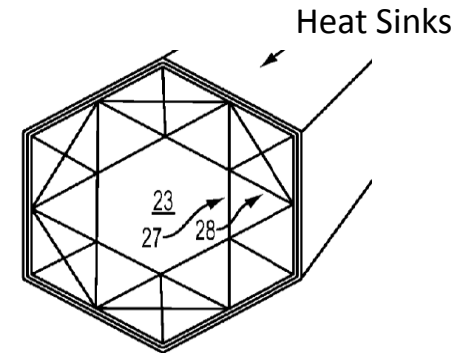
Ambient Energy Chambers... are designed to conduct Thermal Energy

Even very low thermal energy levels....

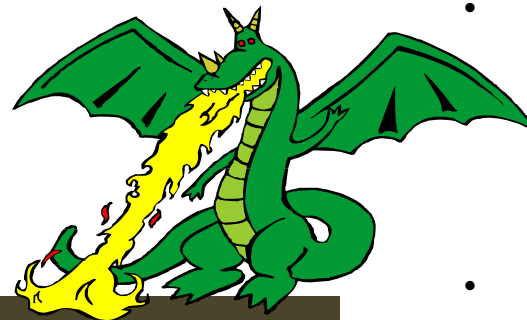
Conventional heat exchanger energy recovery generally negates the use of ambient waste heat and ambient energy sources for productive use.

*Ambient Energy Chamber(s) are designed to manage thermal energy without artificial power or mechanical means. (WAPM)**

AEC systems and methodologies produce convective air flows by leveraging differences in elevation and temperature, utilizing the properties of matter and the laws of conduction and convection to produce work without the use of artificial power or mechanical means.



- An AEC has more internal conductive area available to the air or gaseous medium being managed.
- Enabling more efficient transfer of thermal energy to ambient rising air.



Also engineered to manage Industrial Fire

Thermal Dynamic Amplification

Think of the operability of a vacuum tube. The plate is (34) the cathode is (35) the screen grid is (33) the energy source is (31). The plate (34) is attached to a “higher elevation(36) than the cathode (35) which is attached to a lower elevation (32), thus there is a difference in elevation potential.

Potential, think of like voltage (E) (32 verses 36)

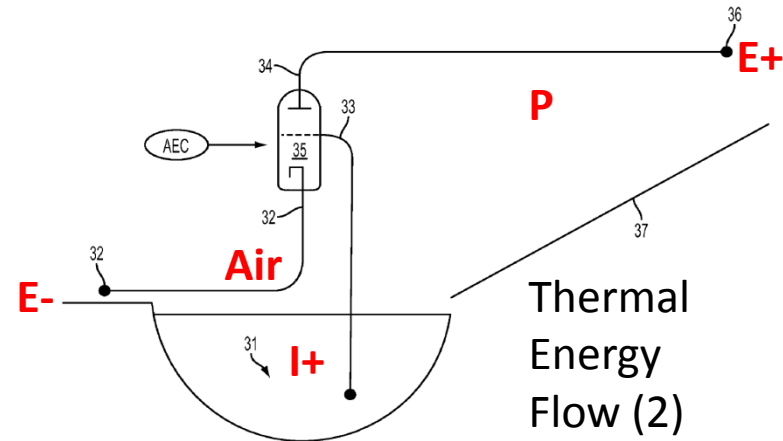
Thermal energy source, think of like current (I)(31)

Air, think of like a conductor (Air)

Power or Pressure, (P) think of as the ability to do Work

The Screen grid (33) is attached to the thermal energy source. The introduction of thermal energy now causes the **AEC** to conduct or flow or move thermal energy through the walls of the **AEC** into the interior of the **AEC** by the process of conduction.

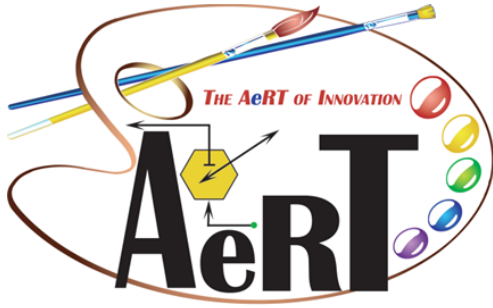
Transmission (Air Movement) occurs because of the difference in elevation (potential) of the plate (34) and the cathode (35). The intensity of the “conducted thermal energy” through the **AEC** (33) starts to rise towards the plate(34) by the process of convection.



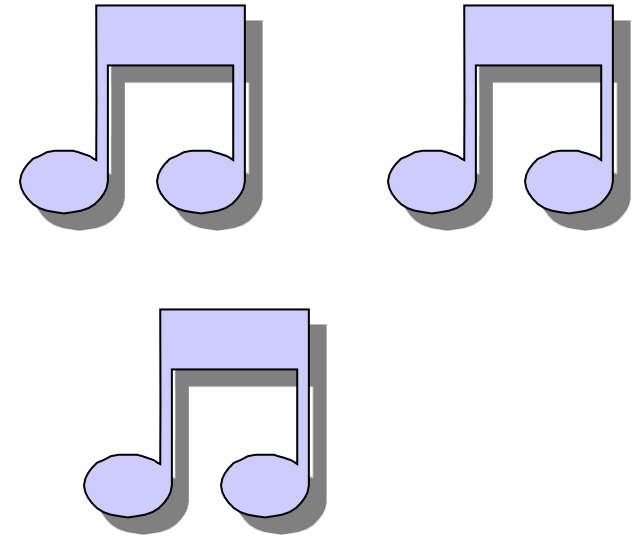
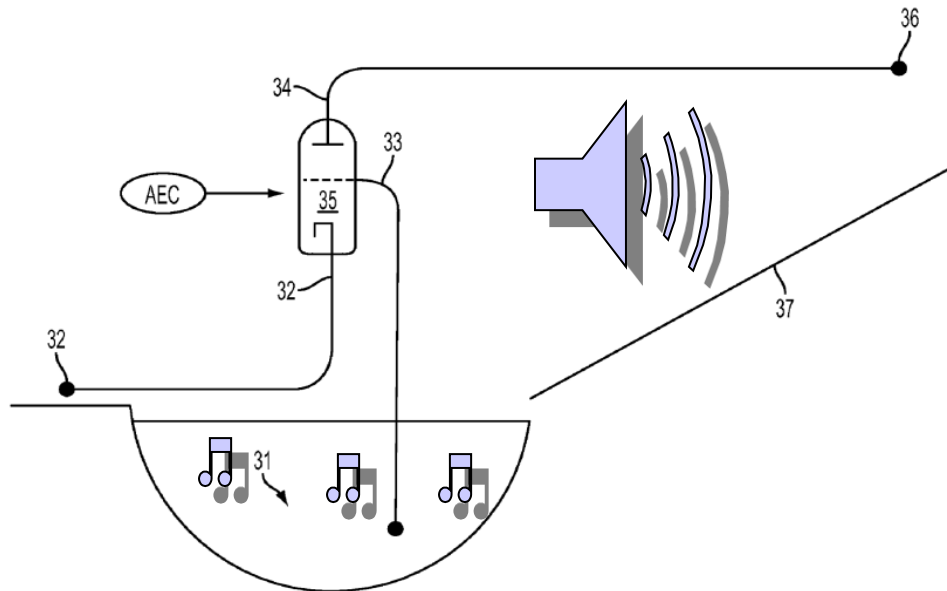
$$P = I * E$$



*Warm Air Rising



What is Happening



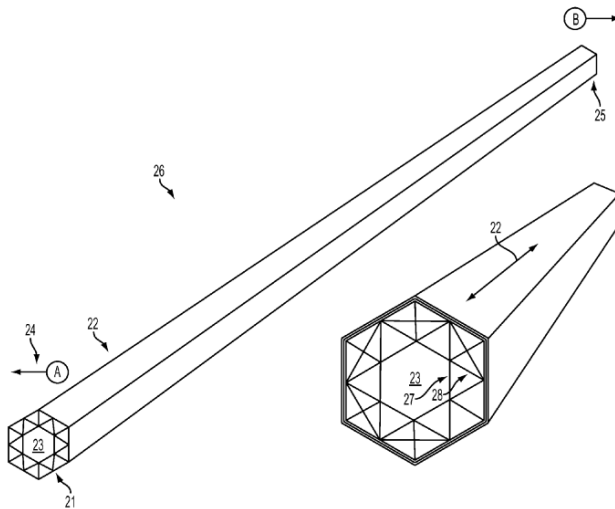
- ❖ The reason an AEC's operation is described here as **amplification** is analogous to audio amplification in an amplifier.
- ❖ Weak microphone or instrument sound is placed into an amplifier's input jacks.
- ❖ Within the amplifier are circuits that leverage higher voltage potentials created within the amplifier's circuits against the relatively small sound, or signal current, the resultant being an **amplification** and a representation of the original signal or sounds, yet with much higher power and effectiveness than the original sound(s).

PRESSURE AND POTENTIAL MOVE ENERGY

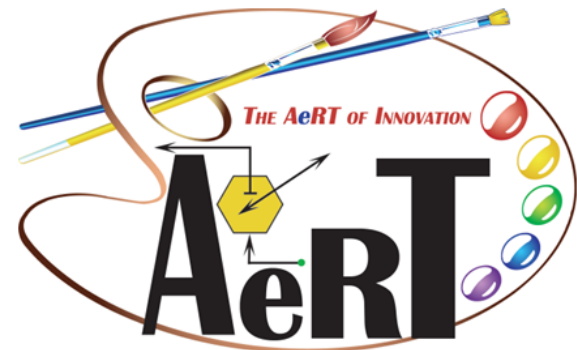
Ambient Energy Chambers redirect conductive or radiant energy that has **pressurized** matter and conducts thermal energy through thermally transient source(s) by the process of conduction and convection. .



- *AEC(s) are tool(s) to counterbalance and enhance environmental design*



Ambient Energy Chamber



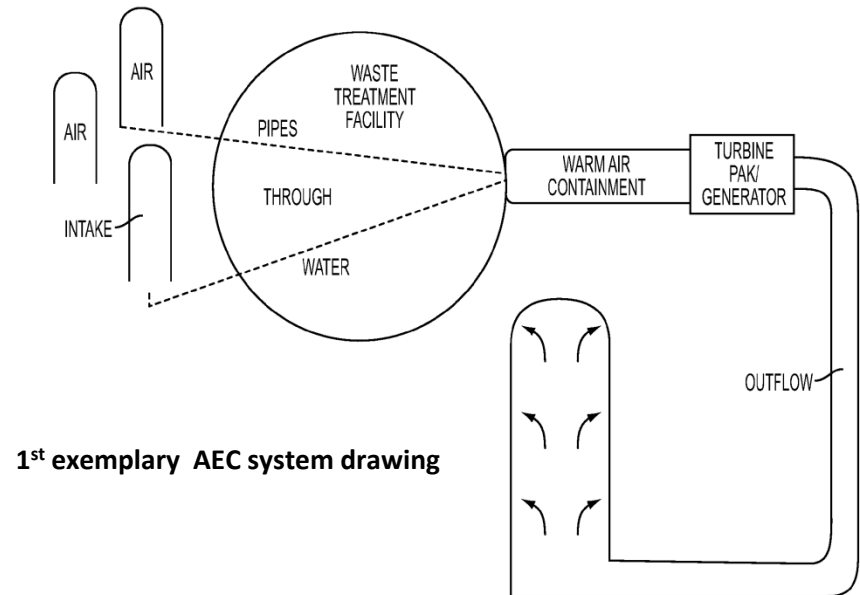
Industrial Warm Water Lake

Let us take the example of an industrial warm water lake that is used to cool and condition water for power or industrial plant use.

The warm waters artificially warm the atmosphere and the surrounding community. There is thermal energy in the water as the final byproduct of the industrial process, which has utilized as much of the thermal energy it can efficiently.

Placing an AEC system in such water starts the production of an artificial wind within the containment and transmission portions of the AEC. Now the artificially-warmed waters are being used to produce air movement that is now internal to the AEC, that can now move wind-driven energy systems and at the same time starts the reduction of the temperature of the lake.

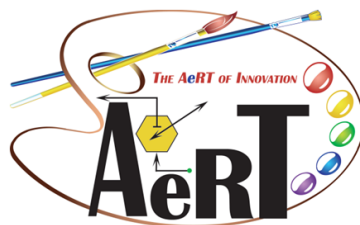
AEC operation(s) increases the efficiency of the industrial plants processes because less power is required to cool water. The AEC is accomplishing the cooling by conduction, convective air rising and doing so without artificial power or mechanical means.



1st exemplary AEC system drawing

The Second $\frac{1}{2}$ of the Energy equation

- An AEC enables the final transport of thermal energy efficiency away from the heart of a quenched nuclear or industrial fire, with the final resultant work of quenching industrial fire being done by the use of an Ambient Energy Chamber.
- An industrial warm water lake's warm waters are the result of the final process of managing industrial fire by the industrial plant.
- There is so much heat and pressure released by the industrial, nuclear or conventional processes that the resultant heat can only be managed (presently) by the environment and a man-made lake, a river, or the ocean.



How the System Works....

SUMMARY OF THE INVENTION

[0005] Aspects of the invention are directed to systems and methods for transmitting thermal energy.

[0006] According to one aspect of the invention, the system includes an intake for introducing air at a first temperature; an exhaust for exhausting the air, the exhaust being provided at a higher vertical elevation than intake; and a thermal energy source provided at second temperature higher than the first temperature, the waste thermal energy source being provided between the intake and the exhaust. The air introduced via the intake, passes the thermal energy source, and is exhausted via the exhaust due to a difference in elevation between the intake and the exhaust. The thermal energy source can be a waste thermal energy source.

[0007] According to another aspect of the invention, the thermal energy source can be a waste thermal energy source. The exemplary embodiment can include a first ambient energy chamber configured to pass the air through the thermal energy source and an insulated, and a second ambient energy chamber provided between the ambient energy chamber and the exhaust, wherein the second ambient energy chamber is a made of a slow-loading thermal material.

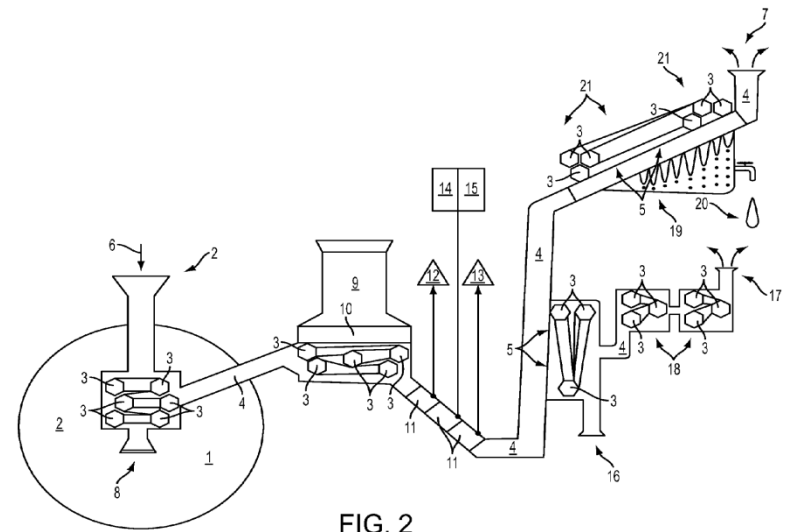


FIG. 2

Detailed conceptual drawing of
invented system and method

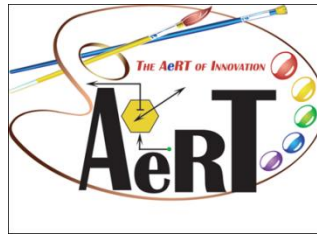





How AeRT began its' Research

[0018] The exemplary embodiments use the principles of conduction, convection, and condensation, to transfer thermal energy from matter and transport that heat away from a thermal energy source, while producing an artificial wind within the system that can be used to product power or transfer the thermal energy. The exemplary embodiments are even more environmentally friendly than current environmentally friendly systems, such as wind turbines, in that the systems are able to transfer energy without moving parts and provide a regeneration or “re-greening” of the thermal energy source, if it is a waste energy source.

[0019] The system works most effectively when it is utilized in such a manner to reverse the environmental effects of thermal pollution, such as the impact a warm water lake has on the immediate environment around a power or industrial plant. For example, aquatic life within an industrial warm water lake is adversely affected by high water temperatures. Moreover, by conducting and moving the thermal energy away from the warm water, the efficiency of an industrial plant increases because the temperature of the water used to cool the plant is reduced and can more effectively cool the plant.



How can WE, as Citizens of an Agricultural & Energy producing Community, contribute collectively to its well being? Can we save money in our communities and produce more Energy for the  at the same time?

How can Louisa County's Citizens be encouraged to better manage our resources? How may we diversify and Green our Economy and produce high quality food for our Citizens? We can **DOUBLE** our Agricultural Production using Thermal Energy, meanwhile diversifying our local economy.

It is Time we HAD a Conversation...
2010, The Day We Begin...



Tell me, Grandpa...
 Tell me about SNOW!



Because of the wasted heat from the Lake, it does not snow in Bumpass, VA like it did years ago. What can we use that Thermal Energy for? Agriculture, Energy Reduction & Energy Independence for the region.

Let's have a Conversation...
2010, The Day We Begin...

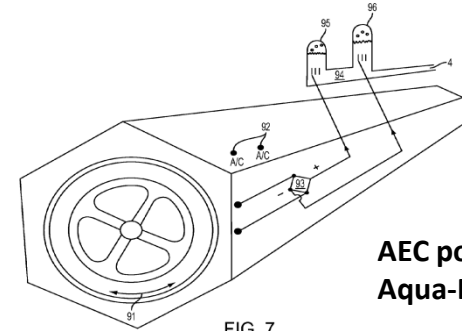


Cooling an Artificial Warm Water Lake

[0020] FIG. 1 is a conceptual view of a first exemplary embodiment of the invention. In this embodiment, low temperature air is sucked from an intake, passes through pipes within a waste thermal energy source, for example an industrial warm water lake, and is exhausted via an exhaust tower due to a difference in elevation between the intake and the exhaust tower.

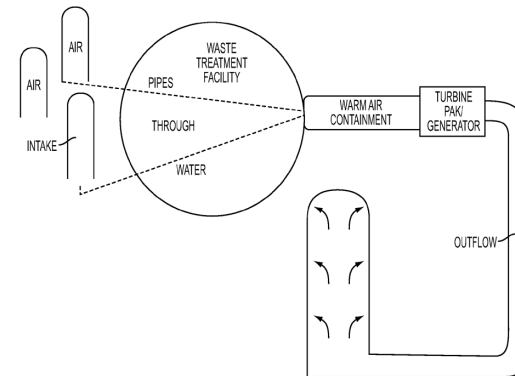
[0021] As the air passes through the lake water, the air's temperature increases while the lake's temperature decreases, provide a "re-greening" of the industrial warm water lake toward its natural temperature. Moreover, in this exemplary embodiment, in addition to the "re-greening" of the waste thermal energy source, the air passes through a turbine that generates electricity. That is, as the temperature of the air increases, the flow of the air toward the exhaust tower also increases as the hot air rises faster. This creates a low pressure point where the air was heated, and therefore an artificial wind within the system that can be productively used, as discussed in detail below.

generates electricity. That is, as the temperature of the air increases, the flow of the air toward the exhaust tower also increases as the hot air rises faster. This creates a low pressure point where the air was heated, and therefore an artificial wind within the system that can be productively used, as discussed in detail below.



**AEC powered
Aqua-Fuel Cell**

FIG. 7

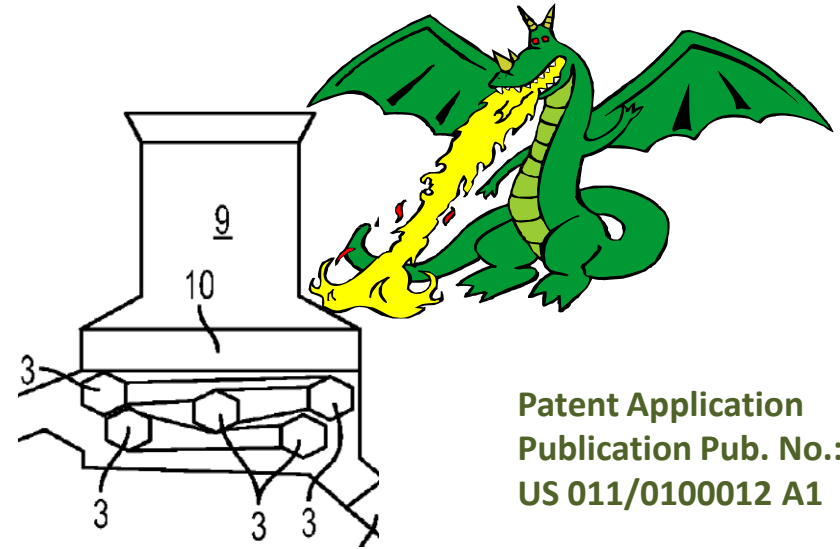


1st exemplary system drawing



Fail-safe design to increase Industrial efficiency

[0022] The systems can provide a method of industrial water cooling, which extracts thermal energy (heat) and cools the industrial hot water continuously without mechanical means. The systems provide industrial cooling with no evaporative cooling, as with conventional cooling towers, or spray water in the air cooling ponds. Thus, the systems are suitable to cool industrial hot water after, for example, an accident has crippled the normal powered cooling systems at a nuclear power plant. In an emergency shutdown incident where the lake temperature has increased due to response, the system can be used to safeguard the industrial plant and the surrounding resident population. As long as the conditions of elevation and thermal dynamics exist, even if there is a very low temperature difference, the system will function and do so without removing water from the industrial lake or further depleting water from the watershed. The addition a system consistent with the exemplary embodiments to a nuclear station is passive, i.e., no power required, emergency safety system that will function and cool water when all other systems fail. It is a fail-safe that can be added to nuclear plant operation safety systems, already in place in place, and will increase the operating efficiency of the plant by reducing the cooling water temperature and making additional electrical power. But because it is in place when all remote transmission power to the industrial plant, and generators or fuel for those generators expire, and the system will function and provide cooling until the plant's water temperatures reaches air intake levels, far lower than those required to safeguard aquatic life and cool water after an incident or terrorist attack on such a facility.



Patent Application
Publication Pub. No.:
US 011/010012 A1

AEC installed in the facility and its cooling water

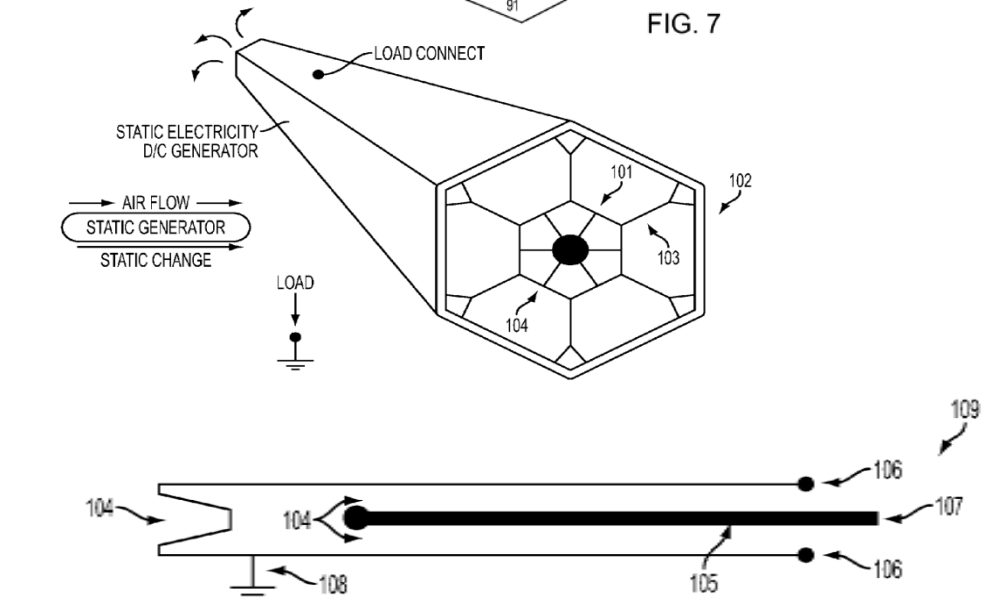
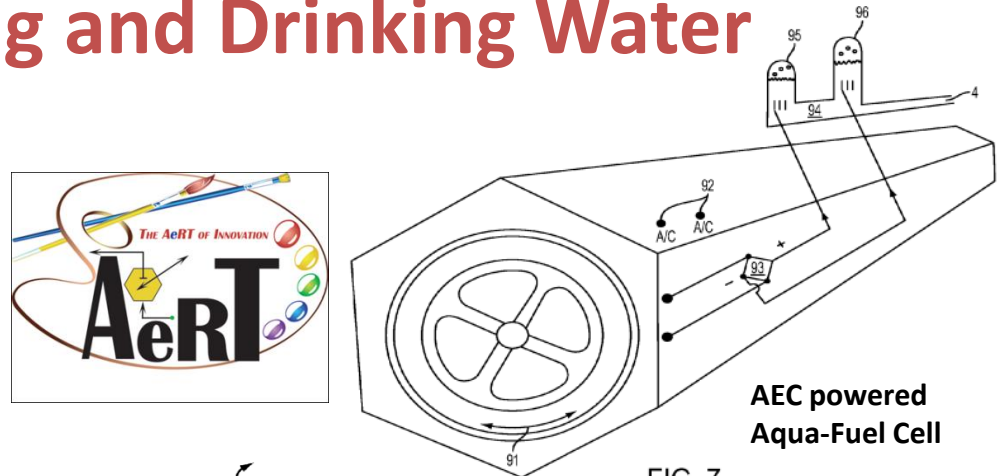
[0031] Specifically, the air passes via ambient energy chambers 3 provided within the cooling water 10 of the tower 9. By passing through this water 10, the air's temperature is further increased.



Hydrogen, Oxygen, AC and DC Power, Artificial Lightning and Drinking Water

[0046] FIG. 7 shows a fourth exemplary embodiment in which the airflow within the system powers a generator. That is, this exemplary embodiment provides a traditional generator 91 for outputting A/C energy 92. Moreover, at higher air flow levels, the A/C output can be rectified 93 to produce D/C current by a method that requires no moving parts. Accordingly, the water 94 that is produced by condensation, as discussed with respect to the first exemplary embodiment shown in FIG. 2, and the generated D/C current, can be used to produce hydrogen 95 and oxygen 96, for fuel cell use.

[0047] FIG. 8 shows fifth exemplary embodiment in which the airflow within the system generates static electricity. That is, the ambient energy chamber can include a static electric collection array or probe 101, an electrically conductive exterior 102, and thermally conductive, electrically insulated members 103 (e.g., ceramic) provided between the collection array or probe 101 and the electrically conductive exterior 102. The electrically conductive exterior 102 is connected to a system ground 108. As high pressure air 104 enters the ambient energy chamber, a static charge is produced at the collection array or probe 101. A difference in potential between a port 107 of the collection array or probe 101 and a port 106 of the electrically conductive exterior 102 produces a voltage at load 109.



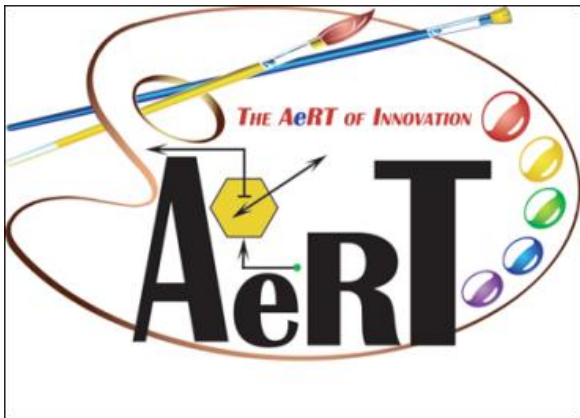
Above are the "byproducts" of AEC Management of Industrial Fire

The Second 1/2 of the Energy equation

Ambient Energy Technology Part 2



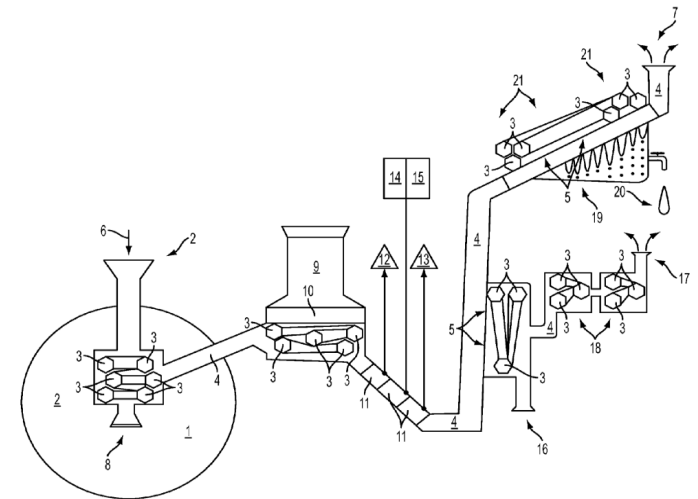
How to manage Global Warming by AEC operationally-induced industrial plant efficiency and thermal energy rejection into ambient medium by AEC thermal load management



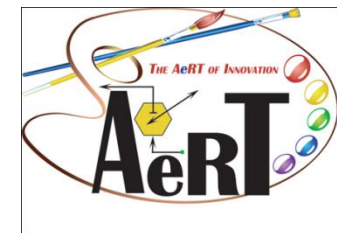
An American solution to a world-wide problem

Review of capability of an AEC design(s)

[0041] Although there are existing renewable technologies that utilize the principles of warm air rising, the collection mechanisms in these systems are intrusive and large. In contrast, a system constructed according to the exemplary embodiments optimize thermal collection utilizing not just the principle of convection, but also the principles of containment, conduction and convective air movement and can accomplish extraction of thermally ambient energy stored in all types of matter. The system is positioned through the material to which it is designed to recover ambient thermal energy, while other existing technologies require the thermally resonant materials to be within the containment system or underneath the renewable technology device. Because of this difference, the exemplary embodiments can extract thermal energy from all types of matter, including matter in the form of gas or thermal energy delivered by solar radiation. The thermal energy and air are moved passively, continuously and efficiently without mechanical means.



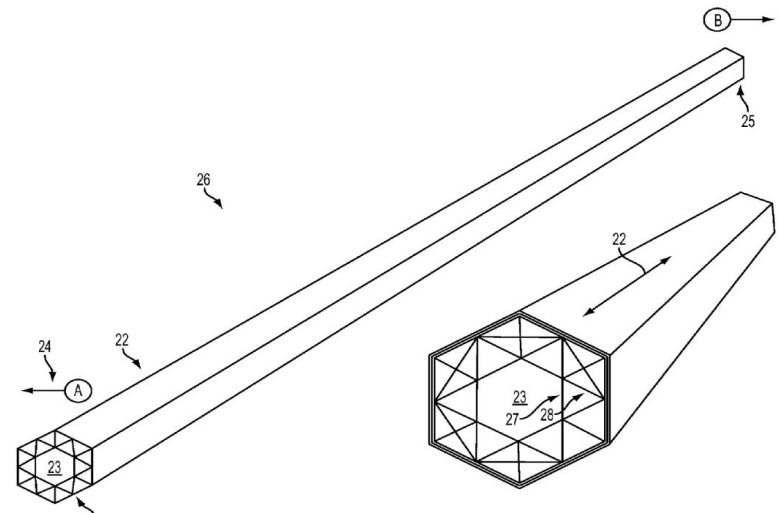
System and Method of Transmitting Thermal Energy



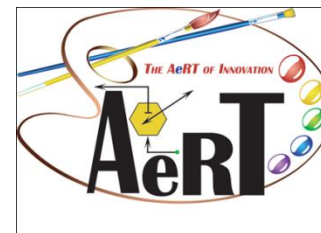
The key to AEC operation is Containment...

- ❑ The ability of an **Ambient Energy Chamber System and Method of Transmitting Thermal Energy** to absorb thermal energy by the process of conduction from all forms of matter, and to **contain thermal energy within the AEC systems and transmit it away from the thermal energy source** by the process of convection is an extraordinary advantage in comparison to other green-type technologies.
- ❑ The AEC's ability to move and utilize the thermal energy acquired by the system and method of transmitting thermal energy without artificial power and without mechanical means further bends the operability and ROI (Return on Investment) curves towards feasibility and deploy ability.
- ❑ For there are few costs to operate the AEC systems, other than inspection. Nor is there a requirement for mechanical maintenance-both are significant costs that affects other conventional and renewable system(s) feasibilities and lifecycles.

and the production of an
Artificial Wind within the AEC

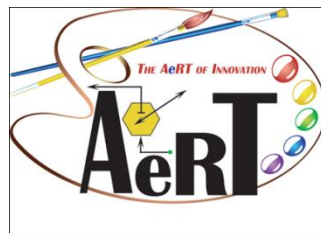
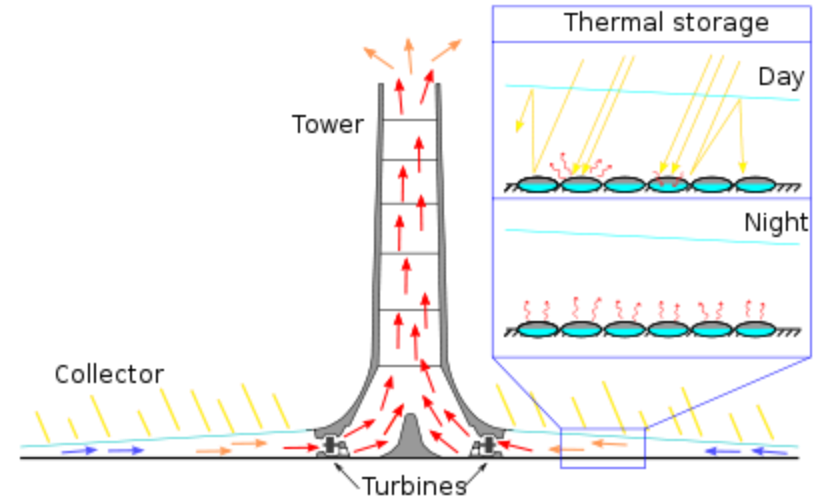


Ambient Energy Chamber



Inspiration for System and Method of Transmitting Thermal Energy

- Systems such as the Solar Chimney pictured (right) appeared to lack a consistent source of thermal energy, and they utilized large energy collection areas to function.
- I first imagined a source of thermal energy that was readily available and consistent in thermal energy levels, and that was available in all parts of the USA and the world. The waste thermal energy waters of conventional power plants and industrial users of energy provided opportunity to recover thermal energy that was analogous to those needed to provide convective air movement.



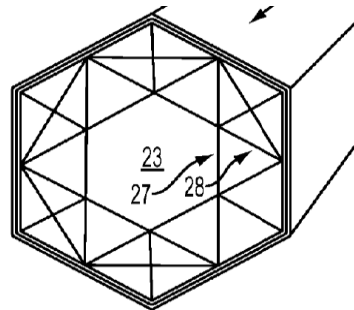
Now to Harvest and Transmit Thermal Energy

- ❑ To the right (A) is a metal tube. As it rests, there are no air pressure differences in or around the tube.
- ❑ As a finger is placed on the tube, (B) the tube feels cool. Therefore, there is heat transfer from the finger to the metal and by the process of conduction, the heat from the finger is conveyed internally to the metal tube. Therefore there is air movement on the internal surface of the tube, and conductive transfer of heat to the air within the tube, but no air movement in or out of the tube.
- ❑ Now the elevation (C) of the tube is changed and the finger remains on the tube. The heat transfer from the finger continues by the process of conduction. The heat immerses on the inside of the tube and by the process of conduction, heat is transferred to air within the tube. Because there is an elevation difference between the left and the right side of the tube, air begins to rise from left to right, by the process of convection.
- ❑ Therefore, as long as there is an elevation difference and a thermal source on the exterior of the tube, there will be convective air rise within the tube (as long as there is a thermal source outside the tube that is warmer than the source air).

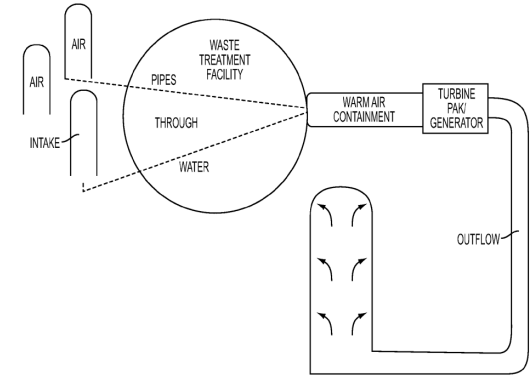


Artificial Wind within the AEC

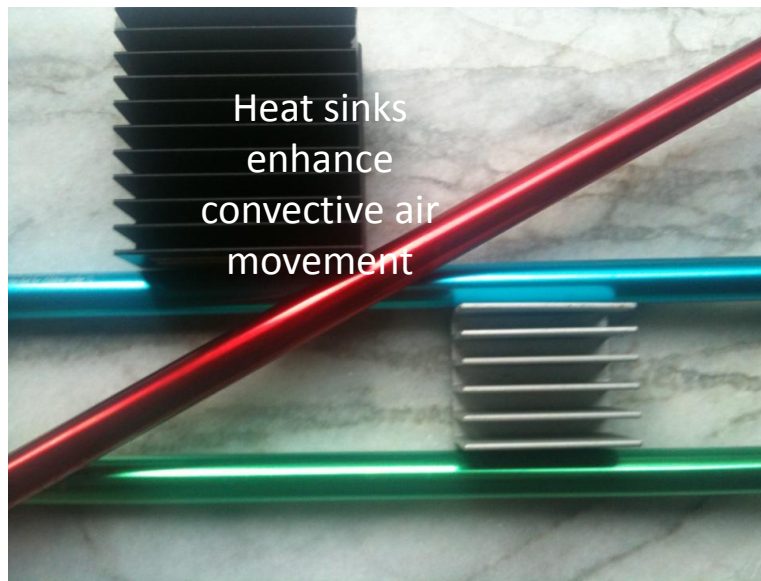
- Without moving parts and without the use of an energy source other than the one which is being extracted of thermal energy, the Ambient Energy Chamber design produces a low pressure zone at the intake and a high pressure zone at the exhaust-without the use of power or mechanical means. This process will continue until the thermal source and ambient air reach unity, (as in the same temperature), regardless of the range* of the temperatures utilized.



Heat Sinks



1st exemplary AEC system drawing



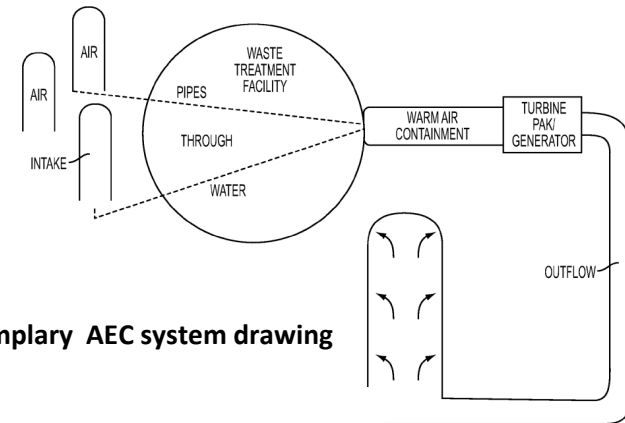
Patent Application Publication
Pub. No.: US 011/0100012 A1



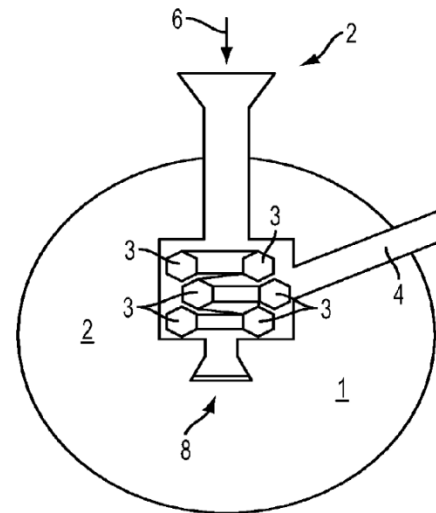
*Ref. 0043 of the Patent Application

The AEC was designed to cool Industrial warm water

- The **System and Method for Transmitting Thermal Energy** was originally designed to foster the reduction in industrial warm water lake temperatures and to generate electricity at the same time, although there were questions regarding the efficiencies because of the small differences in lake temperatures (say 90 degrees) and air temperatures (say 60 degrees).
- It was understood, however, that convective air rise within the systems could be utilized to bring down the lake temperatures but the Return on Investment and efficiencies of the system were the concern.



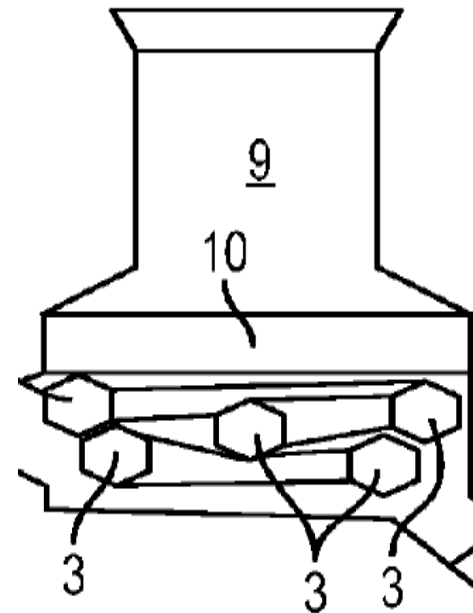
1st exemplary AEC system drawing



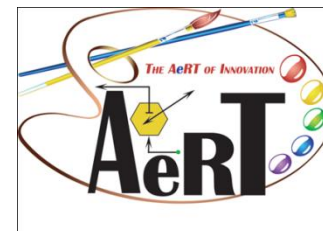
The efficiency of the AEC is enhanced by application of the design

- To enhance the efficiency of the AEC systems and methods, the thermal dynamics had to be extended. Therefore, placing an AEC under or through or on conductive contact with high temperature sources like cooling water towers or other areas of the industrial plants that require of continual or essential cooling provided the solution to increased efficiency.
- Similar to jet engine operation, one initially ignites the fuel and then “Reheats” the air for greater power.....Afterburning for greater power and pressures.
- The advantage for/to Industrial plants is the increase in efficiency of the already-present cooling systems. Increasing the efficiency of industrial plant operations translates into profits and reductions in greenhouse gases because less fossil fuel is needed to run such plants since the AEC operation is positively affecting the cooling processes within the plant.

Non evaporative cooling of Industrial waste water

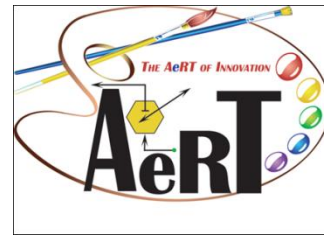
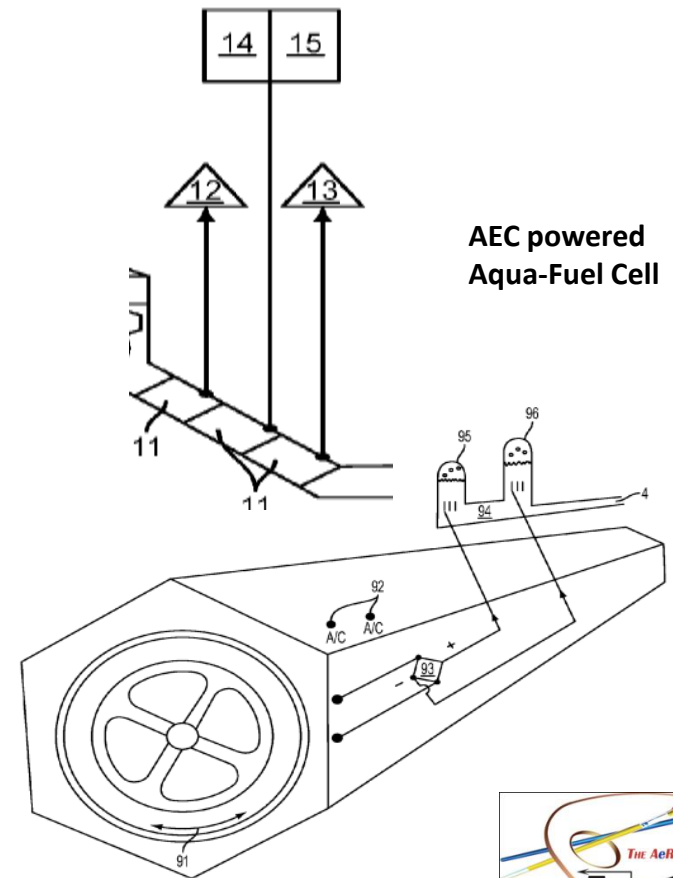


Cooling tower example above with AEC within the cooling waters



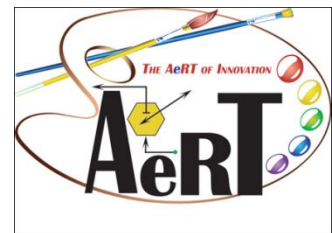
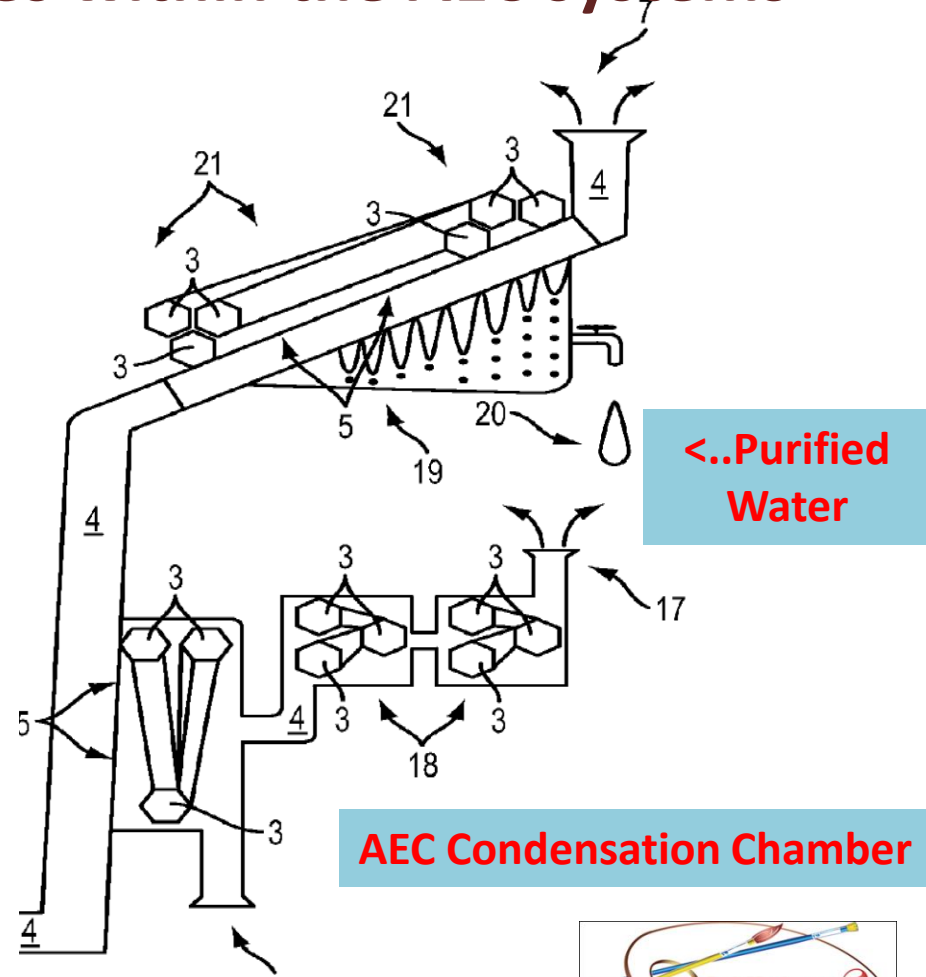
The enhanced airflow can now be utilized much more easily

- Now, with increased air flow after “reheat” of the air, turbines can work more efficiently.
- In our design, water recovered from AEC operation is processed to make Hydrogen and Oxygen in addition to AC and DC power.
- The uniqueness of the AEC system’s design allows these generator portions to be placed where needed along the exhaust and AEC transmission path.
- Providing for localized electrical generation and the production of hydrogen and oxygen fuel, providing for a more green technological economy.



The enhanced air flow has come with the benefit of higher thermal temperatures within the AEC systems

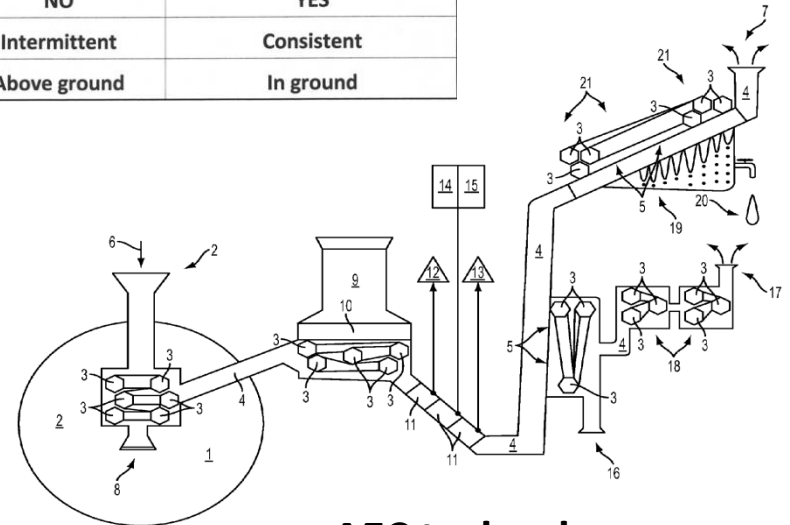
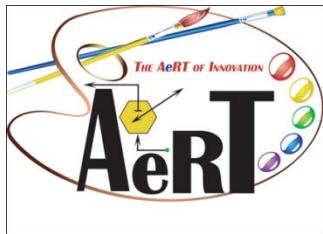
- An AEC and the Systems and Method for Transmitting Thermal Energy are conducive in the acquisition of and the delivery of thermal energy, all without moving parts or mechanical means.
- In our "limited "rendering of an AEC application (to the right) the AEC is being utilized to heat green houses and/or transfer thermal energy to structures etc.
- Humid air brought into the AEC systems when routed into a cooler medium like the ground or AEC "artificially"-cooled thermal storage produces the most precious thing on planet Earth**Water as the final byproduct of AEC operation.**



Ambient Energy Chamber Technology verses Conventional Green Technology.



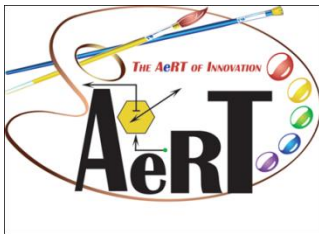
Technology Uses and Functions	Wind Turbine	Ambient Energy Chamber
Utilizes air pressure to function	YES	YES
Produces electricity	YES	YES
Green Technology	YES	YES
Kind to the birds	No	YES
Obviousness of Installation	YES	NO
Operation 24/7/365.25	NO	YES
Recovers waste energy	NO	YES
Recovers water to the watershed	NO	YES
Revitalizes environmental damage	NO	YES
Heats greenhouses and Eco-spheres	NO	YES
Produces Hydrogen and Oxygen	NO/YES	YES
Produces it own Air Pressure	NO	YES
Operational Cycle	Intermittent	Consistent
Installation Technique	Above ground	In ground



AEC technology

Re-Greening and Regenerative Healing of the Planet through Ambient Science

Expelling Carbon and Thermal Energy into the Environment is always the easiest thing to do. The Environment, however, is a system and ANY system can be overwhelmed.



Re-Greening



Regenerative

- The System and Method for Transmitting Thermal Energy, the **Ambient Energy Chamber**, we believe to be the second half of the industrial equation,
- The system and methods are designed to reverse the affects of Hydro-Carbon usage and the thermal by-products of worldwide industrialization by increasing plant efficiency, dispersing and utilizing thermal energy more effectively and recovering water.*

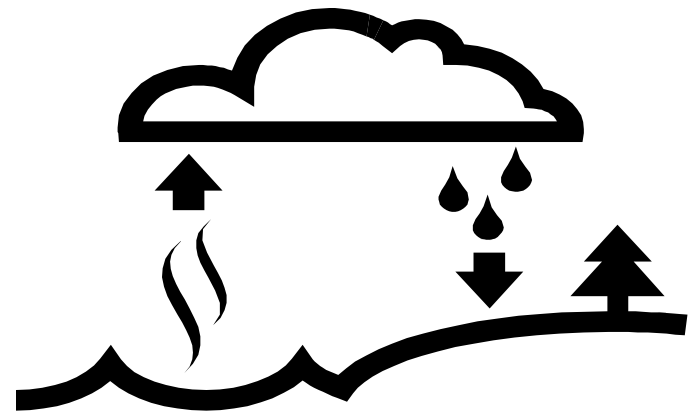
The Second ½ of the Energy equation



***39% of water usage in the USA is for the production of Energy**

Part 3...How to Make Water

- The **System and Method for Transmitting Thermal Energy** was originally designed to foster the reduction in industrial warm water lake temperatures.
- However often the final byproduct of AEC operation is drinking water.

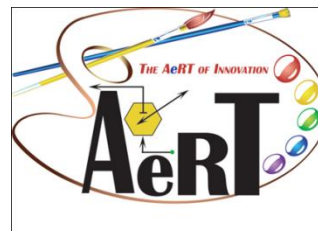
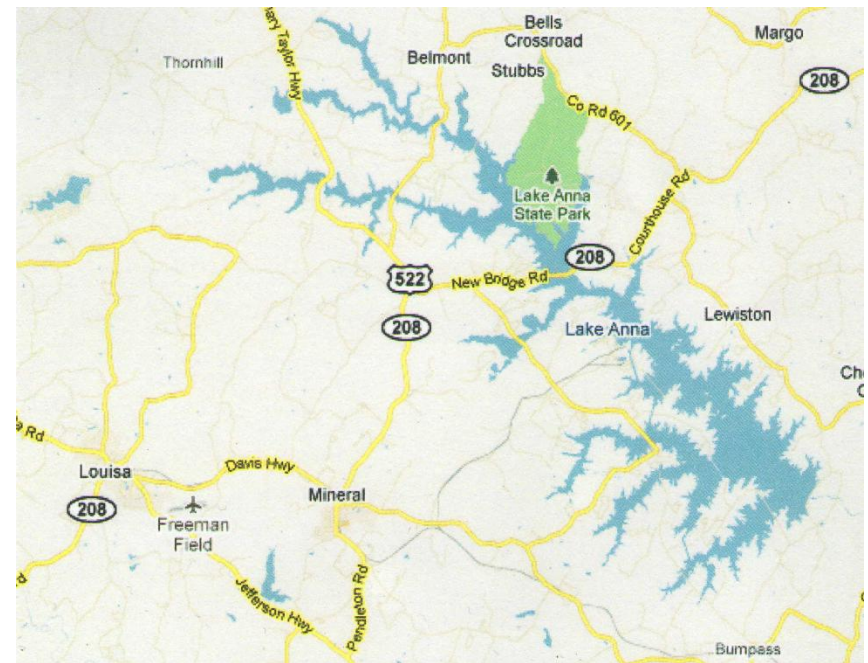


Background of the Invention

BACKGROUND OF THE INVENTION

[0003] When one looks upon the wasted ambient thermal energy of an industrial warm water lake, one wonders if that heat energy could be captured and funneled into productive use, without the use of artificial power or without mechanical means. Likewise, other waste thermal energy sources, such as parking lots or roads, hold such a large amount of heat energy that they change the environmental conditions of cities. In fact, cities can be considered as “urban heat islands” due to the amount of stored energy compared to surrounding areas.

[0004] A renewable energy system that can move thermal energy from these waste heat sources and use the energy productively would both provide a source of energy where it is needed and also provide a re-greening of the waste heat source by reducing its temperature to one that is more suitable for its natural environment.



Artificial Water Cycle

[0035] FIG. 3 shows a second exemplary embodiment of the invention in which the system is configured to recover heat and condensate water. That is, the system can be used to create an artificial and contained water cycle, doing everything that the earth's water cycle does. The system moves humid air to a higher elevation and produces wind, which can be used for green energy production. In this exemplary embodiment, water is condensed by an in-ground subterranean, and through the same containment returns the recovered water to the ambient thermal energy source, e.g., a warm water industrial lake. Moreover, in this exemplary embodiment, the heat is extracted and can be used, for example, in a building HVAC unit, a hot water pre-heat, or a green house slab.

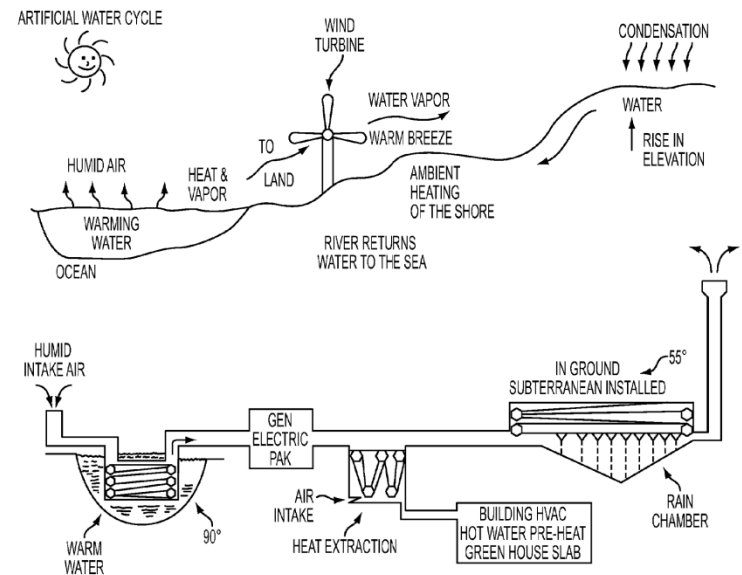
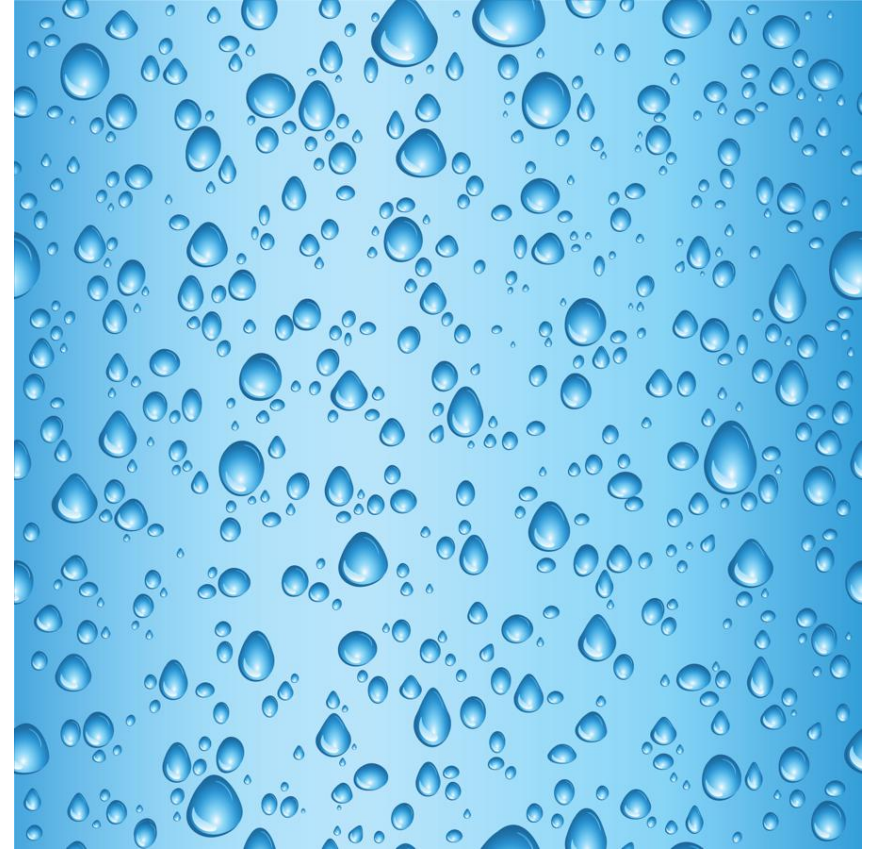
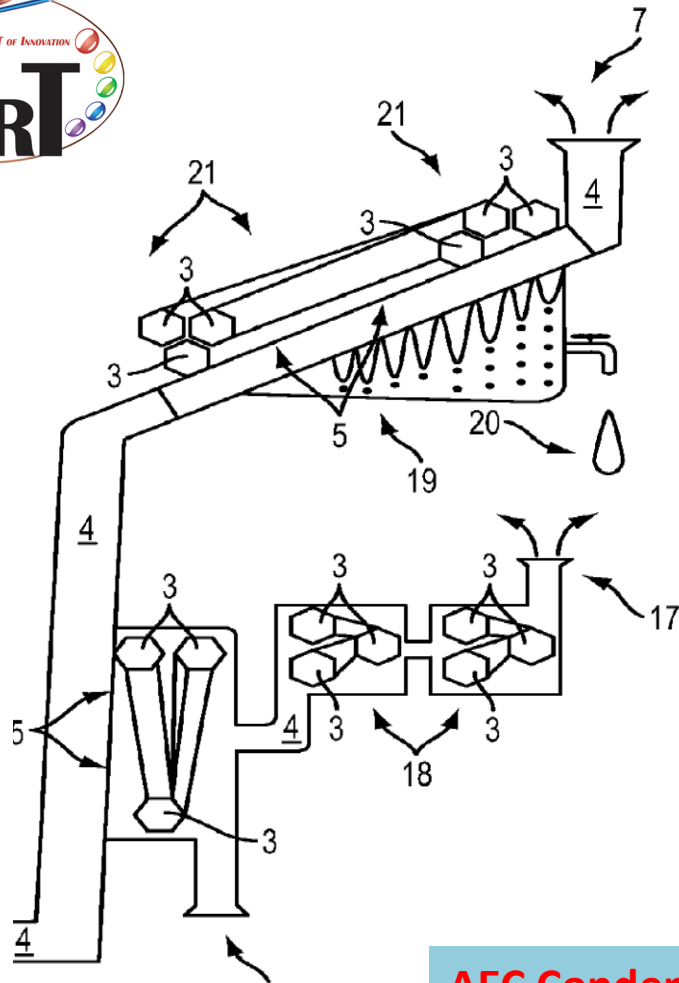
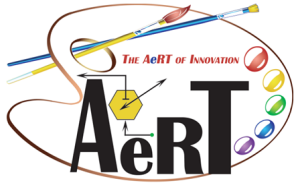


FIG. 3



Rain from Below



AEC Condensation Chamber

Water purifies itself.....



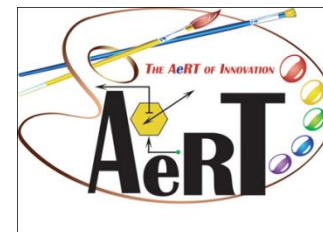
**As water changes its
state of the Matter**



**Water
Responds
To
Stimuli**

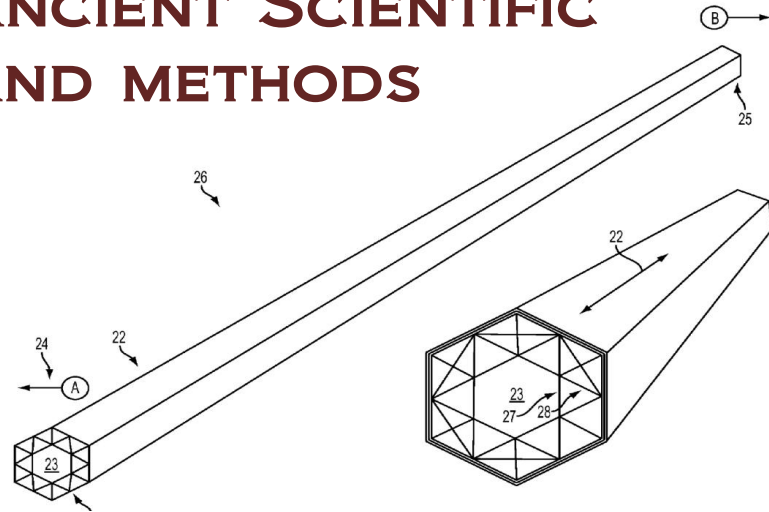
One third of the Earth's people do not have access to clean drinking water.

- **Purified potable water** can also be recovered from air passing through an **AEC system**. Unlike the final output of **conventional waste water treatment plant water**, in which the final water discharged into streams and rivers is often not completely clear of **contaminants, such as pharmaceutical drugs**, the water output of an **AEC** is largely free of contaminants.
- **One third of the Earth's people do not have access to clean drinking water.**
- Whether they live along the shores of **contaminated rivers in India** or among the abandoned shafts of **coal mines in West Virginia, USA**, the system of the present application can be best used to **produce pure drinking water**, even if the system is driven by the thermal energy of polluted and contaminated waters.



AMBIENT ENERGY SCIENCE IS THE MODERN EMBODIMENT AND APPLICATION OF ANCIENT SCIENTIFIC PRINCIPLES AND METHODS

- **By installing an AEC into something and without doing anything more, one accomplishes something forever more!**
- **Nothing moves but things happen—“the essence” of AEC operation.**
- **An AEC and the system and method for transmitting thermal energy utilize the properties of matter, and the physics of natural phenomena.**



Ambient Energy Chamber

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AMBIENT ENERGY RESEARCH TECHNOLOGY

A Science Company

AeRT..... Unleashing the Power of Nuclear Suns

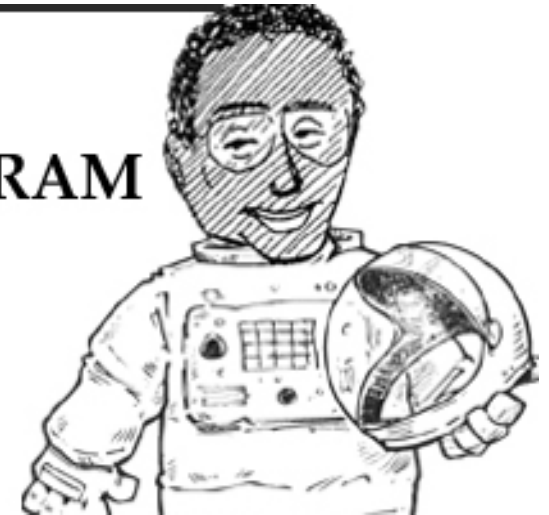
Patent Application Publication
Pub. No.: US 011/010012 A1

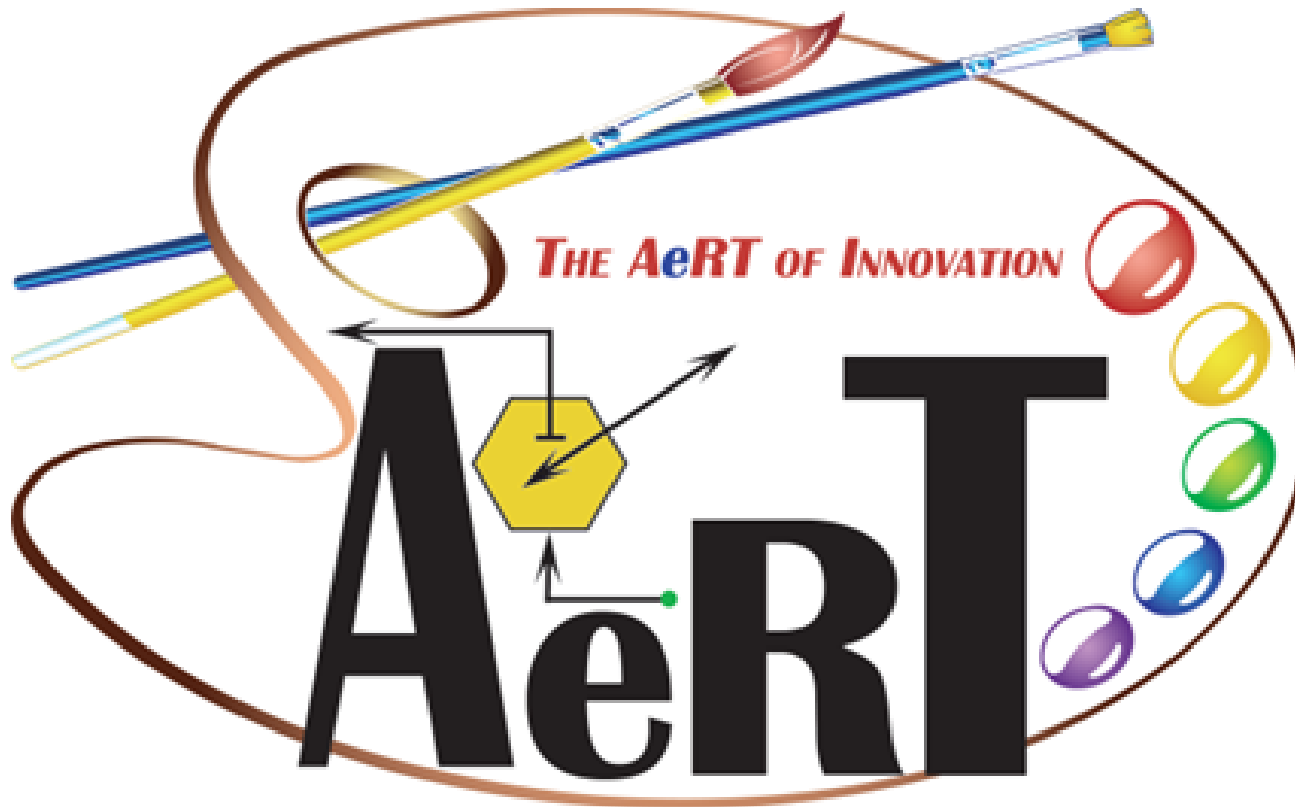
ANCIENT SCIENTIFIC PRINCIPLES AND METHODS



**FREE FUEL ENERGY,
OUR CHILDREN'S SPACE PROGRAM**

Their Mission:
*Healing the Earth and Making
Energy at the same time.*





AMBIENT ENERGY RESEARCH TECHNOLOGY



A Science Company
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