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PLANNING DEPARTMENT

STATEMENT OF JUSTIFICATION
GEP/S HYBRID ENERGY PARK

Zoning Map Amendment Petition,
Special Exception and Commission Permit Applications
ZMAP 2009-0005, SPEX 2009-0009 & CMPT 2009-0001
February 27, 2009
Revised July 31, 2009
Revised August 20, 2009

I. INTRODUCTION

Green Energy Partners/Stonewall LLC ("GEP/S") the Applicant is proposing a rezoning, special exception and a commission permit for the development of a natural gas and solar utility generating plant and transmission interconnection facilities on approximately 90.5 acres. The parcels that are subject to the proposed rezoning, special exception and commission permit applications include Loudoun County Tax Map 60, Parcels 38 (42.47 acres) and 38A (.32 acre) (MCPI 193-38-4362 and 193-49-0539) owned by Evergreen Loudoun – One Limited Partnership; Loudoun County Tax Map 61, Parcel 12 (30.89 acres) (MCPI 193-39-3665) owned by John A. Andrews, Trustee; Loudoun County Tax Map 60, Parcel 39 (4.88 acres of 59.94 acres)(MCPI 194-48-6020) and Loudoun County Tax Map 61, Parcel 14 (11.96 acres) (MCPI 193-29-6778) owned by LTI Limited Partnership, collectively the "Subject Property" consisting of a total of approximately 90.5 acres. A portion of the Subject Property (Tax Map 60, Parcels 38A, 39 and 41) is zoned Transitional Residential -10 ("TR-10") and the remainder of the Subject Property (Tax Map 60, Parcel 38 and Tax Map 61, Parcel 12) is split zoned TR-10 and Joint Land Management Area – 20 ("JLMA-20").

The Subject Property is located on the north and east sides of the Route 267 (Dulles Greenway), east of Route 643 (Sycolin Road), south of Route 653 (Cochran Mill Road) and south and west of Gant Lane (Route 652) in the Catoctin Election District of Loudoun County, Virginia. Sycolin Creek borders the Subject Property to the north and a portion of the Subject Property along Sycolin Creek is zoned JLMA – 20. There are a few scattered residential uses and vacant land along Cochran Mill Road. Property to the east is owned by Luck Stone Corporation and currently zoned TR-10 and proposed to be rezoned to Mineral Resource – Heavy Industry ("MR-HI") for quarry uses (ZMAP 2009-0003). The property to the southeast is currently zoned TR-10 and proposed to be rezoned to MR-HI (ZMAP 2009-0004) by Loudoun Water for a potable water treatment facility. There a few homes on land zoned TR-10 along Sycolin Road to the west of the Subject Property and these homes are 2,000 feet away from the proposed Hybrid Energy Park. Traversing the Subject Property are two 230 kilovolts ("kV") and one 500kV Dominion Virginia Power high voltage transmission circuits on two separate 130 foot tall (approximately) aerial structures located within a 250 foot wide easement.

There are two interstate natural gas transmission lines owned by Columbia Gas and Dominion and located within a 30 foot wide easement traversing the Subject Property in a north/south direction parallel to the electrical transmission lines. These interstate natural gas

lines are unique in that these lines transport gas that originates in two separate areas of the United States, which is particularly advantageous in natural disasters such as hurricanes when gas supplies may be limited or interrupted. Gas from one of the lines originates in the Ohio Valley and the other from the Gulf Coast. The gas lines also connect to TRANSCO, the major east coast gas transportation line, and the Cove Point, Maryland LNG (Liquid Natural Gas) terminal port. A utility generating facility requires a primary and secondary source of fuel. The two natural gas lines provide a reliable source so other types of fuels will not be utilized as a back up source. The Subject Property contains a mixture of open fields and a combination of evergreen and deciduous forested areas. An abandoned barn and the foundation of a house, along with two farm ponds are located upon the Subject Property.

II. BACKGROUND

The State of Virginia is projected to face up to 4,000 megawatts ("MW") power shortage over the next ten years and approximately 70% or 2,800 MW of the shortage will be in the Northern Virginia region. Electric energy production in the Northern Virginia region is limited and severe transmission constraints and congestion in the Northern Virginia power grid inhibits the orderly distribution of power in the region which may cause rolling brownouts and blackouts and power outages in the near future. Dominion Virginia Power has said brownouts could start as early as 2011, in Northern Virginia. Electric power is distributed within Virginia by an electric power transmission system. The transmission system consists of high-voltage, high-capacity transmission components, including 765kV transmission lines in the western Virginia service area of American Electric Power and 230kV and 500kV transmission lines in other parts of the state.[1] A network of smaller, lower voltage lines distributes the power from the larger power lines and individual generating facilities to consumers in urban and rural areas.[2] The power lines traversing the Subject Property are two 230kV and one 500kV.

Pennsylvania-Jersey-Maryland Interconnection Market (PJM), (the local Regional Transmission Organization (RTO)) proposes a super grid concept of massive transmission projects connecting large areas within the mid-Atlantic region. However, the report[3] that analyzed the massive August 2003 transmission grid outage clearly showed that overall management of this large grid has flaws that require human intervention and reaction in time to react in time to prevent rolling blackouts. A super grid of long-distance transmission lines is less important in the overall picture because of a new drive for energy efficiency, conservation, and most importantly more local control and generation closer to load centers. The idea of local control (islanding) is not new, and involves effectively managing the power supply and reliability within a smaller area.

[1] 2009 Virginia Center for Coal and Energy Research website: www.energy.vt.edu/vept. Virginia Energy Patterns and Trends, Virginia Electric Energy
[2] Ibid.
[3] U.S.-Canada Power System Outage Task Force. "Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations", April 2005

Northern Virginia and Loudoun County are leaders in the high technology industry and are facing escalating reliability problems with electrical power generation and transmission which has resulted in threats of rolling blackouts, appeals for voluntary curtailment by consumers, and proposals to construct numerous transmission lines throughout Loudoun County. Resolving electricity reliability problems in a crisis atmosphere undermines customer confidence and is almost always unnecessarily expensive with cost frequently driven by areas other than the appropriate fuel and technology.

Electricity is an integral part of life and electric system reliability is indispensable to support residential, commercial, industrial and governmental functions. Lack of reliable electricity is not just an inconvenience, but it creates an economic loss. Loudoun County has become one of the prime locations for internet related companies. These internet related companies include numerous data centers that create high value tax revenues with few employees. With Loudoun County's foresight the issue of electrical self sufficiency and security in the future would allow for the continuation of the expansion of these high value tax paying companies to locate within Loudoun County.

Power plants are generally long-lived investments; the majority of the existing generating capacity in Virginia is 30 or more years old. Because of the expected retirement of many aging plants in the existing fleet, growth of the information economy and economic growth, and the forecasted growth in electricity demand, America faces a significant need for new but clean electric power generation. North America's world-class electric system is facing several serious challenges. Major questions exist about its ability to continue providing citizens and businesses with clean, reliable, and affordable energy services. The term transmission grid congestion is routinely used around large load centers. Congestion within the transmission grid are simply bottlenecks in the electrical network that will, if uncorrected, interfere with regional economic development and growth. This congestion becomes amplified if one of the regional long distance transmission lines should fail during a peak load period. The information economy requires a reliable, secure, and affordable electric system to grow and prosper. Unless substantial amounts of capital are invested over the next several decades in new generation, transmission, and distribution facilities, service quality will likely degrade and costs will go up[4]. We have all heard Dominion Virginia Power forecasting potential outages and escalating costs. The local community needs to be a key player and exhibit active control.

Energy prices are on the rise, Northern Virginia Electric Cooperative ("NOVEC") has increased 62% in power costs from 2002 to 2008, and Dominion Virginia Power has received approval and has implemented an increase of 18% in 2008, and has a case pending to further increase rates.

Approximately 90% of the electrical energy generated by utilities in Virginia is produced from coal and nuclear sources. Production and combustion of coal results in the largest environmental impacts of all fossil fuels. Technology for capturing and sequestering carbon

[4] US Department of Energy Office of Electrical Delivery and Energy Reliability, GridWorks. "Overview of the Electric Grid" http://www.energistics.com/gridworks.grid.html

dioxide is expensive and unproven. Natural gas used for electrical power generation emits roughly 50% the amount of greenhouse gas (CO2) per unit of power produced as compared to coal, and 15-20% less than oil. Natural gas has an additional advantage over coal when used in highly efficient combined cycle gas turbines,[5] such as those proposed for the GEP/S Hybrid Energy Park. The proposed Hybrid Energy Park will provide the means to produce electric power in a clean and efficient manner.

During congressional testimony, James Hansen, a noted climatologist and Director of NASA's Goddard Institute for Space Studies, told lawmakers that "phasing out the use of coal except where carbon is captured . . . is the primary requirement for solving global warming".[6] Carbon capture technology is not expected to be commercially available for many years. The Environmental Protection Agency data on individual coal-fired generating units found that in 2020, 68% of the 1,041 total coal-fired, electric-generating units in the eastern half of the U.S. will still lack scrubbers for removal of sulfur dioxide or advanced nitrogen oxides emissions controls.[7] In Loudoun County, the general movements of coal generation emissions are carried by the wind from the west through the County.

In-state electric-power generation is far from sufficient to satisfy the State's consumption. On average only 80% of the electrical energy used by Virginia consumers is generated in-state. Approximately 20% is imported from out-of-state generators on power transmission lines to supply Virginia residents and businesses[8]. There are electrical loses due to line resistance when transporting power from other areas.

Dominion Virginia Power received permission in March of this year from the Virginia State Corporation Commission ("SCC") to build a new 580 MW electric generating facility (natural gas with oil as a backup source) in Buckingham County, Virginia. The Richmond Times-Dispatch published on March 28, 2009, reported that Dominion Virginia Power also received permission to build a 230kV transmission line that will run from the generating station to the existing Bremo electricity substation in Fluvanna County, Virginia. In its order, the SCC said Dominion Virginia Power needs new generating capacity in its Virginia service zone to meet growing energy demand and changing system conditions. New generation within the Dominion service zone provides a greater certainty that additional capacity will be available as needed, rather than that provided by existing resources within or outside of the service zone. Mark F. McGetttrick, president and chief executive officer of Dominion Generation, which will operate the Buckingham County plant, stated "We are pleased with the decision and the SCC's recognition that new generation is needed in Virginia." Virginia imports more electricity than any other state except for California and an over-reliance on imports is inconsistent with the needs of our customers and the goals of the Virginia Energy Plan. Demand for the company's electricity is projected to grow by about 4,000 MW during the next decade.

[5]Virginia Chapter Sierra Club, "The Citizens Energy Plan for Virginia", 2007.
[6] Northern Virginia Magazine. "Plant Life" by Travis Hicks, January 2009.
[7] NPR.org. "U.S. Power Plants Slow to Clean Up Their Act" by Elizabeth Shogren, August 20, 2006.
[8] Ibid.

To address the growing demand for electricity, the Applicant is proposing to build a Hybrid Energy Park with nominal output of approximately 981 MW that will provide year-round primary (or intermediate load) power, as well as peak power during periods of highest demand typically in the summer and winter months. Primary power will be provided by a combined cycle energy facility utilizing two natural gas fueled combustion turbines and one steam turbine producing approximately 586 MW at ISO (ISO-International Organization for Standardization) conditions of 59°F and 60% relative humidity. Peaking power will be provided by two natural gas fueled simple cycle combustion turbines producing approximately 197 MW each at ISO conditions. In addition, the facility will include a solar array of up to 1 MW. The actual output of the combined cycle and simple-cycle combustion turbine units depends on the ambient temperature, with the output increasing as the temperature decreases. The actual output may also vary depending upon the equipment manufacturer selected. The solar array, combined cycle and simple-cycle generating facilities will provide a dedicated and reliable source of power for the regional electrical grid covering our immediate area. Power generated onto a transmission grid takes the path of least resistance seeking load, and Northern Virginia is an obvious major load center. Additionally, the Hybrid Energy Park will help attract business and high tech industry uses which will be provided with a redundant, efficient and reliable source of energy that is necessary for high tech and data center reliability.

The Hybrid Energy Park facilities are proposed to include a water-cooled system utilizing treated effluent from the Leesburg wastewater treatment plant which is currently piped into the Potomac River. Based upon the hours per day of operation, the Hybrid Energy Park facilities may utilize up to approximately five million gallons per day (net) of waste water effluent for cooling water and process water. This process could eliminate up to two billion gallons of effluent per year that is currently being discharged directly into the Upper Potomac River Basin that feeds into the Chesapeake Bay from the Leesburg wastewater treatment plant. This process will be the first one of its type in the Upper Potomac River Basin and will be a prime example of being able to show local governments ability to help clean up the Chesapeake Bay. The Applicant is having discussions with the Town of Leesburg to use the waste water effluent from the Leesburg wastewater treatment plant. The Hybrid Energy Park plans to treat, re-circulate, and reuse all the cooling water, thus nearing zero discharge. Only in a maintenance situation will any water used in the process be returned to the Leesburg wastewater treatment plant. Even though the water would be clean enough to be discharged into the Potomac River, it will not be released on site. As a second alternative, he Applicant is discussing with Loudoun Water the use of reservoir water as a back up or secondary source of cooling water. A third alternative is the use of an air cooled system.

There is a proposal for constructing a controversial $1.8 billion overland power line to import power into Northern Virginia from several coal powered plants west and outside of the region due to the lack of electric generating facilities in this area. According to studies by the RW Beck Company, a hybrid energy facility such as this at the proposed location will relieve congestion of the regional power grid and will meet the future demand for power in the region. GEP/S has a viable solution for the long term economic health, security and prosperity of our region. GEP/S has the best location, the cleanest most efficient and proven modern technology for producing clean power, and a process that utilizes natural gas, steam, solar and potentially

wastewater effluent from the Leesburg wastewater treatment plant, contributing to cleaner air and cleaner water in the Potomac River and the Chesapeake Bay.

The enclosed report prepared by PowerGEM titled "Leesburg Generation Study" dated July 7, 2009, states "In all of the system models that were studied the Green Energy Partners/Stonewall proposed 980 MW generator resulted in a large reduction (between 18% and 21%) in reliance on external power to be delivered through the transmission system to serve the load in the Loudoun County and Leesburg area." With the addition of the Hybrid Energy Park, the PowerGEM system models assumed reductions in various existing generators that predominantly use coal, such as Mt. Storm, Chesterfield, Possum Point, Chalk Point and Dickerson.

The Subject Property has the necessary existing resources for an energy park with two interstate natural gas transmission pipelines and three high voltage Dominion Virginia Power transmission circuits traversing the Subject Property and proximity to water sources. These transmission lines serve Virginia as part of the PJM RTO which controls the transmission of power in the entire mid-Atlantic region. By utilizing two separate gas supply lines and having direct access to the interstate and regional power grid, the proposed Hybrid Energy Park will make a major contribution to national and regional energy security and make Loudoun County more energy self sufficient while making a substantial contribution to the cleanup of the Chesapeake Bay.

III. PROPOSAL

The Applicant is proposing to rezone the Subject Property to the MR-HI zoning district and is requesting special exception and commission permit approval for a nominal 981 MW utility electric power generating plant and related transmission interconnection facilities uses pursuant to Section 3-1004(AA) of the Zoning Ordinance. More specifically, the Applicant is proposing to build an approximately 586 MW natural gas fueled combined cycle primary power unit, two approximately 197 MW (each) natural gas fueled simple cycle peaking units, and a solar array of up to 1 MW. The Hybrid Energy Park will utilize up to approximately 5 million gallons per day of waste water effluent for cooling water and other process water needs in the production of energy, and may approach zero discharge for return water to the Leesburg wastewater treatment plant.

The primary power unit will incorporate two natural gas fueled combustion turbine generators in a 2x1 configuration. Heat from the combustion turbines is sent through closed heat recovery steam generators ("HRSG") to produce steam which is used to drive a single steam turbine generator. This is called a combined cycle facility, which converts nearly 60% of the energy from the natural gas used to power the turbines into electricity. Coal fired energy plants have an efficiency considerably below that of the modern combined cycle plants. Water or air is used to condense the steam back into water to repeat the process. Excess steam produced by the Hybrid Energy facility could be used to heat and cool several million square feet of data centers and other buildings within a service area. The use of the excess steam to heat and cool buildings

is being utilized throughout the U.S. and Europe, and is referred to as combined heat and power ("CHP"). This type of CHP system with the added benefit of cold water production from the facility could provide the ability to reduce power requirements in future data centers.

The enclosed report prepared by ChmuraEconomics&Analytics, titled "The Economic and Fiscal Benefit of a Proposed Energy Generating Plant in Loudoun County, Virginia" dated July 10, 2009, provides the following information: Preliminary estimates of the total cost of the facility are $829,000,000 and will provide an economic engine for Loudoun County, in construction, jobs, tax revenues and a reliable source of Green energy. After the Hybrid Energy facility is in operation, it is estimated that tax revenues for Loudoun County will be up to $12,000,000 by 2015, and stabilizing by 2019, at over $8,000,000 per year. In addition to these tax revenues, Loudoun County charges an electricity utility tax for residential and commercial uses and that annual tax is estimated to be $1,200,000 per year.

The Issues for Consideration for rezoning and special exception applications contained in Sections 6-1211(E) and 6-1310 of the Zoning Ordinance are addressed in the Attachment to this Statement of Justification.

IV. COMPREHENSIVE PLAN AND COMMISSION PERMIT

The Subject Property is located within the Transition Policy Area and the Lower Sycolin Subarea as specified in Loudoun County's Revised General Plan (RGP). The Transition Policy Area serves as a visual and spatial transition between the Suburban and Rural Policy Areas and envisioned that it will provide some *unique development opportunities* (emphasis added). The non-residential component of the Transition Policy Area will be comprised of compatible uses that represent an appropriate transition from suburban to rural land uses. The proposed Hybrid Energy Park, a truly unique development opportunity will provide a compatible transition from suburban to rural land uses while protecting the Luck Stone Quarry from residential development.

More specifically, development of the Hybrid Energy Park supports the following RGP Policies:

TRANSITION POLICY AREA POLICIES

Policy 1: The County will protect the drinking water resources of the Occoquan, Beaverdam, and Goose Creek Reservoirs by limiting density in the Lower Bull Run, Middle Goose, and Lower Sycolin subareas.

The proposed Hybrid Energy Park facilities may utilize up to approximately five million gallons per day (net) of waste water effluent for cooling water and process water in the generation of electricity. Depending on the hours per year of operation, this unique process could eliminate up to two billion gallons of effluent per year that is currently being discharged directly into the Potomac River that feeds into the Chesapeake Bay

from the Leesburg wastewater treatment plant. Steam produced in the Hybrid Energy Park could be used to heat and cool the data centers and buildings within a service area. The Hybrid Energy Park facilities may approach zero discharge and process water will not be discharged into the stormwater management pond or Sycolin Creek. The entire site drains away from the Goose Creek Reservoir.

The existing pond on site will be improved for stormwater management and water quality. Additionally, surface and stormwater will be regulated under a VPDES permit issued by DEQ. The net effect of the facilities will improve water quality in the Potomac River and Chesapeake Bay.

Policy 2: The County's vision for the Transition Policy Area is for land uses that provide a visual and spatial transition between the suburban development in the east and rural development in the west. The Transition Policy Area will be developed as a unique and innovative blend of rural and suburban development features that fully integrate the elements of the Green Infrastructure, and establish natural open spaces as a predominant visual element and enhancement to the area's river and stream corridors.

Proposed with the Hybrid Energy Park are a River Stream Corridor Overlay District (RSCOD) and the stream valley buffer along Sycolin Creek and floodplain area within the Subject Property. The wetlands areas will not be disturbed, with the exception of improvements to Gant Lane, the site access, and underground utility lines required for the development of the Hybrid Energy Park. The Hybrid Energy Park is a unique development opportunity that is appropriate at this location due to the existence of the natural gas lines, high voltage power lines, water resources, quarry uses, the airport noise impacts, in addition to the proposed rezoning applications by Luck Stone and Loudoun Water. The topography of the area including forested ridges and valleys makes the Hybrid Energy Park less visible from the surrounding area.

Policy 3: Central utilities may be extended to the all subareas of the Transition Policy Area.

The Hybrid Energy Park can be served by public water and sanitary sewer service.

Policy 7: The County will continue to protect the extractive industry (Bull Run and Luck Stone quarries) through a quarry zoning overlay district.

The Hybrid Energy Park is proposed as MR-HI which is compatible with the Luck Stone quarry and expansion which are also zoned or proposed to be rezoned to MR-HI. The Hybrid Energy Park is complimentary and compatible with the operations of a quarry and will protect the quarry from residential encroachment.

TRANSITION POLICY AREA COMMUNITY DESIGN

The densities and open space requirements associated with Villages and Residential Clusters are directly related to specific subareas. The desired density and development pattern for each subarea is provided below.

Lower Sycolin and Middle Goose Subareas

The County envisions that the Lower Sycolin and Middle Goose subareas in the northern portion of the Transition Policy Area will have a base density of one dwelling unit per ten acres in a clustered development pattern. Clusters will be smaller developments supporting between 5 to 25 units, predominantly single-family residential units in individual hamlets. Rezonings to Rural Villages with incorporation of the design criteria for Rural Villages contained in the 1993 Zoning Ordinance at one dwelling unit per three acres will be permitted when 70 percent of the site is maintained as open space. The County envisions that these two subareas will have a more rural character, with lower densities and higher open space requirements than that in the other subareas, to facilitate a transition to the Rural Policy Area. Open spaces will be the dominant visual feature of the landscape.

All new developments within the Landfill Water Service Area District in the Lower Sycolin subarea will be required to be served by central water lines. Central and communal water and wastewater systems are preferred over individual utility systems in all other areas of the Lower Sycolin and Middle Goose subareas. Wastewater systems proposing subsurface or surface discharge will be discouraged in these subareas, given their proximity to the Goose Creek and Beaverdam reservoirs. Alternate sewage disposal systems that ensure a high level of treatment and offer efficiencies in cost, operation and maintenance will be encouraged.

Luck Stone Quarry, located within the Lower Sycolin subarea, will continue to be protected from encroaching residential development. Also, the creation of a buffer and voluntary open space area that is consistent with the RSCOD policies is a priority in this subarea.

> Residential uses within the Subject Property are not appropriate due to the Quarry Overlay District, the Airport Impact Overlay District, and proximity to the two high pressure natural gas lines and the overhead high voltage power lines. Luck Stone Quarry will be protected from encroaching residential development with the Hybrid Energy Park. Additionally, the creation of the proposed RSCOD buffer and the stream valley buffer around the floodplain area and Sycolin Creek are consistent with the RSCOD policies which is a priority in this Subarea.

Policy 2: The County will establish a density of one dwelling unit per ten acres with development clustered on lots up to three acres in the Lower Sycolin and Middle Goose subareas. The County will provide the option to rezone to a Rural Village with a density of one dwelling unit per three acres in accordance with the 1993 Zoning Ordinance. Development will be clustered to maintain a minimum of 70 percent of a site as open space.

Residential uses within the Subject Property are not appropriate due to the Quarry Overlay District, the Airport Impact Overlay District, proximity to the high pressure natural gas lines, secure community water treatment plant and the overhead high voltage power lines and transmission towers. Luck Stone Quarry will be protected from encroaching residential development with the Hybrid Energy Park.

Policy 14: Adding to the creation of the greenbelts and buffer will be credited to the satisfaction of open space requirements.

The RSCOD area proposed within the Hybrid Energy Park will contribute to a greenbelt in addition to the open spaces in the Philip A. Bolen Memorial Park that are adjacent to the Town of Leesburg.

Policy 15: The County will encourage the development of non-residential uses in the Transition Policy Area that provide a transition from suburban to rural. Such uses may include but are not limited to equestrian centers, golf courses, retail nurseries, boarding schools and kennels, large institutions provided they meet specific criteria that address the nature, scale and intensity of the use, market area and design characteristics.

The proposed Hybrid Energy Park provides a unique transition from suburban to rural areas. The unique location provides Loudoun County with secure energy production in an area of forested ridges and valleys that hide the Park from view from the surrounding area protect the natural resources of the Luck Stone Quarry and Goose Creek Reservoir. Situated within the Airport Impact Overlay District and the Quarry Overlay District, residential uses are inappropriate in this location.

Policy 26: The County will protect the Bull Run Quarry in the Lower Bull Run subarea and the Luck Stone Quarry in the Lower Sycolin subarea from incompatible uses by ensuring that encroaching new development does not hinder the quarry operation.

The Hybrid Energy Park will protect the Luck Stone Quarry from residential uses which are not compatible, nor appropriate near the future quarry operations.

GREEN INFRASTRUCTURE POLICIES

The Green Infrastructure Policies outlined in Chapter Five: Green Infrastructure: Environment, Natural and Heritage Resources of the Revised General Plan apply in the Transition Policy Area and are a fundamental component of the land use pattern to be developed. Among the existing Green Infrastructure assets in the policy area are the following:

Geological Resources

The policy area contains concentrations of diabase rock used for the construction of roads and buildings. The Bull Run quarry is an active quarry located at the southern end of the

Transition Policy Area in the Lower Bull Run subarea. The Luck Stone quarry is also an active quarry located at the northern end of the policy area.

The Luck Stone Quarry will be protected from residential development by the Hybrid Energy Park. The transition from diabase to metamorphosed siltstone and sandstone occurs at the eastern limits of the transmission lines allowing full utilization of these geological resources.

Mineral Resource Extraction Policies

Policy 1: Quarrying is an industry based on the natural resources of the County and shall be encouraged and the resource protected.

The Luck Stone Quarry will be protected from residential development by the Hybrid Energy Park. The Hybrid Energy Park is a compatible use to the Quarry. The natural resources of diabase transitioning to metamorphosed siltstone and sandstone is located at the eastern limits of the transmission lines on the Subject Property as stated above.

Luck Stone is on an interruptible power circuit with NOVEC, meaning if electric power is needed elsewhere the power to Luck Stone can be interrupted and shut off. The Hybrid Energy Park will reduce or eliminate the interruption by providing an ample, reliable source of electric power to Loudoun County and therefore to the Luck Stone Quarry.

Policy 2: The County will recognize and protect its viable extraction industry. The County will protect viable quarries and its diabase resource areas from incompatible neighboring uses. New development will take existing quarries into account.

The proposed Hybrid Energy Park is a compatible use with the Luck Stone quarry operations and it will protect it from residential development.

Policy 3: The County will foster efficient use of its diabase resource. To help achieve this goal, the County will maintain a quarry zoning district that should provide a total of at least 800 acres in Loudoun County to be set aside for extraction and associated activities. The quarry zoning district will make quarrying a permissible use. No residential uses other than watchman's quarters will be permitted in this district. Non-residential uses will be limited to low coverage, heavy industrial uses that will not be adversely affected by quarry operations.

The MR-HI zoning district that is proposed with the Hybrid Energy Park is consistent with the proposed rezoning of the adjacent Luck Stone property and quarrying uses. The Hybrid Energy Park is compatible with and will not be adversely affected by the quarry operations.

Policy 4: Quarry zoning districts should be located on areas where quarries presently exist and/or in industrial communities where the diabase is within the Ldn 65-noise contour of an airport. Areas within the 65 Ldn noise contour and adjoining existing quarries should be preserved for this purpose.

The proposed MR-HI zoning district is appropriate for the Subject Property which is immediately adjacent to the Luck Stone property proposed to be rezoned to MR-HI and used for quarrying. Additionally, the Subject Property is within the Quarry Overlay District and within the Airport Impact Overlay District. The diabase formation transitions to metamorphosed siltstone and sandstone at the eastern end of the transmission line easement.

FISCAL PLANNING AND BUDGETING POLICIES

Policy 2: The County seeks to maintain an affordable real-property tax rate by balancing, on a timely basis, residential and non-residential development in conformance with the overall policies of the Revised General Plan.

The enclosed report prepared by ChmuraEconomics&Analytics, titled "The Economic and Fiscal Benefit of a Proposed Energy Generating Plant in Loudoun County, Virginia" dated July 10, 2009, provides the following information: Preliminary estimates of the total cost of the facility are $829,000,000 and will provide an economic engine for Loudoun County, in construction, jobs, tax revenues and a reliable source of Green energy. After the Hybrid Energy facility is in operation, it is estimated that tax revenues for Loudoun County will be up to $12,000,000 by 2015, and stabilizing by 2019, at over $8,000,000 per year. In addition to these tax revenues, Loudoun County charges an electricity utility tax for residential and commercial uses and that annual tax is estimated to be $1,200,000 per year.

Policy 3: The County will seek further revenue diversification, which will increase fiscal stability and thereby, mitigate tax burdens on Loudoun County taxpayers.

See above.

ECONOMIC DEVELOPMENT POLICIES

Policy 1: Loudoun seeks and promotes a diverse economic base in multitude of industries that it is not entirely dependent upon any single employer or employment sector.

The Hybrid Energy Park will diversify the economic base in Loudoun County. It will provide a clean, reliable and renewable source of electrical power that is critical and necessary for high tech and data center reliability and will help attract data center uses further diversifying Loudoun County's economic base.

Policy 4: The County recognizes that economic policy and land use policy must be coordinated. The County seeks to implement the economic goals as adopted and subsequently amended by the Board of Supervisors in Loudoun County's Economic Development Plan and Growth Strategy within the framework provided by the Comprehensive Plan.

The positive economic impacts of the proposed Hybrid Energy Park further the goals and policies of the RGP. The Hybrid Energy Park will provide energy for Loudoun County and northern Virginia, and keep costs more reasonable than importing electricity from other areas outside of the region.

ENERGY AND COMMUNICATIONS POLICIES

Policy 4: Electric generation facilities that use clean burning and environmentally sound and proven fuel sources for power generation can be located only where their impact on the surrounding land uses and the environment is compatible.

The proposed Hybrid Energy Park is compatible with the surrounding land uses and environment. The solar array, combined cycle and simple-cycle generating facilities will provide a dedicated and reliable clean and renewable source of power for the regional electrical grid covering Loudoun County. It will use efficient and proven modern technology for producing clean power utilizing natural gas from the existing interstate pipelines, solar energy, and waste water from the Leesburg wastewater treatment plant which will further contribute to the clean up the Potomac River and the Chesapeake Bay.

AIR QUALITY POLICIES

Policy 4: The County will comply with the requirements of the Federal Clean Air Act Amendments of 1990 through support of the State Implementation Plan.

The Hybrid Energy Park will be required to comply with the requirements of the Federal Clean Air Act Amendments of 1990. All emissions from the Hybrid Energy Park facilities will be closely regulated and monitored by the Virginia Department of Environmental Quality ("VA DEQ") through an air permit that is issued prior to the start of construction. Furthermore, natural gas generates 50% less carbon dioxide than coal and 15-20% less than oil in the production of electricity. Natural gas has an additional advantage over coal when used in highly efficient combined cycle gas turbines as proposed in the Hybrid Energy Park. The Hybrid Energy Park facilities will produce virtually zero sulfur dioxide and very low amounts of NOx. The Hybrid Energy Park will provide the means to efficiently produce electricity in a Green and clean manner.

The proposed Hybrid Energy Park will be designed with air pollution control technology as advanced as any plant in the United States, Western Europe and Japan to reduce

discharges.[9] The enclosed report titled "Air Quality Study of Green Energy Partners/Stonewall Solar and Natural Gas-Fired Power Plant at Leesburg, VA" and prepared by MACTEC, dated July 1, 2009, states "Once the plant is built and is operating under the maximum emissions scenario, there will be negligible effect on the air quality levels at the plant property line, in any of the communities surrounding the plant, the Town of Leesburg, or ay other receptors downwind from the source."

Additionally, the Hybrid Energy Park will reduce Loudoun County's reliance for power generated by coal powered facilities, which will reduce the pollutants in the Washington Metropolitan Nonattainment Area.

Policy 5: Loudoun County acknowledges its location in the Washington, DC-MD-VA Non-attainment Area. The County will continue to play an active role on the Metropolitan Washington Air Quality Committee (MWAQC) and the National Capital Region Transportation Planning Board (TPB) and will do its part in the implementation of the Phase II Attainment Plan for the Washington Metropolitan Nonattainment Area, as well as future emissions reduction programs.

The Hybrid Energy Park facilities will utilize air pollution control equipment that represents the best technology available, including oxidation catalyst to control CO and a dry low-NOx combustion system and selective catalytic reduction system to control NOx. Any required emission offsets for NOx will be obtained from other existing sources in the metropolitan Washington, DC area, as directed by DEQ.

The proposed Hybrid Energy Park as demonstrated above is in accordance with the Comprehensive Plan, as required by Section 6-1100 of the Zoning Ordinance.

V. TRANSPORTATION

Access to the Hybrid Energy Park will be from Gant Lane with a secured entrance. As stated in the previously submitted Memorandum prepared by Patton Harris Rust & Associates, dated February 25, 2009, there will be approximately 25-full time employees at the Hybrid Energy Park. These employees will generate 24 AM peak hour trips, 26 PM peak hour trips and 89 Average Daily Trips.

VI. SUMMARY

Approval of the proposed rezoning, special exception and commission permit applications are the first steps in a long process for approval of the Hybrid Energy Park which requires additional Federal and State agencies approval.

[9] MACTEC, Air Quality Study of Green Energy Partners/Stonewall Solar and Natural Gas-Fired Power Plant at Leesburg, VA. July 1, 2009, p. 1.

The Subject Property is unique and has the necessary existing resources for an energy park with two interstate natural gas transmission pipelines and three high voltage Dominion Virginia Power transmission circuits traversing the Subject Property. These transmission lines serve Virginia as part of the PJM RTO which controls the transmission of power in the entire mid-Atlantic region. By utilizing two separate gas supply lines and having direct access to the interstate and regional power grid, the proposed Hybrid Energy Park will make a major contribution to national and regional energy security and make Loudoun County more energy self sufficient while making a substantial contribution to the cleanup of the Chesapeake Bay. This process of utilizing wastewater plant effluent will be the first one of its type in the Upper Potomac River Basin and will be a prime example of being able to show local governments ability to help clean up the Chesapeake Bay.

Electricity generated by the cleanest and most efficient state of the art technology available will supply Loudoun County with power and address the shortage and transmission congestion in the Northern Virginia region. The Hybrid Energy Park will reduce the need for additional overhead power transmission lines in Loudoun County that are importing power from outside of Virginia and reduce Loudoun County's reliance on coal power generating plants.

The proposed Hybrid Energy Park is consistent with the Comprehensive Plan. The Subject Property is located within the Transition Policy Area and the Lower Sycolin Creek Subarea as specified in the Loudoun County's Revised General Plan. The Transition Policy Area serves as a visual and spatial transition between the Suburban and Rural Policy Areas and envisioned that it will provide unique development opportunities (emphasis added). The non-residential component of the Transition Policy Area will be comprised of compatible uses that represent an appropriate transition from suburban to rural land uses. The Luck Stone quarry which borders the Subject Property to the east will be protected from residential development by the Hybrid Energy Park. The Hybrid Energy Park will attract data center users that require high security which will fulfill the needs for a Federal Government Contracting Industry Cluster while providing Loudoun County with a significant increase in tax revenues.

For the reasons stated above, the Applicant respectfully requests a recommendation of approval from Staff and the Planning Commission and approval by the Board of Supervisors of the Hybrid Energy Park.

ATTACHMENT

STATEMENT OF JUSTIFICATION
GEP/S HYBRID ENERGY PARK
ZMAP 2009-0005, SPEX 2009-0009 & CMPT 2009-0001
Zoning Map Amendment Petition and Special Exception Application
Issues for Consideration

Section 6-1211(E) of the Revised 1993 Loudoun County Zoning Ordinance states: "If the application is for reclassification of property to a different zoning district classification on the Zoning Map, . . . The Planning Commission shall give reasonable consideration to the following matters...".

(1) Whether the proposed zoning district classification is consistent with the Comprehensive Plan.

The proposed MR-HI zoning district classification and the development of the Hybrid Energy Park are consistent with the Comprehensive Plan. The Subject Property is located within the Transition Policy Area and the Lower Sycolin Creek Subarea as specified in the Loudoun County's Revised General Plan (RGP). The Transition Policy Area serves as a visual and spatial transition between the Suburban and Rural Policy Areas and envisioned that it will provide some unique development opportunities (emphasis added). The non-residential component of the Transition Policy Area will be comprised of compatible uses that represent an appropriate transition from suburban to rural land uses. The Luck Stone quarry expansion proposed to be rezoned to MR-HI that borders the Subject Property to the east will be protected from residential development by the Hybrid Energy Park.

(2) Whether there are any changed or changing conditions in the area affected that make the proposed rezoning appropriate.

The proposed rezoning to MR-HI for the Hybrid Energy Park is appropriate and compatible with the changing conditions of the adjacent properties to the east. The expansion and proposed rezoning of the Luck Stone Quarry properties and the Loudoun Waters proposed water treatment plant to the east and southeast of the Subject Property have changed the land use conditions of the area.

The existing conditions on the Subject Property, consisting of the gas lines and high voltage transmission lines make the proposed rezoning appropriate for the Hybrid Energy Park.

(3) Whether the range of uses in the proposed zoning district classification are compatible with the uses permitted on other property in the immediate vicinity.

The proposed Hybrid Energy Park industrial use is compatible with the other industrial uses such as the Luck Stone quarry and the proposed Loudoun Water water treatment plant on the property in the immediate vicinity to the east.

(4) **Whether adequate utility, sewer and water, transportation, school and other facilities exist or can be provided to serve the uses that would be permitted on the property if it were rezoned.**
Public water and sewer are available from Loudoun Water, water may also be available from the Town of Leesburg. There are existing overhead power lines, and gas lines on the Subject Property. Transportation improvements will be made to the site's access to serve the approximately 25 employees of the Hybrid Energy Park. Since the proposed development does not contain residential uses, there will be no impact on public schools.

(5) **The effect of the proposed rezoning on the County's ground water supply.**
Stormwater management and best management practices will be incorporated into the site design which will assist in maintaining the quality of the ground water supply. The Applicant will comply with requirements of the Facilities Standards Manual Section 5.320.E that requires the implementation of a stormwater pollutant prevention plan. Additionally, surface and stormwater will be regulated under a DEQ issued VPDES. The net effect of the facilities will improve water quality in the Potomac River and Chesapeake Bay.

The Hybrid Energy Park facilities will include a water-cooled system utilizing treated effluent from the Leesburg wastewater treatment plant which is currently piped into the Potomac River. Based upon the hours per day of operation, the Hybrid Energy Park facilities may utilize up to approximately five million gallons per day (net) of waste water effluent for cooling water and process water. This process could eliminate up to two billion gallons of effluent per year that is currently being discharged directly into the Upper Potomac River Basin that feeds into the Chesapeake Bay from the Leesburg wastewater treatment plant. This process will be the first one of its type in the Upper Potomac River Basin and will be a prime example of being able to show local governments ability to help clean up the Chesapeake Bay. The Applicant is having discussions with the Town of Leesburg to use the waste water effluent from the Leesburg wastewater treatment plant. The Hybrid Energy Park plans to treat, re-circulate, and reuse all the cooling water, thus nearing zero discharge. Only in a maintenance situation will any water used in the process be returned to the Leesburg wastewater treatment plant. Even though the water would be clean enough to be discharged into the Potomac River, it will not be released on site. GEP/S is discussing with Loudoun Water the use of reservoir water as a back up or secondary source of cooling water. An air cooled system is another alternative that could be utilized.

(6) **The effect of uses allowed by the proposed rezoning on the structural capacity of the soils.**
The proposed uses will not affect the structural capacity of the soils. Hydric soils

are included in the U.S Army Corps of Engineers Jurisdictional Determination #05-R2064.

(7) The impact that the uses that would be permitted if the property were rezoned will have upon the volume of vehicular and pedestrian traffic and traffic safety in the vicinity and whether the proposed rezoning uses sufficient measures to mitigate the impact of through construction traffic on existing neighborhoods and school areas.

The proposed use will have minimal impacts on the volume of vehicular traffic. There will be approximately 25-full time employees at the Hybrid Energy Park. These employees will generate 24 AM peak hour trips, 26 PM peak hour trips and 89 Average Daily Trips. Appropriate and sufficient measures to mitigate the impact of the construction traffic on the existing residential uses will be determined during the processing of the site plan application.

(8) Whether a reasonably viable economic use of the subject property exists under the current zoning.

The Subject Property is zoned TR-10 which permits predominantly residential uses which are not economically viable, compatible or desired uses due to the proximity of the Luck Stone properties and quarry uses, the noise contours of the Leesburg Airport, the high voltage transmission lines and the natural gas transmission lines. Residential uses will have greater impacts on the roads, County services and public schools.

(9) The effect of the proposed rezoning on the environment or natural features, wildlife habitat, vegetation, water quality and air quality.

The enclosed report "Air Quality Study of Green Energy Partners/Stonewall Solar and Natural Gas-Fired Power Plant at Leesburg, VA" prepared by MACTEC and dated July 1, 2009, states that "Once the plant is built and is operating under maximum emissions scenario, there will be negligible effect on the air quality at the plant property line, in any of the communities surrounding the plant, the Town of Leesburg, or any other receptors downwind from the source."

The proposed Hybrid Energy Park facilities may utilize up to approximately five million gallons per day (net) of waste water effluent for cooling water and process water in the generation of electricity. Depending on the hours per year of operation, this unique process could eliminate up to two billion gallons of effluent per year that is currently being discharged directly into the Potomac River that feeds into the Chesapeake Bay from the Leesburg wastewater treatment plant. Steam produced in the Hybrid Energy Park could be used to heat and cool the data centers and buildings within a service area. The Hybrid Energy Park facilities may approach zero discharge and process water will not be discharged into the stormwater management pond or Sycolin Creek. The entire site drains

away from the Goose Creek Reservoir.

The existing pond on site will be improved for stormwater management and water quality. Additionally, surface and stormwater will be regulated under a NPDES permit. The net effect of the facilities will improve water quality in the Potomac River and Chesapeake Bay.

Proposed with the Hybrid Energy Park are a River Stream Corridor Overlay District (RSCOD) and the stream valley buffer along Sycolin Creek and floodplain area within the Subject Property. The wetlands areas will not be disturbed, with the exception of improvements to Gant Lane, the site access, and underground utility lines required for the development of the Hybrid Energy Park. The Hybrid Energy Park is a unique development opportunity that is appropriate at this location due to the existence of the natural gas lines, high voltage power lines, water resources, quarry uses, the airport noise impacts, in addition to the proposed rezoning applications by Luck Stone and Loudoun Water. The topography of the area including forested ridges and valleys makes the Hybrid Energy Park less visible from the surrounding area.

Trees and vegetation will be preserved in the RSCOD, stream valley buffer and floodplain areas. In addition to these areas tree save areas have been designated on the plat.

(10) Whether the proposed rezoning encourages economic development activities in areas designated by the Comprehensive Plan and provides desirable employment and enlarges the tax base.

The Hybrid Energy Park will provide a clean, reliable and renewable source of electrical power that is critical and necessary for high tech and data center reliability and will help attract data center uses further diversifying Loudoun County's economic base.

Preliminary estimates of the total cost of the facility are $829,000,000 and will provide an economic engine for Loudoun County, in construction, jobs, tax revenues and a reliable source of Green energy. After the Hybrid Energy facility is in operation, it is estimated that tax revenues for Loudoun County will be up to $12,000,000 by 2015, and stabilizing by 2019, at over $8,000,000 per year. In addition to these tax revenues, Loudoun County charges an electricity utility tax for residential and commercial uses and that annual tax is estimated to be $1,200,000 per year.

(11) Whether the proposed rezoning considers the needs of agriculture, industry, and businesses in future growth.

The proposed MR-HI zoning district is appropriate for the Subject Property which is immediately adjacent to the Luck Stone property proposed to be rezoned

to MR-HI and used for quarrying. Additionally, the Subject Property is within the Quarry Overlay District and within the Airport Impact Overlay District. The diabase formation transitions to metamorphosed siltstone and sandstone at the eastern end of the transmission line easement.

The Hybrid Energy Park will provide a clean, reliable and renewable source of electrical power that is critical and necessary for high tech and data center reliability and will help attract data center uses further diversifying Loudoun County's economic base.

(12) Whether the proposed rezoning considers the current and future requirements of the community as to land for various purposes as determined by population and economic studies.

The proposed rezoning is consistent with the current and future requirements for generation of electricity. The Subject Property is uniquely situated with two 230 kV and one 500 kV Dominion Virginia Power high voltage transmission circuits on two separate 130 foot tall (approximately) aerial structures located within a 250 foot wide easement. Two interstate natural gas transmission lines owned by Columbia Gas and Dominion and located within a 30 foot wide easement transverse the Subject Property in a north/south direction parallel to the electrical transmission lines. These interstate natural gas lines are unique in that these lines originate in two separate areas of the United States, which is particularly advantageous in natural disasters such as hurricanes when one of the lines may be disabled. One of the lines originates in the Ohio Valley and the other from the Gulf Coast. This is the primary reason that other fuels will not be utilized as a back up source.

Electricity will be generated by the cleanest and most efficient state of the art technology, and will supply northern Virginia with power and address the shortage and congestion in the Northern Virginia region. The Hybrid Energy Park may reduce the need for additional overhead power transmission lines in Loudoun County that are importing power from outside of Virginia.

(13) Whether the proposed rezoning encourages the conservation of properties and their values and the encouragement of the most appropriate use of land throughout the County.

With the location of the high voltage transmission lines and the natural gas lines, the most appropriate use of land for the Subject Property is the Hybrid Energy Park.

(14) Whether the proposed rezoning considers trends of growth or changes, employment, and economic factors, the need for housing, probable future economic and population growth of the county and the capacity of existing and/or planned public facilities and infrastructure.

The land uses have changed in the area with the Luck Stone purchase of additional property adjacent to the existing quarry and Loudoun Water's proposed water treatment facility. The proposed Hybrid Energy Park is complimentary to the quarry and water treatment facility uses.

Electricity is an important part of the public infrastructure and is an integral part of life and electric system reliability is indispensable to support residential, commercial, industrial and governmental functions. Lack of reliable electricity is not just an inconvenience, but it creates an economic loss. Loudoun County has become one of the prime locations for internet related companies. These internet related companies include numerous data centers that create high value tax revenues with few employees. With Loudoun County's foresight the issue of electrical self sufficiency and security in the future would allow for the continuation of the expansion of these high value tax paying companies to locate within Loudoun County.

The Hybrid Energy Park will diversify the economic base in Loudoun County and it will provide Loudoun County with tax revenues and generate electricity for the region. Redundant and reliable source of electrical power is critical and necessary for high tech and data center reliability. Northern Virginia and Loudoun County are leaders in the high technology industry and are facing escalating reliability problems with electrical power generation and transmission which has resulted in threats of rolling blackouts, appeals for voluntary curtailment by consumers, and proposals to construct numerous transmission lines throughout Loudoun County. Resolving electricity reliability problems in a crisis atmosphere undermines customer confidence and is almost always unnecessarily expensive with cost frequently driven by areas other than the appropriate fuel and technology

(15) The effect of the proposed rezoning to provide moderate housing by enhancing opportunities for all qualified residents of Loudoun County.

Housing is not appropriate on the Subject Property due to the proximity of the Luck Stone quarries, Loudoun Water's proposed water treatment plant, Leesburg Airport noise, overhead transmission lines and towers and the natural gas transmission lines.

(16) The effect of the rezoning on natural, scenic, archaeological, or historic features of significant importance.

The rezoning will not have an effect on natural, scenic, archeological, or historic features of significant importance.

The previously submitted "Phase I Archeological Investigations of the Circa 652 Creekside Areas 4 and 5 Property, Loudoun County, Virginia" report by Thunderbird Archeology dated October 2005, identified the following on the

Subject Property: sites #44lD1326 and #44LD1328 and structure 053-5278 (barn). Site #44LD1326 is predominantly located within the overhead powerline easement area on the south eastern portion of the Subject Property and is not considered to be potentially eligible for inclusion on the National Register of Historic Places, and no additional archeological work is recommended for this site. Site #44LD1328 and Structure 053-5278 are generally located adjacent to the existing smaller pond near Gant Lane in the northern portion of the Subject Property, and are not considered potentially eligible for inclusion on the National Register of Historic Places, and no additional archeological work is recommended.

Section 6-1310 Issues of Consideration of the Revised 1993 Loudoun County Zoning Ordinance states: "In considering a special exception application, the following factors shall be given reasonable consideration."

(A) Whether the proposed special exception is consistent with the Comprehensive Plan.

The proposed Hybrid Energy Park is consistent with the Comprehensive Plan. The Subject Property is located within the Transition Policy Area and the Lower Sycolin Creek Subarea as specified in the Loudoun County's Revised General Plan (RGP). The Transition Policy Area serves as a visual and spatial transition between the Suburban and Rural Policy Areas and envisioned that it will provide unique development opportunities (emphasis added). The non-residential component of the Transition Policy Area will be comprised of compatible uses that represent an appropriate transition from suburban to rural land uses. The Luck Stone quarry which borders the Subject Property to the east will be protected from residential development by the Hybrid Energy Park.

(B) Whether the proposed special exception will adequately provide for safety from fire hazards and have effective measures of fire control.

The proposed Hybrid Energy Park will adequately provide for safety from fire hazards. Contact information and procedures for fire, rescue and other emergency response teams will be included in the Hybrid Energy Park operating procedures which will be developed prior to commencement of operations. The procedures will be reviewed with appropriate Loudoun County Fire, Rescue and Emergency Management personnel.

(C) Whether the level and impact of any noise emanating from the site, including that generated by the proposed use, negatively impacts the uses in the immediate area.

Noise emanating from the Hybrid Energy Park will meet the requirements of the Zoning Ordinance and will not negatively impact the uses in the immediate area. If necessary, noise attenuation measures will be incorporated to insure compliance with the Zoning Ordinance requirements.

(D) Whether the glare or light that may be generated by the proposed use negatively impacts uses in the immediate area.

The Hybrid Energy Park facilities will require external lighting to allow for safe operations, including elevated catwalks, Heat Recovery Steam Generators and turbine facilities. Exterior lighting will be directed downward and inward to the extent feasible in order to prevent any glare on adjacent properties. In addition, the facilities will be designed to enable outdoor lighting for distinct areas of the facilities to be switched off while not in use or not required for safety considerations.

(E) Whether the proposed use is compatible with other existing or proposed uses in the neighborhood, and adjacent parcels.
The proposed Hybrid Energy Park industrial use is compatible with the other industrial uses such as the Luck Stone quarry and the proposed Loudoun Water water treatment plant on the property in the immediate vicinity to the east.

(F) Whether sufficient existing or proposed landscaping, screening and buffering on the site and in the neighborhood to adequately screen surrounding uses.
The topography of the area including forested ridges and valleys makes the Hybrid Energy Park less visible from the surrounding area. The RSCOD and Stream Valley Buffer areas combined with a tree preservation area, the vegetated buffer and fence will provide screening and buffering from the adjacent areas.

(G) Whether the proposed special exception will result in the preservation of any topographic or physical, natural, scenic, archaeological or historic feature of significant importance.
The proposed Hybrid Energy Park will not impact topographic, physical, archeological or historic features of significant importance.

(H) Whether the proposed special exception will damage existing animal habitat, vegetation, water quality (including groundwater) or air quality.
The enclosed report "Air Quality Study of Green Energy Partners/Stonewall Solar and Natural Gas-Fired Power Plant at Leesburg, VA" prepared by MACTEC and dated July 1, 2009, states that "Once the plant is built and is operating under maximum emissions scenario, there will be negligible effect on the air quality at the plant property line, in any of the communities surrounding the plant, the Town of Leesburg, or any other receptors downwind from the source." Water quality will be improved by the use of wastewater effluent from the Leesburg Wastewater Treatment facility or the future Loudoun Water reservoirs in the Hybrid Energy plant for cooling and process water.

The proposed Hybrid Energy Park facilities may utilize up to approximately five million gallons per day (net) of waste water effluent for cooling water and process water in the generation of electricity. Depending on the hours per year of operation, this unique process could eliminate up to two billion gallons of effluent per year that is currently being discharged directly into the Potomac River that feeds into the Chesapeake Bay from the Leesburg wastewater treatment plant. Steam produced in the Hybrid Energy Park could be used to heat and cool the data centers and buildings within a service area. The Hybrid Energy Park facilities may approach zero discharge and process water will not be discharged into the stormwater management pond or Sycolin Creek. The entire site drains away from the Goose Creek Reservoir.

The existing pond on site will be improved for stormwater management and water

quality. Additionally, surface and stormwater will be regulated under a VPDES permit that is issued by DEQ. The net effect of the facilities will improve water quality in the Potomac River and Chesapeake Bay.

(I) Whether the proposed special exception at the specified location will contribute to or promote the welfare or convenience of the public.

The proposed Hybrid Energy Park will provide reliable and redundant electricity to support the power grid to prevent future brown outs which promotes the welfare and convenience of the public.

The specified location for the Hybrid Energy Park is well suited for the Hybrid Energy Park. In locating an electrical power producing facility three components must be available, i) electrical transmission facilities, ii) fuel and iii) water. The Hybrid Energy facility is proposed to be located on property that contains two 230kV and one 500kV electrical transmission lines owned by Virginia Dominion Power and operated through PJM. Two main high pressure natural gas lines also traverse the property; one extends from the Gulf of Mexico and the other from the Ohio Valley. These natural gas lines connect to the main north-south Transco natural gas line and also connect to the Coles Point, Virginia LNG port. Since the source of these natural gas lines are from different geographical areas, there is a backup source of natural gas In the event that one of the gas lines is disabled. Therefore, the proposed Hybrid Energy Park is sited in a unique location that provides the needed components.

(J) Whether the traffic expected to be generated by the proposed use will be adequately and safely served by roads, pedestrian connections and other transportation services.

The proposed Hybrid Energy Park will employ approximately 25 people divided among a three shift work day. The vehicular trips generated by these employees will be adequately and safely accommodated by the surrounding road networks.

(K) Whether, in the case of existing structures proposed to be converted to uses requiring a special exception, the structures meet all code requirements of Loudoun County.

Existing structures are not proposed to be converted to uses requiring a special exception or primary uses.

(L) Whether the proposed special exception will be served adequately by essential public facilities and services.

The proposed Hybrid Energy Park special exception use will be served adequately by public facilities and services.

(M) The effect of the proposed special exception on groundwater supply.

Stormwater management and best management practices will be incorporated

into the site design which will assist in maintaining the quality of the ground water supply. The Applicant will comply with requirements of the Facilities Standards Manual Section 5.320.E that requires the implementation of a stormwater pollutant prevention plan. Additionally, surface and stormwater will be regulated under a VPDES permit issued by DEQ. The net effect of the facilities will improve water quality in the Potomac River and Chesapeake Bay.

The Hybrid Energy Park facilities will include a water-cooled system utilizing treated effluent from the Leesburg wastewater treatment plant which is currently piped into the Potomac River. Based upon the hours per day of operation, the Hybrid Energy Park facilities may utilize up to approximately five million gallons per day (net) of waste water effluent for cooling water and process water. This process could eliminate up to two billion gallons of effluent per year that is currently being discharged directly into the Upper Potomac River Basin that feeds into the Chesapeake Bay from the Leesburg wastewater treatment plant. This process will be the first one of its type in the Upper Potomac River Basin and will be a prime example of being able to show local governments ability to help clean up the Chesapeake Bay. The Applicant is having discussions with the Town of Leesburg to use the waste water effluent from the Leesburg wastewater treatment plant. The Hybrid Energy Park plans to treat, re-circulate, and reuse all the cooling water, thus nearing zero discharge. Only in a maintenance situation will any water used in the process be returned to the Leesburg wastewater treatment plant. Even though the water would be clean enough to be discharged into the Potomac River, it will not be released on site. GEP/S is discussing with Loudoun Water the use of reservoir water as a back up or secondary source of cooling water. An air cooled system is another alternative that may be utilized.

(N) Whether the proposed use will affect the structural capacity of the soils.
The proposed use will not affect the structural capacity of the soils. *Hydric soils are included in the U.S Army Corps of Engineers Jurisdictional Determination #05-R2064.*

(O) Whether the proposed use will negatively impact orderly and safe road development and transportation.
Road improvements will be made to safely accommodate the traffic that will be generated by the Hybrid Energy Park, which will employ approximately 25 people.

(P) Whether the proposed special exception use will provide desirable employment and enlarge the tax base by encouraging economic development activities consistent with the Comprehensive Plan.
The Hybrid Energy Park will diversify the economic base and will provide Loudoun County with tax revenues and generate electricity for the region.

Redundant and reliable source of electrical power is critical and necessary for high tech and data center reliability.

Preliminary estimates of the total cost of the facility are $829,000,000 and will provide an economic engine for Loudoun County, in construction, jobs, tax revenues and a reliable source of Green energy. After the Hybrid Energy facility is in operation, it is estimated that tax revenues for Loudoun County will be up to $12,000,000 by 2015, and stabilizing by 2019, at over $8,000,000 per year. In addition to these tax revenues, Loudoun County charges an electricity utility tax for residential and commercial uses and that annual tax is estimated to be $1,200,000 per year.

(Q) Whether the proposed special exception considers the needs of agriculture, industry, and businesses in future growth.

The proposed MR-HI zoning district is appropriate for the Subject Property which is immediately adjacent to the Luck Stone property proposed to be rezoned to MR-HI and used for quarrying. Additionally, the Subject Property is within the Quarry Overlay District and within the Airport Impact Overlay District. The diabase formation transitions to metamorphosed siltstone and sandstone at the eastern end of the transmission line easement.

The Hybrid Energy Park will provide a clean, reliable and renewable source of electrical power that is critical and necessary for high tech and data center reliability and will help attract data center uses further diversifying Loudoun County's economic base.

(R) Whether adequate on and off-site infrastructure is available.

Adequate on and off-site infrastructure is available or will be improved to serve the Hybrid Energy Park. The on-site infrastructure of the two natural gas lines, overhead high voltage electrical transmission lines and proximity to wastewater effluent and potable water provide an ideal location for the Hybrid Energy Park.

(S) Any anticipated odors which may be generated by the uses on site, and which may negatively impact adjacent uses.

No odors are anticipated with the Hybrid Energy Park uses on the Subject Property that will negatively impact the adjacent uses.

(T) Whether the proposed special exception uses sufficient measures to mitigate the impact of construction traffic on existing neighborhoods and school areas.

Appropriate and sufficient measures to mitigate the impact of the construction traffic on the existing residential uses will be determined during the processing of the site plan application.