

# Cricket Valley Energy



*Request for Information*

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## EXECUTIVE SUMMARY

Cricket Valley Energy Center, LLC (“CVE”) is a proposed 1,000 megawatt (MW), combined-cycle electric generating plant in Dover, New York (the “Project” or “Facility”). The CVE Project promotes a highly efficient, environmentally-responsible process of converting clean-burning American natural gas into electricity. CVE will be among the most efficient energy producers in New York, with the ability to generate electricity for nearly one million homes, while generating long-term state, regional and local economic and environmental benefits.

CVE is an affiliate of Advanced Power AG (“AP”), an energy development company whose management has considerable experience with power generation facilities and has developed more than 9,400 MW of power generation projects in the U.S. and worldwide.

AP is joined by GE Energy and Marubeni Corporation in the development of the Project. The collective experience and expertise of AP and its world-class industrial partners ensures that the Project will be developed, built and operated to the highest possible standards in the power industry. Utilizing GE’s state-of-the-art 7FA.05 generation technology, the CVE Project will provide flexible, reliable, and efficient generation to meet the load growth of a rebounding economy, offset the retirement of aging generation due to new environmental regulations, and address the gap created if the Indian Point nuclear facility were to be retired.

The CVE Project will be located on an abandoned, industrial site which lies immediately adjacent to high-voltage power lines and an interstate gas pipeline. Low-impact design, including use of a previously disturbed industrial site and the preservation of surrounding natural buffers and wetlands, will maintain the environmental quality of the site and protect the rural character of Dover and the surrounding communities.

The Project is located in Southeastern New York (NYISO Zone G), south of the Leeds-Pleasant Valley transmission corridor, an area that has been determined by the New York Independent System Operator (NYISO) to have significant electric transmission constraints. Due to its favorable location on the grid, and as one of the most efficient, reliable and least emitting energy producers, CVE will be dispatched ahead of higher emitting generators, causing those units to operate less frequently, thereby yielding net air quality benefits and production cost savings across New York State.

A comprehensive environmental review of the CVE Project has been provided in the CVE Draft Environmental Impact Statement (DEIS). The DEIS demonstrates that the CVE Facility will have no significant adverse impact on the environment, and, in fact, it will improve the environment by reducing air pollutant emissions by displacing older, higher emitting generators and locally by cleaning up a very disturbed and dilapidated industrial site.

Project development and construction will require an estimated investment by CVE of approximately \$1 billion, which will provide significant benefits to the local, regional, and state economies, including up to 750 construction jobs. Overall economic benefits to Dutchess County alone are estimated at \$224

million during construction and \$22 million annually during operation.

Obtaining a long-term Power Purchase Agreement (PPA), or equivalent contractual off-take agreement, from an “investment-grade” counterparty will be an essential element for the CVE Project to be financed and constructed. A PPA will ensure a stable cash flow to the project, which will reduce risk and provide the most attractive economic benefits. CVE believes that the State of New York can facilitate such an agreement, and in turn accomplish the goals of the Energy Highways Initiative, through the creation of a state-sponsored Request for Proposals (RFP).

## RESPONDENT INFORMATION

Cricket Valley Energy Center, LLC (CVE) proposes to construct and operate a highly efficient, combined cycle, natural gas powered 1,000 megawatt (MW) electric generating facility (“Project” or “Facility”) on an industrially-zoned property in Dover, Dutchess County, New York.

The CVE Project will be constructed, owned and operated by CVE, a New York limited liability company formed in 2009. CVE is an affiliate of Advanced Power AG (“AP”), an energy development company headquartered in Zug, Switzerland, with offices in London. AP’s North American operations are managed by its Advanced Power Services (NA) Inc. subsidiary, located in Boston, Massachusetts.

AP’s management has considerable experience with power generation facilities and has developed more than 9,400 MW of power generation projects in the U.S. and worldwide.

AP has entered into a Joint Development Agreement with a subsidiary of General Electric Company (“GE”) for the development of the CVE Project. GE has major operations in New York’s Capital Region and is one of the world’s leading suppliers of power generation and energy delivery technologies. GE not only has installations of its turbine technology at thousands of locations throughout the U.S., but is one of the world’s largest providers of power plant operations and maintenance service, managing more than 22,000 MW of power generation assets.

GE will supply its latest 7FA.05 gas turbine technology, highly efficient steam turbines, and generators to the CVE project, of which the steam turbines and generators are expected to be manufactured in Schenectady, NY. GE will have a continuing service agreement with CVE after the Facility is built, providing maintenance services for the Facility’s equipment.

Marubeni Corporation (Marubeni) owns a minority interest in the CVE Project. Marubeni, with offices in New York, NY, has a similar strong power generation background, with ownership in more than 29,000 MW of power generation facilities.

The collective experience and expertise of AP and its international industrial partners ensures that the CVE Project will be developed, built and operated to the highest possible standards in the power industry utilizing clean, efficient, state-of-the-art generation technology.

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## **PROJECT DESCRIPTION**

The CVE Project will be a state-of-the-art electric generating facility that will provide needed electricity to the New York State bulk power grid and will provide long-term state, regional and local economic and environmental benefits. The Project expects to begin construction in 2013 and is anticipated to be operational in 2016.

The CVE Facility will generate approximately 1,000 MW of electricity, fueled only by natural gas, and will use highly efficient, combined-cycle generation technology. The Project will be comprised of three combined-cycle units, each consisting of a combustion turbine generator, a heat recovery steam generator with supplemental duct firing, and a steam turbine generator.

Water use will be minimized by the use of air cooled condensers. Process water supply will be provided from new, on-site, deep bedrock wells. After discussion with local environmental groups regarding water consumption, the CVE team has incorporated a Zero Liquid Discharge system, which will recycle and re-use water, reducing the need for process water and ensuring that no process wastewater will be discharged. The Facility will employ best management practices for storm water management, which will include a system that reflects existing drainage patterns and incorporates bio-retention facilities and roof top rain capture to maintain peak rates of discharge and minimize the potential for erosion and sedimentation.

The CVE Project will be equipped with state-of-the-art emissions control technology, including dry low-NO<sub>x</sub> burners and selective catalytic reduction technology to control emissions of nitrogen oxides (NO<sub>x</sub>), and an oxidation catalyst to control emissions of carbon monoxide and volatile organic compounds. A continuous emissions monitoring system will be utilized to ensure and document facility compliance with applicable emissions standards. The Project has incorporated Lowest Achievable Emission Rates (LAER) /Best Available Control Technology (BACT) and will represent the lowest emitting power plant of its kind ever constructed.

## **PROJECT LOCATION**

The CVE location was carefully selected due to favorable existing electric and natural gas infrastructure, current industrial zoning, and topography and tree cover that provide a substantial natural buffer to the surrounding community. The property consists of 193 acres and is located at 2241 Route 22, Dover, Dutchess County, New York. A site location map is attached as Exhibit A and site layout drawing is attached as Exhibit B.

The Project has been designed to be complementary to the property's site conditions, environmental resources and surrounding land uses. The extent of change to the site and surroundings has been minimized and is limited to the portion of the property already altered due to past industrial uses. An approximately 70-acre portion of the site has a long history of industrial use dating to the 1940s and consists of numerous collapsed buildings and structures, some of which were damaged or destroyed by fire in 1996 (see Exhibit C). The Project has been designed to maximize use of previously disturbed areas

and preserve existing buffers by placing plant facilities on the portion of the property where the industrial buildings are located. This part of the property contains a substantial amount of solid waste, as well as destroyed or damaged buildings, which requires substantial clean-up and mitigation. CVE will work closely with the Town of Dover, Dutchess County and the New York State Department of Environmental Conservation (NYSDEC) to restore this property and to place it back into productive and tax paying use.

Approximately 79 acres of the 193-acre site lie west of a Metro-North railroad track, which transects the property, and are currently undeveloped. This portion of the property is not proposed for any Project development activity, and CVE is in discussions with local conservation groups to place this land into a permanent conservation trust.

CVE holds a long-term option to purchase the property which is within the Town of Dover's Industrial/Manufacturing District (M) which permits industrial and related uses.

### **PROJECT ELECTRIC AND NATURAL GAS INTERCONNECTIONS**

Immediately adjacent to the site is an existing Consolidated Edison Company of New York (ConEd) electric transmission right-of-way, which also abuts an Iroquois Gas Transmission (Iroquois) natural gas pipeline right-of-way (see Exhibit A). The electricity generated from the Facility will be transmitted via a 700-foot, on-site, overhead interconnect to the existing ConEd 345 kilovolt (kV) electric transmission line located adjacent to the property to the north. In order to minimize the Project footprint and avoid wetland intrusion, a more expensive state-of-the-art gas insulated switchgear (GIS) substation has been selected. The Project's interconnection point will be located within the Project site, which is approximately 14.5 miles east of the Pleasant Valley substation and 3 miles west of the NY-Connecticut border (See Exhibit D). Electrically, the Project is located south of the often-congested Leeds-Pleasant Valley transmission corridor, so the Project will provide additional flexibility for the NYISO to maintain reliability and proper voltage in the lower Hudson Valley (NYISO Zone G).

The CVE Project has entered the NYISO Large Facility Interconnection Process, for interconnection to the local and regional electrical transmission grid (NYISO Queue #310). A Feasibility Study and System Reliability Impact Study, each performed by the NYISO, have been completed and concluded that an interconnection of 1,000 MW at this location can be supported without the need for substantial upgrades and improvements. The Project is part of NYISO Class Year 2011. The next major step in the process is a Facilities Study to determine the cost and allocation of the transmission system's facility upgrades for corresponding NYISO Class Year 2011 interconnections. An assessment of 'deliverability' of the Project's 1,002 MW of capacity resource (i.e., ICAP) will also be part of the Class Year 2011 study, which is expected to be completed in 2012.

Natural gas fuel for the Facility will be transported via a new 500-foot, 12-inch pipeline lateral from the adjacent Iroquois pipeline. Natural gas will be provided to the Project through a combination of firm and interruptible natural gas transportation contracts to meet Facility requirements. It is intended that the arrangement will minimize gas supply costs and provide high levels of reliability and operational

flexibility.

## **PROJECT TECHNOLOGY**

The Project will utilize three combustion gas turbine generators, firing solely natural gas, and three steam turbine generators, to produce electricity. GE will supply the Project with GE's latest 7FA.05 gas turbine technology, highly efficient steam turbines, and generators, of which the steam turbines and generators are expected to be manufactured at GE's facility in Schenectady, NY. In addition to GE's world class quality in manufacturing, CVE will obtain a minimum warranty of one year and utilize GE for field services to maintain optimal performance throughout operation. Exhibit E provides further information on the selected technology.

The CVE Project's configuration (three independent 1x1 units), along with GE's power island design, will create strong operational flexibility for faster ramp rates, reduced start times, and load following response. The Facility is expected to have an availability of 93 percent or greater (annual equivalent), while achieving summer peak availability of 98 percent or greater. These features allow the Project to serve as a dependable baseload generator to help maintain the reliable operation of the bulk power grid.

The F-class gas turbines come from the largest and most experienced fleet in the industry with a useful life expectancy of 30-50 years depending upon the degree of maintenance and equipment upgrades. CVE anticipates preparing a decommissioning plan prior to commencement of construction. The decommissioning plan will include a discussion of the potential useful life of the Facility, the salvage and recycling value, safety and the removal of potential hazardous conditions, environmental impacts, site aesthetics, and potential future use of the site.

## **PROJECT JUSTIFICATION AND NEED**

CVE will generate electricity in an efficient and environmentally conscious manner to meet increasing long-term regional energy demand and to reduce dependence on older, less efficient, and higher emitting electric generators that currently serve the New York region. The CVE Project will use the most advanced, state-of-the-art power generation technology available (GE 7FA.05 gas turbine technology), making it one of New York's most efficient energy producers. The CVE Project would be considered a baseload generator, meaning it would be generating electricity at least 75 percent of the time on an annual basis. This is due to the Project's thermal efficiency and resulting lower cost to operate relative to other available generating units, which means that CVE will be dispatched ahead of less efficient generators, whose generation would be displaced, resulting in lower electricity costs and reduced air emissions.

- The Project is projected to produce statewide and regional production cost savings estimated at \$241 million during the first five years of operation<sup>1</sup>.
- Operation of the Project will result in substantial reductions in air emissions, because the Project will be dispatched ahead of less efficient, higher emitting generators. Independent studies



predict that operation of the Facility will decrease NO<sub>x</sub> emissions in New York State by an average of 2.05% per year and SO<sub>2</sub> emissions by an average of 1.53% per year<sup>2</sup>.

- The Project will remediate and reuse an inactive industrial site, placing it back into productive use in a manner that will be compatible with local zoning and community planning goals.

## **CVE'S COMPATIBILITY WITH THE NEW YORK ENERGY HIGHWAY INITIATIVE**

The New York Energy Highway Initiative is designed to provide reliable, economical power to New York's homes and businesses for the next half century while creating jobs, energizing private-sector investment and protecting the State's environment and the health of its citizens. CVE has developed a project that is compatible with all of the objectives of the Energy Highways Task Force:

### *Reducing Transmission Constraints and Expanding Generation Diversity Downstate*

The CVE Project will be located in southeastern New York (NYISO Zone G), south of the Leeds-Pleasant Valley transmission corridor, an area that has been determined by the NYISO's Congestion Assessment and Relief Integration Study (CARIS) to have significant electric transmission constraints. In the CARIS study, the addition of 1,000MW of generation at the Pleasant Valley substation was specifically identified as a solution to reduce congestion, with estimated ten-year production cost savings of \$330 million (Present Value). NYISO specifically notes that: "Efficient generator solutions reduce imports from neighbors and enable a more efficient and lower cost NYCA generation market. Savings accrue in lower production costs as well as reduced congestion."<sup>3</sup>

The CVE Project will be located just 14 miles east of the Pleasant Valley substation and, electrically, is comparable to the generic generator solution studied by NYISO. Thus, it is anticipated that the CVE Project would generate the \$330 million in production cost savings identified in CARIS for the benefit of New York State ratepayers.

### *Ensuring Reliability of the N.Y. Electricity Grid*

The New York Public Service Commission (NYPSC) has recognized the need for the addition of new, more efficient generating resources such as the CVE project, even where there is not an imminent threat to system reliability, based on a number of factors. These factors include system reliability benefits, economic benefits for customers and New York State, and achievement of public policy goals including environmental benefits.

The NYPSC has determined that the addition of new generation facilities provides an additional source of supply in the event that other expected generation and transmission projects are not available to the bulk electric system. This could result from projects not being completed as projected, or retirement of existing generation facilities.<sup>4</sup>

The CVE Project serves to address the reliability concerns raised by the NYPSC. Utilizing GE's state-of-the-art 7FA.05 generation technology, the CVE Project will provide reliable, efficient generation to meet the load growth of a rebounding economy, offset the retirement of aging generation due to new environmental regulations, and address the gap created if the Indian Point nuclear facility were to be

retired.

In addition to addressing reliability concerns, CVE is also positioned to address the NYPSC September 2011 Order addressing blackstart capability. The PSC states: "Those generation facilities that can be restarted without drawing power from the grid may be suppliers of Blackstart Service, which is one of the essential tools through which the electric transmission and distribution system is restored to operation in a timely and reliable manner after a blackout occurs. As such, adequate Blackstart Service from generation facilities is essential to the reliable operation of New York's electric system."<sup>5</sup>

The CVE Project includes four blackstart generators that will be used to re-start the facility's combustion turbines in the event of a total power loss on the local or regional transmission grid.

#### *Supporting a Renewable Energy Economy*

CVE supports energy efficiency and renewable energy and recognizes that these are an important part of the region's energy portfolio. As New York integrates intermittent sources of renewable energy (such as wind or solar) into the grid, flexible, reliable, combined-cycle technologies will play an important role in maintaining reliability. CVE's ramping capabilities can support the intermittent generation of solar and wind powered facilities by providing the necessary conventional backup generation for these renewable generators. Thus CVE can enable increased use of renewable resources by providing the needed insurance to maintain grid reliability.

In addition, CVE will utilize rooftop rainwater capture and is considering all reasonable opportunities to incorporate on-site renewable energy, such as solar photovoltaic panels on the Project roofs.

#### *Increasing Efficiency of Power Generation*

CVE is using the latest and best combined cycle technologies to ensure that its Facility produces the lowest emissions rates of any natural gas powered plant in New York State. As one of the most efficient, reliable and least emitting energy producers, CVE will be dispatched ahead of less efficient higher emitting generators, causing those units to operate less frequently, thereby yielding net air quality benefits and production cost savings across the region. CVE studies submitted to the NYPSC demonstrate that the CVE Project will provide over \$240 million in production cost savings over a 5 year period, reducing energy costs to New York consumers<sup>6</sup>.

#### *Compatibility with NYISO Requirements*

The CVE Facility will sell its energy, capacity and ancillary services into the wholesale competitive markets administered by NYISO. The NYISO is the operator responsible for overseeing the safe and reliable operation of the New York bulk electric transmission system.

NYISO annually issues a Power Trends Report, addressing New York's electricity supply, infrastructure and reliability needs. The 2012 Power Trends Report recognizes that the adoption of regulatory mandates by Federal and State governments designed to lower carbon dioxide (CO<sub>2</sub>) emissions, as well as further reduce emissions of nitrogen oxides (NO<sub>x</sub>) and sulfur dioxides (SO<sub>2</sub>), will likely force the early retirement of older, inefficient electric generating plants. Specifically, the 2012 Power Trends Report

states that the combined effect of current and proposed regulations is estimated to impact *more than half* the installed generating capacity in the state, which could result in unplanned plant retirements that would impact reliability.<sup>7</sup>

CVE's generation capabilities can serve as a replacement resource for plant closings – particularly retirement of coal burning facilities – caused by the imposition of tough new environmental regulations. Due to the Facility's superior low heat rate, it will be dispatched by NYISO ahead of older and less efficient generators, causing those units to operate less frequently, thereby yielding a net air quality benefit across the region.

Finally, the Power Trends Report notes that the possible retirement of Units 2 and 3 of the Indian Point nuclear power plant would have “serious reliability consequences, including the possibility of rolling customer blackouts” within the New York Control Area system.<sup>8</sup> NYISO states that, “due to New York's existing transmission limitations, new generation... would likely be the potential solutions in response to an Indian Point closure.<sup>9</sup>” To mitigate the impact of these retirements, approximately 1,000 MW of capacity would need to be installed in Southeastern New York for each retired unit. CVE is proposing a 1,000 MW generation facility in Zone G.

#### *Compatibility with the New York State Energy Plan*

CVE has designed its Facility to be consistent with the policy objectives outlined in the New York State Energy Plan, issued by the State Energy Planning Board. The State Energy Plan's policy objectives include: maintenance of reliability; reduction of greenhouse gas (GHG) emissions, stabilization of energy costs and improvement in economic competitiveness; reduction of environmental impacts; and improving energy independence<sup>10</sup>.

The CVE Project will generate electricity far more efficiently than the existing fleet of plants and do so using natural gas instead of higher emitting fossil fuels like oil or coal. Thus, since the Project has the ability to provide electricity more cost-effectively and efficiently and with a lower emissions profile, CVE can play an important role in achieving the State Energy Plan's goals of maintaining reliability and reducing energy costs and air emissions, with consequent improvement in economic competitiveness. In addition, since the Project will burn low cost, American natural gas, the Project will contribute to improving energy independence.

With all of these policy considerations in mind, it is clear that the CVE project achieves the goals of not only the New York State Energy Highway Initiative, but also the specific policy goals of the grid operator (NYISO), the New York Public Service Commission, and the New York State Energy Plan.

## **FINANCING**

### *Financing Plan*

The CVE Project benefits from the sponsorship of a group of highly experienced energy investors including GE Energy, Marubeni Corporation, and Advanced Power. Together these sponsors offer the expertise and track record required to achieve a successful commercial operation of the Project,

including expertise in development, construction, operation and finance.

The Project is expected to cost more than \$1 billion which will be privately funded prior to construction using a mixture of equity and debt. Equity will be provided by the sponsors and/or major institutional equity sources. Debt will be sourced from commercial investment banks and/or other institutional debt providers.

In order to attract equity and debt financing, CVE's financing plan will focus on securing long-term energy tolling or power purchase agreements (PPA) with investment grade counterparties (electric utilities, load serving entities (LSEs), and/or wholesale marketers). Long-term agreements will be structured to insulate the Project from market risk including, but not limited to, power, natural gas and imbalance prices, and to provide long-term, project-financeable revenue streams.

#### *Private-Public Partnership*

Obtaining a long-term PPA, or equivalent contractual off-take agreement, from an investment-grade counterparty will be an essential element for the CVE Project to be constructed. CVE believes that the State of New York can facilitate such an agreement, and in turn accomplish the goals of the Energy Highways Initiative, through the creation of a state-sponsored Request for Proposals (RFP).

The RFP would be viewed as a private-public partnership between the State of New York, its electricity consumers, and private business. Together these entities can bolster the state's aging transmission infrastructure, reduce reliance on aging generation capacity, create jobs, and strengthen a rebounding state economy with low cost power resources to ensure near-term and long-term growth. An RFP should invite "all-sources" to bid with an emphasis on cost and risk minimization, public benefits, and compatibility with resource and reliability needs.

#### *Project Sponsors*

##### **GE Energy**

GE Energy LLC is a subsidiary of the General Electric Company (GE). With major operations in New York's Capital Region, GE is one of the world's leading suppliers of power generation and energy delivery technologies. GE not only has installations of its turbine technology at thousands of locations throughout the U.S., but is one of the world's largest providers of power plant operations and maintenance service, managing more than 22,000 MW of power generation assets. GE is a publicly traded company with a market capitalization of approximately \$200 billion USD.

##### **Marubeni**

Marubeni Corporation, which was founded in 1858 and incorporated in 1949, manages business across a wide range of industrial sectors throughout the world. The company first established its power industry presence through the EPC business, with more than 93,000 MW supplied or constructed in various fuel and technology types. Marubeni expanded its business into the independent power producer (IPP) arena in the early 1990's, and now owns approximately 8,680 MW of net generating capacity (29,428

MW gross capacity). The company manages its North American electricity sector investments through its subsidiary Marubeni Power International, Inc., based in New York, NY. Marubeni Corporation is a publicly traded company which has a market capitalization of approximately \$11 billion USD.

### **Advanced Power**

Advanced Power AG (“AP”) is a Swiss-based, privately-owned company which develops power generation and related infrastructure projects throughout Europe and North America. AP’s North American operations are managed by its Advanced Power Services (NA) Inc. subsidiary, located in Boston, Massachusetts. The management of AP has a proven track record and has led the development of more than 9,400 MW of power generation projects and \$4.6 billion of limited recourse project financing worldwide.

#### *Sources of Revenue & Pricing*

CVE is capable of producing three separate, distinct and marketable energy products – energy, capacity, and ancillary services. These can be packaged together, or sold independently under bi-lateral agreements directly to counterparties, or through the NYISO.

CVE will purchase fuel for the Facility from the natural gas market and sell the energy products to the marketplace utilizing the NYISO ‘day-ahead’ market. Based upon recent analyses, which factor in CVE’s strategic location and superior efficiency, the CVE Project is expected to run base-load (approximately 8,000 operating hours/year) generating 7,875 gigawatt-hours (GWh) of electricity on an annual basis.

The Project intends to market ancillary services which include Black-start Service; Regulation and Frequency Response Service; and Energy Imbalance Service.

#### *Options to Reduce Pricing and Uncertainty*

In order to minimize the Project’s exposure to market risk and provide stable pricing, CVE intends to negotiate long-term off-take agreements for the entire output of the Facility. Ongoing discussions with potential long-term counterparties indicate that future revenue streams for installed capacity (ICAP) in New York are somewhat speculative and, therefore, there is a great deal of uncertainty over the future of this important revenue source. Obtaining a long-term PPA from an investment-grade counterparty (e.g., State or publicly-owned electric utilities or other investment grade counterparties) will be an essential element to reduce pricing and uncertainty for the Project, its equity investors, and debt providers.

### **PERMIT AND APPROVAL PROCESS**

A comprehensive environmental review of the CVE Project has been provided in the CVE Draft Environmental Impact Statement (DEIS), which was prepared and submitted to the NYSDEC in early 2011.<sup>11</sup> The DEIS demonstrates that the CVE Facility will have no significant adverse impact on the environment, and, in fact, it will improve the environment by reducing air pollutant emissions by displacing older, higher emitting generators and locally by cleaning up a dilapidated industrial site.

The NYSDEC has assumed Lead Agency status for the Project with the Town of Dover being an Involved Agency. On May 25, 2011, the NYSDEC issued a public notice determining that the DEIS was complete, that draft air and wetlands permits were available and inviting public comment. Public hearings on the DEIS were held in Dover on June 28 and July 9, 2011 and the written public comment period closed on August 5, 2011. Public comments have been compiled and the Project has been engaged in conducting additional studies and analyses for the past nine months. These additional analyses have been presented as part of a Final Environmental Impact Statement (FEIS), which includes a response to every public comment and is expected to be issued in June 2012.

Development and construction of the Project will require or involve a number of federal, state and local regulatory agency notifications, actions, permits and approvals. CVE is actively engaged in acquiring all permits needed for the construction and operation of the Facility and is successfully progressing through the federal, state, and local permitting processes.

Table 1-1 lists each CVE permit, review or approval and its current status.

*Table 1-1: List of Permits and Approvals*

Agency	Permit, Review or Approval	Status
<b>Federal</b>		
United States Army Corps of Engineers	Section 404 Permit	Joint Permit filed 1/22/10; amendment pending
United States Fish and Wildlife Service	Endangered Species Act Section 7 consultation	Correspondence received 7/20/09, 9/21/09, and 7/19/11
FAA	Notice of Proposed Construction or Alteration	Determination of No Hazard received 3/19/10 ; Request for Extension granted on 9/15/11
<b>State</b>		
NYS Department Of Environmental Conservation	DEIS FEIS	DEIS completed 05/25/2011 DEIS public comment period closed 8/5/2011 FEIS expected to be issued in June 2012
	Part 201 permit (air quality)	Application filed 3/26/10; draft permit noticed 5/25/11 and re-noticed on 12/14/11. Draft permit issued on 4/4/12.
	PSD permit	Application filed 3/26/10; draft permit noticed 5/25/11 and re-noticed on 12/14/11. Draft permit issued on 4/4/12.
	Title V operating permit (air quality)	Application to be filed within 12 months following the commencement of facility operation
	Title IV Acid Rain permit (air quality)	Submitted on 10/24/11 and Noticed on 12/14/11
	Freshwater Wetlands Permit	Joint application filed 1/22/10; draft permit noticed 5/25/11; amendment pending.
	Clean Water Act Section 401 Water Quality Certification	Joint application filed 1/22/10; draft permit noticed 5/25/11; amendment pending.
	SPDES General Permit for Stormwater Discharges from Construction Activities	NOI pending
	Natural Heritage and Endangered Species program consultation	Correspondence received on 6/10/09
	Oil and chemical storage authorization	Pending

Agency	Permit, Review or Approval	Status
	Notification for large asbestos removal, if applicable	Pending
	Water Withdrawal Permit pursuant to proposed regulations at 6 NYCRR Part 601, if applicable under final rule	Pending
Office of Parks, Recreation and Historic Preservation	National Historic Preservation Act Section 106 consultation	Correspondence received on 9/3/09 & 9/25/09 "No effect" determinations received on 7/6/11 and 2/29/12
New York State Department of Transportation	Highway work permit for non-utility work	Submitted on 11/11/2011
New York State Public Service Commission	Section 68 Certificate of Public Convenience and Necessity; Confirmation of Lightened Regulatory Status	Application filed 11/01/11
	Section 69 of the Public Service Law Approval of Financing	Pending
<b>Local</b>		
Town of Dover Town Board	Special Permit/Site Plan Review	Application filed 11/4/09; amendment pending
	Fire Prevention Permits	Pending
Town of Dover Planning Board	Erosion/Sediment Control	Pending
Town of Dover Zoning Board	Town Zoning Law Amendment (fence height, and noise)	Zoning amendment petition filed 06/22/11; amendment submitted on 1/25/12
Town of Dover Architectural Review Board	Design Review	Pending
Building Inspector	Building/Occupancy Permits	Pending
Dutchess County Health Department	Water Well Construction	Notifications provided for temporary wells on 7/22/09; final well notifications pending
	Septic System Approval	Pending
	Abandonment of Water Well, if applicable	Pending
Dutchess County Planning Board	Special Permit/Site Plan Review (advisory role)	Application filed 11/4/09

## COMMUNITY OUTREACH & LOCAL BENEFITS

CVE has conducted an extensive public outreach program designed to inform the local community of the proposed Project and address the community's concerns. In June 2009, CVE established a Project web site ([www.cricketvalley.com](http://www.cricketvalley.com)) to provide the public with Project information. The website is regularly updated with CVE permit filings, meeting announcements, presentations, and outreach materials. The website contains a comprehensive and easily accessible list of all major CVE filings<sup>12</sup>. In addition, the CVE development team maintains an email list, which is used to inform interested parties of upcoming meetings and events.

CVE has maintained an office at 5 Market Street in Dover Plains, NY since October 2009. The community outreach office has been used for community Open Houses in December 2009 and July 2011, and serves as a meeting place to listen and respond to public interest and concerns. CVE has also published a series of newsletters, which are mailed to every household in Dover. The newsletters, which were first

published in April 2010, recap recent Project news and inform residents of upcoming events and meeting. Exhibit F provides examples of past Project newsletters and mailings.

CVE has also established local Advisory Working Groups beginning in January 2010. The groups were created to allow residents, environmental groups and other interested parties to be involved in the development process and hear from CVE experts on the latest Project developments. The topics discussed included air and water impacts and traffic congestion that may result from the Project. In direct response to concerns expressed by the community, CVE has completed redesigns of the Project, which now incorporate a rooftop water collection system and a Zero Liquid Discharge water system to address concerns about water quality and volume, and new parking plans to minimize potential traffic congestion during construction of the Project.

These conversations continue as CVE is discussing with the Town of Dover components of a formal community benefits package. CVE is also negotiating a payment in lieu of taxes agreement (PILOT), which will bring substantial revenues to the Town of Dover, the Dover Union Free School District, and Dutchess County for up to 30-years. The Project will be the largest taxpayer in Dover by a significant margin.

CVE continues to support the advancement of Dover's youth through a scholarship, awarded annually to a graduating Dover High School Senior pursuing a degree in engineering or environmental science.

CVE has been working with local conservation and environmental groups, including the Oblong Land Conservancy, to place the land west of the Metro-North rail line, approximately 79 acres, into a permanent conservation trust.

## **CREATING JOBS FOR NEW YORKERS**

Project development and construction will require an estimated investment by CVE of approximately \$1 billion, which will provide significant benefits to the local, regional, and state economies. In the short-term, it is expected that an average of 300 construction jobs will be created during the three-year construction of the project, with up to 750 jobs during the five-month peak construction period. This equates to more than 1,000 "worker-years" of construction employment, benefiting one of the hardest hit economic groups in New York State.

Construction of the Facility will require approximately 36 months. Building demolition and site clean-up will be a component of early-stage project construction. Construction is currently proposed to start in 2013, with a proposed commercial operation date for the Facility in 2016.

The job creation benefits from construction activity will be substantial, with indirect job creation and induced (multiplier) job creation occurring across many local and regional businesses. A socioeconomic model described in the Project's DEIS estimates that a total of 1,451 construction industry and construction related (Full Time Equivalent) jobs will be supported as a result of direct project construction expenditures over the three-year construction period.<sup>13</sup> In addition to the direct construction employment impacts from Project expenditures, the indirect and induced economic



activity resulting from Project construction will support another 751 jobs in Dutchess County in a wide variety of industries. The direct and indirect benefits of Project construction in Dutchess County is estimated at \$224.3 million.

The majority of the construction labor force demand is anticipated to be satisfied from workers within the Harlem/Hudson Valley region. The number of available workers from within the various construction trades is more than enough to satisfy the average required workforce for the proposed Project as shown in the Project's DEIS.<sup>14</sup> In total, workers from within the local labor market would be anticipated to account for approximately 90 percent of the overall labor force.

Once completed, operation of the Facility will support approximately 28 well-paying professional jobs in Dover, along with millions of dollars in taxes to benefit the town, county, school district and state. The investment in the plant, during both construction and operation, will also result in significant secondary economic benefits. As payments to suppliers and worker wages are spent and recirculated in the area economy, additional jobs, income and revenue will be created in a variety of industries, such as lodging, eating and drinking establishments, retail stores, wholesalers, and service providers. Annual operation of the Project is estimated to result in an increase in regional economic activity of \$21.8 million.

## **CONTRIBUTING TO AN ENVIRONMENTALLY SUSTAINABLE FUTURE**

The CVE Project recognizes that jobs and taxes are important community benefits, but are in no way considered to be a replacement for good environmental stewardship. CVE has demonstrated a commitment to such stewardship, reducing its environmental impacts through Project refinements and low-impact design through the course of development.

### *Site Features*

Low-impact design will preserve and protect the environmental quality of the property and will respect the rural character of Dover and the surrounding communities. The developed footprint of an existing industrial site will be utilized and surrounding buffers of trees and topography will be preserved to the greatest extent possible. The Project will interconnect to existing, adjacent energy infrastructure, therefore no new off-site power lines or pipelines will need to be constructed. In addition, assessments for NYSDEC and the US Fish & Wildlife Service have identified no endangered species' habitat on the property.

### *Facility Features*

The Facility will incorporate the latest technology in air-cooled condensers which, when combined with a state-of-the-art Zero Liquid Discharge system, will substantially reduce water use and limit off-site discharge. The size of the Facility has been carefully planned to efficiently utilize the nearby interconnections while minimizing disturbance of natural resources. The Project will minimize impacts to surrounding habitat and wetlands by siting the Project east of the railroad tracks, reducing the size of the Facility's footprint through use of a GIS substation, and incorporating sustainable storm water design features such as native landscaping and bioretention areas.

### *Reducing Emissions*

The Project will minimize its air emissions by utilizing highly efficient combined cycle generation technology and using only clean-burning natural gas to power the combustion turbines. In addition, stringent pollution control measures and LAER/BACT technologies will be incorporated into the Project design. Further, as quantified in the Project's DEIS, CVE's highly efficient production of energy is expected to displace the operation of older, less efficient and higher emitting power plants, and improve regional air quality by a net reduction in regional emissions of air pollutants and greenhouse gases.<sup>15</sup>

As described in NYISO's 2011 CARIS study, "generation solutions produce a net reduction in the emissions of SO<sub>2</sub> and NO<sub>x</sub>, due to the relative low emission rates of a new unit compared to the average emission rates of the existing fleet. The [addition of generation at] Pleasant Valley location offers the greatest emission reductions in SO<sub>2</sub> (7%) and NO<sub>x</sub> (4%)." <sup>16</sup> CVE is only 14 miles away from the Pleasant Valley substation and is comparable to the 1,000 MW generator studied by CARIS.

Emission reductions are confirmed by the Project's Security Constrained Economic Dispatch (SCED) Analysis, presented in the Project's DEIS and also provided to the NYPSC<sup>17</sup>. The SCED Analysis projects decreases in both NO<sub>x</sub> and SO<sub>2</sub> emissions across New York State, and a total CO<sub>2</sub> production decrease across the larger region studied.

### *Safety and Security*

CVE places safety as its highest priority. Combined-cycle, natural gas facilities must conform to stringent federal and state safety regulations for construction and operations. In addition, to ensure safety throughout the Project's development, CVE will issue a Comprehensive Site and Safety Plan (CSSP) that will be coordinated with local officials, law enforcement and fire departments. Construction will strictly follow all federal, state, and local requirements.

### *Environmental Justice and Property Values*

The net short- and long-term socioeconomic effects of the Project will be positive, as the Facility will not create a significant demand on public resources and infrastructure and will contribute economically to the region. As described in the Project's DEIS, there are no Environmental Justice communities proximate to the Facility and the Project will not impose a burden on disadvantaged populations.<sup>18</sup>

It is important to note that property values are affected by a myriad of factors which include externalities such as the quality of school systems, property taxes, and community services. CVE's Payment in Lieu of Taxes agreement (PILOT) will provide millions of dollars per year of new revenues to the Town of Dover and Dover Union Free School District which can be used for improved town/school facilities, expanded community services, and/or lower taxes. A community benefits package will also be negotiated with the Town of Dover that can also contribute to local improvements.

## **APPLYING ADVANCED TECHNOLOGY**

The process of using both the power generated in a combustion turbine generator as well as that generated by a steam turbine generator is commonly referred to as "combined cycle" generation, and is

one of the most efficient technologies for producing electricity. Since a combined cycle plant uses less fuel than either a utility boiler with a steam turbine or a simple cycle gas turbine to generate a kilowatt-hour of electricity, the savings in fuel and, therefore, energy costs are significant. Another benefit of combined cycle technology is that, because less fuel is consumed, environmental emissions are less than that of traditional fossil fuel technologies per megawatt-hour of power generated.

GE will supply the Project with GE's latest 7FA.05 gas turbine technology, highly efficient steam turbines, and generators, of which the steam turbines and generators are expected to be manufactured at GE's facility in Schenectady, NY.

### **MAXIMIZING RATEPAYER VALUE**

The Project will be privately funded, and will generate substantial tax revenue to the benefit of the local community. While the Project is a wholesale generator, and cannot sell electricity directly to the community, the Project's more efficient technology will help displace the operation of older, less efficient, and higher emitting plants, yielding substantial cost savings. These savings were quantified in the economic dispatch analysis provided in the Project's DEIS and presented to the NYPSC, which projects potential aggregate production cost savings of \$241 million in New York State during the Project's first five years of operation.<sup>19</sup> These savings should translate to substantial benefits to end use consumers in New York as well as the surrounding areas.

In March 2012, NYISO published its 2011 Congestion Assessment and Resource Integration Study (CARIS,) which specifically identified the addition of 1,000MW of generation at the Pleasant Valley substation as a solution to reduce congestion in New York State. The CARIS study estimates that the inclusion of a 1,000MW generator at Pleasant Valley would yield an estimated ten-year production cost savings of \$330 million. As noted above, CVE is only 14 miles away from the Pleasant Valley substation.

### **ADHERENCE TO NYISO MARKET RULES**

The CVE Project has entered the NYISO Large Facility Interconnection Process, for interconnection to the local and regional electrical transmission grid (NYISO Queue #310). A Feasibility Study and System Reliability Impact Study, each performed by the NYISO, have been completed and concluded that an interconnection of 1,000 MW at this location can be supported without the need for substantial upgrades and improvements. The Project is part of NYISO Class Year 2011, which will further analyze the Facility's impacts on the grid and identify required upgrades to ensure a reliable interconnection.

## CONCLUSIONS

The CVE project will meet or exceed all of the goals and objectives of the New York Energy Highway Initiative including:

- *Reliability:* CVE's highly reliable, efficient and clean gas turbine technology will help to repower the generation capacity of the aging New York generation fleet as older, inefficient plants are displaced or retired due to tough, new environmental regulations.
- *Advanced Technology:* state-of-the-art GE 7FA.05 gas fired turbines and NY-manufactured GE steam turbines and generators will be installed.
- *Reduction of Air Emissions:* substantial reduction in air emissions will result from the displacement of older, inefficient, higher emitting plants.
- *Reduction of Statewide Production Costs:* \$241 million (PV) reduction of state wide production costs over 5 years (2015-2020); possible \$330 million (PV) reduction of state wide production costs over 10 years (estimated by NYISO using a comparable facility, 2011-2020).
- *Minimization of Environmental Impacts:* the Project is designed to meet or exceed all DEC environmental requirements and will clean up a heavily disturbed and polluted industrial site, placing the land back into productive use; in addition, CVE will donate 79 acres of wetlands to conservation uses.
- *Compatibility with NYISO and NYPSC requirements:* both NYISO and NYPSC have discussed the need for additional combined cycle/efficient generation in the near future, especially due to retirements of coal fired plants and possible retirement of the Indian Point nuclear facility.
- *Jobs Creation:* up to 750 construction jobs will be created representing more than 1,000 'worker years' of construction; 751 indirect jobs will be created or supported; and 28 permanent jobs.
- *Economic Development:* In addition to job creation related to this \$1 billion Facility, steam turbines and generators are expected to be manufactured in Schenectady, NY. Overall economic benefits to Dutchess County are estimated at \$224 million during construction and \$22 million during operation.
- *Taxes:* CVE is negotiating a PILOT agreement with the Town of Dover and will be the largest taxpayer in the Town by a wide margin.
- *World Class Project Sponsors:* The combined expertise of GE, Marubeni, and Advanced Power ensures that the CVE Project will be developed, built and operated to the highest possible standards in the power industry utilizing clean, efficient, state-of-the-art generation technology.
- *Financing:* Obtaining a long-term Power Purchase Agreement (PPA), or equivalent contractual off-take agreement, from an investment-grade counterparty will be an essential element for the CVE Project to be constructed. CVE believes that the State of New York can facilitate such an agreement, and in turn accomplish the goals of the Energy Highways Initiative, through the creation of a state-sponsored Request for Proposals (RFP).

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## ENDNOTES

- <sup>1</sup> See *Security Constrained Economic Dispatch (SCED) Analysis* (DEIS Appendix 1-A) Table 8.1 (page 16) available at <http://www.cricketvalley.com/study-process/documents.aspx>.
- <sup>2</sup> Ibid. Pages 6-7. Tables 3.3, 3.4, and 3.5
- <sup>3</sup> See NYISO 2011 *Congestion Assessment and Resource Integration Study* (CARIS), page 51 available at: [http://www.nyiso.com/public/webdocs/services/planning/Caris\\_Report\\_Final/2011\\_CARIS\\_Final\\_Report\\_3-20-12.pdf](http://www.nyiso.com/public/webdocs/services/planning/Caris_Report_Final/2011_CARIS_Final_Report_3-20-12.pdf)
- <sup>4</sup> See, e.g., NYSPSC, Case 10-E-0197, NRG Astoria Power LLC, Order Granting Certificate of Public Convenience and Necessity, Providing for Lightened Regulation, and Approving Financing (Jan. 24, 2011) at 13; NYSPSC, Case 08-T-0034, Hudson Transmission Partners, LLC, Order Granting Certificate of Environmental Compatibility and Public Need (Sept. 15, 2010) at 41; NYSPSC, Case 08-T-1245, Bayonne Energy Center, LLC, Order Adopting the Terms of a Joint Proposal and Granting Certificate of Environmental Compatibility and Public Need, with Conditions, and Clean Water Act §401 Water Quality Certification (Nov. 12, 2009), at 16 ; NYSPSC, Case 09-E-0250, Astoria Generating Company, L.P., Order Granting a Certificate of Public Convenience and Necessity, Providing for Lightened Regulation, and Approving Financing (Dec. 23, 2009), at 11-12.
- <sup>5</sup> See PSC Case No. 11-0E-0423, *Consolidated Edison Company of New York, Inc.*, Declaratory Ruling Regarding Blackstart Service, Sept. 28, 2011.
- <sup>6</sup> See *Security Constrained Economic Dispatch (SCED) Analysis* (DEIS Appendix 1-A) Table 8.1 (page 16) available at <http://www.cricketvalley.com/study-process/documents.aspx>.
- <sup>7</sup> See NYISO *Power Trends 2012: State of the Grid*, at pg. 32, available at: [http://www.nyiso.com/public/webdocs/newsroom/power\\_trends/power\\_trends\\_2012\\_final.pdf](http://www.nyiso.com/public/webdocs/newsroom/power_trends/power_trends_2012_final.pdf)
- <sup>8</sup> Ibid at pg. 42
- <sup>9</sup> Ibid at pg. 42
- <sup>10</sup> See *2009 State Energy Plan, Volume I* at page 2; available at: [http://www.nysenergyplan.com/final/New\\_York\\_State\\_Energy\\_Plan\\_VolumeI.pdf](http://www.nysenergyplan.com/final/New_York_State_Energy_Plan_VolumeI.pdf)
- <sup>11</sup> See NYSDEC's Project website at: <http://www.dec.ny.gov/permits/64754.html> or the Cricket Valley Energy website at: <http://www.cricketvalley.com/study-process/documents.aspx>
- <sup>12</sup> See Cricket Valley Energy website at <http://www.cricketvalley.com/study-process/documents.aspx>
- <sup>13</sup> See *CVE Draft Environmental Impact Statement: Section 6.7 –Socioeconomics Table 6.7-12* at page 6-112, available at: [http://www.cricketvalley.com/Libraries/Draft\\_Environmental\\_Impact\\_Statement\\_DEIS/CVE\\_DEIS\\_Section\\_6\\_-\\_Community\\_Resources.pdf](http://www.cricketvalley.com/Libraries/Draft_Environmental_Impact_Statement_DEIS/CVE_DEIS_Section_6_-_Community_Resources.pdf)
- <sup>14</sup> Ibid. Section 6.7.3.1.3 at page 6-114.
- <sup>15</sup> See *Security Constrained Economic Dispatch (SCED) Analysis* (DEIS Appendix 1-A) Tables 3.3, 3.4, and 3.5 (pages 6-7) available at <http://www.cricketvalley.com/study-process/documents.aspx>.
- <sup>16</sup> See NYISO 2011 *Congestion Assessment and Resource Integration Study* (CARIS), page 61 available at: [http://www.nyiso.com/public/webdocs/services/planning/Caris\\_Report\\_Final/2011\\_CARIS\\_Final\\_Report\\_3-20-12.pdf](http://www.nyiso.com/public/webdocs/services/planning/Caris_Report_Final/2011_CARIS_Final_Report_3-20-12.pdf)
- <sup>17</sup> See *Security Constrained Economic Dispatch (SCED) Analysis* (DEIS Appendix 1-A)
- <sup>18</sup> See *CVE Draft Environmental Impact Statement: Section 6.7.4 –Environmental Justice* at page 6-125, available at: [http://www.cricketvalley.com/Libraries/Draft\\_Environmental\\_Impact\\_Statement\\_DEIS/CVE\\_DEIS\\_Section\\_6\\_-\\_Community\\_Resources.pdf](http://www.cricketvalley.com/Libraries/Draft_Environmental_Impact_Statement_DEIS/CVE_DEIS_Section_6_-_Community_Resources.pdf)
- <sup>19</sup> See *Security Constrained Economic Dispatch (SCED) Analysis* (DEIS Appendix 1-A) Table 8.1 (page 16) available at <http://www.cricketvalley.com/study-process/documents.aspx>.