



City Council Staff Report

DATE: September 2, 2015 CONSENT CALENDAR

SUBJECT: AUTHORIZE APPROVAL OF A NON-BINDING LETTER OF INTEREST WITH VEOLIA NORTH AMERICA FOR DEVELOPMENT OF A BIOGAS-TO-ENERGY PROJECT AT THE WASTEWATER TREATMENT PLANT

FROM: David H. Ready, City Manager

BY: Marcus L. Fuller, Assistant City Manager/City Engineer

SUMMARY:

This action will authorize the City Manager to enter into a non-binding Letter of Interest with Veolia North America ("Veolia") in the development of a biogas-to-energy project located at the City's Wastewater Treatment Plant.

RECOMMENDATION:

1. Authorize approval of a non-binding Letter of Interest with Veolia North America in the development of a biogas-to-energy project located at the City's Wastewater Treatment Plant; and
2. Authorize the City Manager to execute all necessary documents.

STAFF ANALYSIS:

In 2011, the City completed a greenhouse gas ("GHG") emission inventory as an initial step in meeting its Path to Sustainable Communities objectives. According to the GHG inventory, the City (through its governmental activities and operation of its various facilities) generated 31,738 metric tons of carbon dioxide equivalents (MTCO_{2e}) in 2012, which was estimated to increase to 33,234 MTCO_{2e} by 2020. The City is subject to state legislation (Assembly Bill 32), the the California Global Warming Solutions Act of 2006, created a program to reduce GHG emissions to 1990 levels (estimated at 26,812 MTCO_{2e}) by the year 2020.

GHGs have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential of 1. The calculation of the carbon dioxide equivalent (CO_{2e}) is a consistent methodology for comparing GHG emissions, since it normalizes various GHG emissions to a consistent

metric. Methane’s warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential.

The City’s GHG Inventory identified a significant source of GHG emissions at the Wastewater Treatment Plant (“WWTP”). The Palm Springs Wastewater Treatment Plant was originally constructed in 1960 to treat 4.15 million gallons per day (mgd). Two facility expansions were completed in 1979 and 1983, bringing the total design capacity to 10.9 mgd for average annual flow. The treatment processes consist of preliminary screening, grit removal, primary clarification, trickling filters, and secondary clarification. Treated effluent is disposed of onsite in percolation ponds or is supplied to the Desert Water Agency for further treatment to meet reuse standards for offsite irrigation. Biosolids from the treatment process are thickened, then stabilized by anaerobic digestion and dried with sludge drying beds before final disposal. According to the GHG Inventory, the City’s WWTP is the single largest source of GHG emissions, as shown in the following Table 1.

Table 1

Category	Emissions (MTCO _{2e} per year)						
	1990	2000	2005	2008	2012	2020	2035
Former Palm Springs Landfill ¹	1,811	1,482	1,341	1,263	1,145	917	632
Wastewater treatment plant (fugitive) ¹	13,236	14,028	14,847	15,282	15,957	17,308	19,841
Co-generation plants ¹	6,646	10,020	9,112	8,746	8,746	8,746	8,746
Airport fuel use ¹	53	79	86	109	115	133	162
City vehicle fleet ¹	1,687	1,495	1,450	1,559	1,628	1,767	2,026
Ozone-depleting substance substitutes ¹	99	99	99	99	99	99	99
Electricity – municipal ²	834	734	1,809	2,208	2,302	2,467	2,716
Electricity – streetlights ²	741	652	633	681	710	761	838
Employee commute ³	1,705	1,312	1,216	1,280	1,036	1,036	1,036
Total	26,812	29,901	30,593	31,227	31,738	33,234	36,096

Notes: 2012, 2020, and 2035 are projections based on business as usual.
 MTCO_{2e} = metric tons of carbon dioxide equivalents
¹ Scope 1 emissions
² Scope 2 emissions
³ Scope 3 emissions
 Source: Appendix A.

In 2012, the City’s WWTP generated an estimated 15,957 of the 31,738 MTCO_{2e} by all City activities and operations, equivalent to 50% of GHG emissions City-wide, primarily due to the fact that the biogas generated by the wastewater treatment process is methane, and is flared to the atmosphere at the WWTP and not currently reused for a beneficial purpose. Identifying a cost-effective method to reuse the biogas for production of energy at the WWTP has been an item investigated by staff for many

years, however, the technology required to adequately process the biogas to operate fuel cells to generate electricity is prohibitively expensive.

Two recent events may have changed the dynamics by which the City may realize on an opportunity to reuse the biogas generated at the WWTP, which is an abundantly free energy source, and significantly reduce the City's carbon footprint by preventing its release into the atmosphere.

Senate Bill 1122: Bioenergy Feed-In Tariff

In September 2012, Gov. Brown signed SB 1122 (Rubio, 2012) into law, requiring an incremental 250 MW of renewable Feed-in Tariff ("FiT") procurement from small-scale bioenergy projects that commence operation on or after June 1, 2013.

SB1122 requires that each of California's three large investor owned utilities (PG&E, SCE, and SDG&E) must procure a share of the 250 MW requirement based on the ratio of each utility's peak demand to statewide peak demand. Additionally, the statute orders the CPUC to allocate the 250 MW procurement requirement among the following categories:

- (i) For biogas from wastewater treatment, municipal organic waste diversion, food processing, and codigestion, 110 megawatts.
- (ii) For dairy and other agricultural bioenergy, 90 megawatts.
- (iii) For bioenergy using byproducts of sustainable forest management, 50 megawatts.

In December 2014, the California Public Utilities Commission ("PUC") issued a proposed decision on implementing SB 1122, which identified a requirement for SCE to purchase 114.53 MW of the 250 MW of renewable energy generated by bioenergy projects (46%). The most important issue to be determined by the PUC is the price set for the FiT to be paid by SCE to operators of bioenergy projects that generate renewable energy and feed it into SCE's grid. The PUC has proposed a decision where the initial FiT starting price will be \$127.27 per MWh (megawatt-hours) or \$0.127 per kWh (kilowatt-hours) of energy produced.

A final ruling on the implementation of SB 1122 and the price for the FiT to be adopted is pending formal action by the PUC.

California Energy Commission Electric Program Investment Charge (PON-14-305)

In August 2014, the California Energy Commission ("CEC") issued its solicitation for Program Opportunity Notice ("PON") 14-305, requesting projects for funding technology demonstration and deployment projects that demonstrate and appraise the operational and performance characteristic of commercial biomass conversion technologies,

generation systems, and development strategies. The CEC's solicitation is funded by the Electric Program Investment Charge ("EPIC"), an electricity ratepayer surcharge established by the PUC in December 2011. The purpose of the EPIC program is to fund clean energy technology projects that promote greater electricity reliability, lower costs, and increased safety. In addition to providing ratepayer benefits, funded projects must lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.

At that time, the City was approached by Biogas & Electric, LLC, ("B&E"), to offer a letter of support to B&E in its submittal of a grant application pursuant to the CEC's PON-14-305 to develop and construct a renewable biogas fired co-generation plant at the City's WWTP to capture the wasted methane gas flared to the atmosphere, process the biogas through filtering and cleaning (or "scrubbing"), and burning the biogas as fuel for a co-generation engine thereby producing electricity that can be sold to SCE on its utility grid via the FiT mandated by SB 1122. A letter of support was offered by staff to B&E, and subsequently, B&E was notified of its award by the CEC in January 2015. The CEC has awarded B&E \$2,249,322 for "installation of a lean burn biogas engine with emissions control at a wastewater treatment plant in South Coast Air Quality."

On May 13, 2015, B&E submitted a letter to the City Council requesting the City to enter into discussions with B&E and its partner, Veolia North America ("Veolia"), on deploying their "wet scrubbing technology" to clean the biogas for fuel to operate a cogeneration system at the City's WWTP. A copy of the B&E letter is included as **Attachment 1**. The intent would be to partner with B&E and Veolia through use of the CEC grant award to design, construct and operate the co-generation plant to produce energy to sell to SCE at the FiT rate mandated by SB 1122. Accordingly, Veolia has provided the City with a non-binding Letter of Interest ("LOI") to facilitate the partnership. Veolia has provided a "White Paper" identifying the background to the proposed partnership regarding the co-generation plant, and the resulting environmental and financial benefits the City may realize through its development and operation. A copy of the White Paper is included as **Attachment 2**.

Veolia Non-Binding Letter of Interest

The LOI has been submitted as a preliminary, non-binding agreement outlining the obligations of each party in developing a biogas-to-energy project (the "Project") at the City's WWTP, incorporating the technology developed by B&E and using the \$2.2 Million CEC grant awarded it. The LOI proposes:

- City will own the co-generation plant to be operated by Veolia on a contract basis;
- Veolia will develop, design, build, operate, and potentially finance construction of the co-generation plant;
- Electricity generated by the co-generation plant would be sold to SCE under the rules adopted pursuant to SB 1122, at the FiT – and all revenue generated by the co-generation plant would be shared between City and Veolia depending upon any

- financing of its construction;
- LOI – Phase I:
 - Phase I commences upon execution of the LOI and concludes upon issuance by the PUC of final rules and program requirements to implement SB 1122;
 - Veolia shall perform, at its sole expense, all feasibility studies and conceptual development of the co-generation plant;
 - Veolia shall coordinate with SCE on utility applications and interconnection agreements, and pay all third party fees, expenses and costs;
 - City's responsibility is limited to committing all necessary staffing resources to support Phase I activities and execute/authorize all applications as Project owner and sponsor;
 - ***The City may terminate the LOI at any time without further liability during Phase I***
 - LOI – Phase II:
 - Phase II commences after City's specific authorization after reviewing the financial adequacy of the project upon the final approval and issuance of rules and program requirements to implement SB 1122;
 - City/Veolia will define all remaining tasks and costs to complete pre-development activities, including commitment of financial and other resources to delivery of the Project;
 - Phase II concludes upon execution of a Development Agreement by which the City would assign Veolia the rights to use the biogas from the WWTP to generate electricity for sale to SCE under the terms of the Development Agreement;
 - City will act as Lead Agency pursuant to CEQA, and assume all responsibility and costs for performing environmental analysis necessary to comply with CEQA in the development and construction of the Project;
 - Veolia's rights to operate the co-generation plant would automatically terminate with termination of its separate WWTP O&M Agreement with the City;
 - City may terminate the LOI during Phase II subject to the payment of a termination fee in an amount to compensate Veolia for all of its costs and expenses, not to exceed \$150,000

ENVIRONMENTAL IMPACT:

The requested City Council action is not a "Project" as defined by the California Environmental Quality Act (CEQA). Pursuant to Section 15378(a), a "Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. The requested action is to authorize the approval of a Letter of Interest with Veolia to develop a co-generation project at the City's WWTP, and is exempt from CEQA pursuant to Section 15378(b), in that a "Project" does not include: (5) Organizational or administrative activities of governments that will not result in direct or indirect physical changes in the environment. Development of a co-generation project at the WWTP may be considered a Project under CEQA, and any future actions associated with the co-generation project will comply with applicable CEQA regulations.

FISCAL IMPACT:

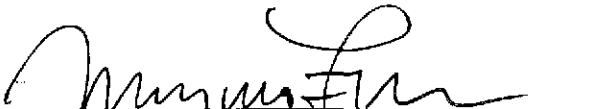
Veolia has estimated the total capital cost of the Project at \$3,454,138 less the CEC grant awarded to B&E of \$2,249,322 resulting in an investment cost of \$1,204,816. The terms of financing this potential investment cost will be included in the Development Agreement ("DA") established during Phase II of the LOI, with funding either provided by Veolia through repayment under the DA or provided directly by the City from the Wastewater Fund (Fund 420).

Veolia estimates the WWTP may generate 2,599,385 kWh of electricity annually through a co-generation plant, which if sold to SCE at the FIT rate of \$0.127 per kWh would generate \$330,000 in electricity sales annually. Veolia has estimated the annual cost to operate and maintain the co-generation plant at \$106,942 producing a net positive cash flow of approximately \$225,000 – a simple payback of 5 years if the City contributes the necessary capital directly from its Wastewater Fund.

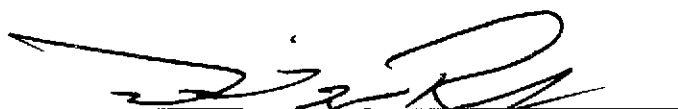
SUBMITTED

Prepared by:

Approved by:



Marcus L. Fuller, MPA, P.E., P.L.S.
Assistant City Manager/City Engineer



David H. Ready, Esq., Ph.D.
City Manager

Attachments

1. B&E Letter
2. White Paper
3. Letter of Interest

ATTACHMENT 1



May 13, 2015

The Honorable Paul Lewin
The Honorable Chris Mills
Members, City of Palm Springs City Council
3200 E. Tahquitz Way
Palm Springs, CA 92262

Dear Council Members:

Thank you for the opportunity that Biogas & Electric, LLC (B&E) was given to propose a renewable energy grant to the California Energy Commission (CEC) on the behalf of B&E, Veolia North America and the City of Palm Springs. We are proud and happy to announce that the grant application (PON 14-305) submitted last fall was successful and a grant has been awarded in the amount of \$2.3M for the development of an environmentally sound cogeneration project in support of the City of Palm Springs' Waste Water Treatment Plant (WWTP), current operated by Veolia North America.

In supporting the City's attention to sustainable environmental practices and operations, B&E partnered last fall with Veolia North America in submitting a grant application for a renewable biogas fired cogeneration development at the WWTP in Palm Springs. B&E has developed a wet scrubbing solution for engine exhaust and submitted an application for a \$2.3M grant from the CEC for the development of a cogeneration system at the Palm Springs WWTP using this innovative an new technology. Both Veolia and City staff submitted letters to support this effort. The benefits of the grant are significant. While cogeneration at the WWTP using digester gas that is currently flared into the atmosphere previously was hard to economically support, a large grant would be a game changer and allow the plant to use its generated biogas and generate free electricity for use at the plant (or for export to the grid).

Fortunately, the grant from the CEC was successful! In order to use the grant money, B&E must use the funding to build a cogeneration plant that would use its wet scrubbing technology to clean harmful chemicals from the engine exhaust. B&E has recently deployed its technology at a municipal wastewater treatment plant in the city of Bakersfield and also at a dairy farm near El Centro. In fact, WWTP #3 at the City of Bakersfield has operated both a solar field and a cogen facility that has proven to be economical for Bakersfield.

It is my understanding that the City of Palm Springs is also evaluating other options for providing low cost/no cost electricity to the WWTP. While we very much support this, we also recommend that the City enter into a discussion with B&E and Veolia to discuss the merits of incorporating a cogeneration system into its sustainability plan. In fact, while the City is considering other options, such as solar, we feel strongly that the City should keep in mind that it can deploy more than one technology. Favorable regulations exist (SB-1122 for renewable bioenergy projects) that would give the City the opportunity to sell electricity via the grid to SoCal Edison at a high rate, making this project very lucrative.

Multiple cities across the country employ more than one technology in the generation of electricity at Water Reclamation facilities. One such plant is in the City of Gresham, Oregon, where city leaders worked over the last several years to employ cogen, solar and several energy efficiency measures to bring the plant to a 'net zero' status, including selling excess generation back to the grid. The combination of projects were successful in reaching the net zero goal as of January of 2015 and saving the City over \$500,000 a year in electricity costs.

We would like to request a meeting to discuss the grant that was awarded to B&E for a project at the City of Palm Springs and the need to decide if the City is still interested in this low risk and very attractive opportunity for the City of Palm Springs.

Please consider our request, and I would like to follow up with you in one week to see when a good time may be to discuss this.

Thank you and please feel free to contact me at your convenience. I can be reached via mobile phone at (619) 251-3849 or via email at seth@biogasandelectric.com.

Best regards,

A handwritten signature in black ink that reads "Seth Burns". The signature is written in a cursive style and is positioned above a solid horizontal line.

Seth Burns
Managing Member
Biogas & Electric, LLC

ATTACHMENT 2

Biogas to Energy : City of Palm Springs

Veolia West Operating Services, as the operator of the City of Palm Springs' Wastewater Treatment Plant (WWTP), is recommending the approval by the City of a non-binding Letter of Intent for the development of a biogas to energy project at the plant, for the purpose of selling electricity produced to the local electric utility company. The project is expected to yield greater than two hundred thousand dollars a year in net revenue to the City of Palm Springs by burning excess biogas that is produced at the plant through the anaerobic digestion process for the purpose of generating heat and electricity through a cogeneration internal combustion engine. The project is made possible by a grant from the California Energy Commission of \$2.2M to a third party for use at the City's WWTP.

Background:

Anaerobic Digestion & Biogas

The City of Palm Springs' WWTP utilizes a process called 'anaerobic digestion' in its treatment of wastewater. The purpose of the process is to break down organic solids that are removed from the treated wastewater. The process itself, on a basic level, involves placing the "sludge" waste in an airtight container called a "digester", and then heating the air inside the digester so that organic compounds go through a natural process of breaking down the organic materials. One of the waste products from this process is called "biogas". Biogas is primarily composed of methane and Carbon Dioxide. The release of methane into the air is a regulated activity, and thus must be flared into the atmosphere if it is not used for any other processes. Currently, the City's WWTP produces roughly 32 million standard cubic feet (SCF) of biogas per year. All of the methane is not utilized and is burned with a flare. Byproducts of the flared biogas are released into the atmosphere, including 750 metric tons of carbon dioxide. Furthermore, the largest source of carbon dioxide emissions in the City, as identified in the City's 2011 Greenhouse inventory report, are from the WWTP.

Study & Research into Utilizing Biogas for Electricity Production

Biogas can also be utilized as a fuel source. Veolia North America, as the operator of the Plant, has previously explored potential uses for the biogas produced at the plant. In 2007, Veolia conducted a cogeneration feasibility study that explored the technical and economic benefits and risks to the utilization of various electricity generation technologies by way of utilizing the biogas produced in the anaerobic digestion process at the WWTP. This included looking at micro-turbines, fuel cells and other generating technologies. One of the primary conclusions of the study was that cogeneration was not economically feasible, with simple paybacks ranging from 12 years on up. This was due to the expense of constructing an electricity generation plant versus the amount of electricity that could be produced by the available biogas production.

Cogeneration continued to be looked at every so many years at the WWTP, including recently as part of the Capital Improvement Program. Unfortunately the biogas produced from the plant was never enough by itself to provide an economically attractive payback, even when accounting for the State of California's Self-Generation Incentive Program (SGIP).

While the economic payback has haunted the potential for cogeneration at the Plant, such a payback would be available if additional funds were made available through grants, rebates or other incentives.

Grant Opportunity

In early 2014, Veolia was introduced to a start-up firm, Biogas and Electric, LLC. (B&E), that brought a new possibility to how to utilize the biogas at the WWTP. B&E had developed a low cost NOx and SOx reduction wet scrubbing technology called NOxRx® which can be used in conjunction with all biogas engines and anaerobic digesters on the market today. NOxRx® has a patented method of utilizing the effluent stream from an anaerobic digester to reduce emissions from biogas engines. Furthermore, unlike the traditionally used Selective Catalytic Reduction (SCRs) for cleaning engine exhaust, NOxRx® does not produce nitrous oxide and does not require hydrogen sulfide removal or biogas conditioning prior to combustion. Therefore, NOxRx® represents a significant cost savings over competing NOx reduction solutions. NOxRx® is also more effective at reducing NOx emissions than other solutions.

Combustion of biogas in a low cost lean burn Combined Heat and Power Plant (aka: CHP, cogeneration or 'cogen') built by Caterpillar or GE Jenbacher is vastly more economical than alternatives such as fuel cells, micro-turbines or conditioning biogas to pipeline quality. However, biogas fired internal combustion engines generate NOx and SOx emissions making it difficult for biogas projects to obtain air permits for biogas fired CHPs. The best available control technology (BACT) for biogas fired engines is urea injected Selective Catalytic Reduction (SCR) which also requires biogas conditioning (removal of H2S and siloxanes) prior to combustion due to poisoning of the catalytic process. SCR systems are capable of reducing NOx emissions in a biogas fired CHP's exhaust stream to approximately 9-11 ppm, but are simply not capable of complying with the California Air Resource Board (CARB) standard of 0.07 lbs. of NOx per MWh or 2-3 ppm. Additionally, SCR catalysts create nitrous oxide (N2O) as a byproduct of NO reduction (Lipman and Delucchi in Climatic Change 53: 477 – 516, 2002). Nitrous oxide is not detected during most NOx emissions testing and is a greenhouse gas approximately 300 times more potent than CO2. The inability of CHPs to comply with existing air regulations is forcing many WWTP's and their communities to not utilize their valuable biogas stream, an unfortunate detriment to the environment and waste of a renewable energy source for communities within California.

B&E, having figured out a solution to this problem, approached Veolia because they knew that we had looked at cogen options before and did not move ahead due to financial infeasibility. They informed Veolia of a grant opportunity that was coming in the fall of 2014 by the California Energy Commission (CEC). The CEC grant would come through the Electric Program Investment Charge (EPIC), which is a state funded program to promote the development of clean energy technologies. The technology developed by B&E would qualify under this grant, but to apply they would need a host project.

Both Veolia and City staff agreed to non-binding support of the grant application and in January 2015, the CEC awarded a grant in the amount of \$2,249,322 to B&E for use at the City of Palm Springs WWTP within three years of grant award. The grant agreement was officially executed on May 8th, 2015 by the California Energy Commission. This grant would help partially fund the new technology to be utilized in a cogeneration plant, as well as the design and construction of the cogeneration plant itself.

Proposed Plant

At the direction of Veolia, and working with its energy consulting subsidiary, SourceOne, Inc., a team was put together to further study into the impact that the grant would have on the financial feasibility of a cogeneration plant and the expected benefits and potential risks.

Benefits

The primary benefit originally projected was the offset in electricity costs from the WWTP's daily operation, however, the City is currently evaluating bids on the installation and operation of a small solar farm located adjacent to the WWTP. The solar installation being considered is expected to provide an amount of electricity equivalent or more than what is currently used by the WWTP.

The other option for generated electricity by a cogen unit fueled by the plant's biogas, is for revenue generation. Under SB1122, the state mandated incentives and feed-in tariffs for waste to energy plants to sell their excess or entire generation to the local electric utility. While SB1122 was passed in 2012, it is expected that this summer the California Public Utilities Commission (CPUC) will officially approve a mandatory feed-in tariff (FIT) program that would take effect in January 2016. In a mandatory FIT, the local utility company (Southern California Edison – "SCE") would be required to purchase electricity generated by the City's WWTP at a pre-determined rate under a long term contract. The purpose of the law was to incentive Cities such as the City of Palm Springs to find useful and environmentally responsible ways of re-purposing their biogas production. The current rate being analyzed for approval this summer is \$127/MWh, or \$0.127 per kWh.

Risks

The primary risk in the development of a cogen plant at the WWTP utilizing the grant obtained by B&E is the technology risk. However, Veolia believes this risk does not make cogeneration unattractive. While B&E has tested their technology and has finished installation of a NOxRx® system in the City of Bakersfield, failure of the technology at the City of Palm Springs would not render the cogen plant at the WWTP non-operational for long. An SCR system could be installed in its place at a quoted cost of approximately \$450,000. To ensure that the SCR is able to meet the CARB standard, the price risk for a biogas pre-treatment skid is already built into the estimated Capital Cost. This downside risk in various financial analysis done does not make the project unattractive, and still produces good return on investment.

Economic and Technical Details

SourceOne, working under the direction of Veolia, has composed a summary table of the economic and technical characteristics of a cogen plant at the WWTP, under the assumption that the City was able to successfully contract with SCE at a rate of \$127/MWh. The following is a summary of a cogen plant being examined and the economic returns. These figures are based on professional knowledge of Veolia and are simply budgetary estimates:

Project Capital Cost:	\$3,454,138	CHP Plant Capacity (kW):	400
CEC Grant:	\$2,249,322	Electricity Produced (kWhs):	2,599,385
Net Investment:	\$1,204,816	Natural Gas Use Avoided (therms):	17,326
		Biogas Consumed (therms):	208,000
Electricity Sales:	\$330,902	Project Timeline:	24 - 30 Months
Natural Gas Use Reduction:	\$15,871	- From "Go" decision to Complete	
Revenue / Cost Avoidance:	\$346,773		
Operations & Maintenance	\$106,942		
Net Positive Cash Flow:	\$239,831		
Simple Pay Back (Years):	5.0		

Recommendation

Veolia strongly supports the construction and operation of a cogeneration plant to utilize the biogas produced from the WWTP, however, it only recommends this if the cogen plant is financial attractive. With the anticipated establishment of a mandatory biogas FIT from the CPUC, the City can realize annual revenues of \$200,000 per year, with a net profit of \$100,000. These funds could go to fund other critical City infrastructure needs. Most importantly, the WWTP could achieve the coveted 'Net Zero' status (contingent upon the anticipated electricity production from solar) that only few other cities in the country have achieved. 'Net Zero' means that the total electricity used by the plant would be smaller or equal to the renewable energy created at the site. It would serve as yet another example to the citizens of the City of Palm Springs and the State of California of the forward looking and sustainable approach taken by the City of Palm Springs to energy management.

In order to further explore utilizing cogeneration at the WWTP due to the successful award of the EPIC grant, Veolia has requested a non-binding Letter of Intent (LOI) be signed with the City so that they can produce the necessary resources to advance the plant design from Concept to Schematic Level. A Schematic Level Design will provide the level of detail to increase the cost estimate to +/- 10%, firm up the financial benefits, and produce specifications for competitive bidding purposes. The LOI they have proposed establishes that both the City and Veolia will work in good faith towards an agreement with Veolia to design, build, operate and maintain a cogen facility, but that any such agreement is based upon certain conditions, including:

- The negotiation and consummation of a definitive Development Agreement with the City
- Negotiation and execution of all other agreements required for the project between Veolia, the EPC (Engineer, Procure and Construct contractor), the City of Palm Springs and Biogas and Electric, LLC
- Agreement with the with interconnecting pipeline or utility

- Absence of material adverse change affecting the project
- Obtaining all required third-party and regulatory approvals and consents for the project
- An enforceable funding commitment or grant from the California Energy Commission (CEC) in an amount of no less than \$2,249,322

As the City is not bound to execute an agreement if the results of further work by Veolia do not produce a project acceptable to the City, it is the recommendation to the City Council that this LOI proposed by Veolia be accepted and approved.

ATTACHMENT 3



Marcus L. Fuller, MPA, PE, PLS
Assistant City Manager/City Engineer
City of Palm Springs
3200 E. Tahquitz Canyon Way
Palm Springs, CA 92262

Subject: Letter of Interest for Biogas to Energy Project

Dear Marcus:

Veolia North America ("Veolia") is pleased to submit to the City of Palm Springs ("City") this preliminary, non-binding Letter of Interest (LOI) indicating Veolia's interest in developing a biogas to-energy project ("Project") at the City's Wastewater Treatment Plant (the "Plant") based upon the experimental technology of Biogas & Electric, LLC ("B&E") known as NOxRx[®], a post combustion emissions reduction solution for stationary biogas engines.

1. Overview of Roles of the Parties

The Plant is owned by the City and it is operated by Veolia on a contract basis and all gas generated by the Plant's anaerobic digestion facilities and equipment is flared in conformance with regulatory requirements of the South Coast Air Quality Management District. The anaerobic digestion system presently consists of sludge mixing, heating, condensate management, collection piping, flare station and other related systems and equipment. Under this LOI, Veolia proposes to develop, design, build, operate, and potentially finance a biogas combined heat electricity generation system ("System") for sale of the produced electricity to Southern California Edison by a Renewable Electricity Power Purchase Agreement ("PPA") under the feed-in-tariff (FIT) authorized under Public Utilities Code Section 399.20 (S.B. 1122). The City and Veolia would share in the net revenues generated by the System as contemplated under this LOI depending on the amount of, if any, financing done through Veolia. City would continue to own, and Veolia would continue to operate the Plant including the System for a period coterminous with Veolia's Plant O&M Agreement with the City.

For the purposes of this LOI, the Project is considered to be the biogas collection and processing facility and associated equipment and the System.

The ultimate financing structure for the Project is yet to be determined based upon the City's access to funding. Veolia will assemble and manage a qualified team to engineer, procure, design, build,

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www.veolianorthamerica.com



construct (“EPC”) and operate the Project for an initial operation period, subject to approvals below. Veolia will also retain a design and construction team to perform any upgrades/improvements to the existing Plant, including incorporating waste heat into the Plant, before the point of delivery of the biogas.

2. Description of Proposed Transaction

Veolia proposes to advance the Project in multiple phases at Veolia’s expense and subject to the terms and conditions of this LOI.

The initial phase (“Phase I”) will include the feasibility and front end conceptual development, engineering and design work necessary to initiate applications for the SCE interconnection and all necessary governmental and regulatory licenses, permits and approvals. Veolia would manage all of the development activities associated with Phase I and advance all of the third-party fees, expenses and costs. The City will commit all necessary staffing resources to support the Phase I activities and execute and authorize all applications as the Project owner and sponsor. Phase I will commence upon execution of this LOI and conclude upon the issuance by the California Public Utilities Commission (CPUC) of final rules and program requirements for the implementation of Senate Bill 1122. The City may terminate this LOI without further liability at any time during Phase I.

The second phase (“Phase II”) shall commence after receipt of City’s specific authorization to proceed after City’s review of the financial adequacy of the Project upon the final approval and issuance of rules and program requirements for the implementation of Senate Bill 1122. If the City agrees there is financial adequacy of the Project based on the final rules implementing Senate Bill 1122, and agrees to proceed with Phase II, the parties would endeavor to define the remaining tasks and costs to complete all pre-development activities and jointly commit the financial and other resources to advance the Project to a point at which the financing, transaction structure and other commercial terms have been mutually agreed. The City will commit all necessary staffing resources to support the Phase II activities, execute and authorize all applications as the Project owner and sponsor, and will act as the Lead Agency and assume all responsibility and costs for any activities required under the California Environmental Quality Act (CEQA). The City may terminate this LOI without further liability at any time during Phase II, subject to the payment of a termination fee in an amount intended to compensate Veolia for all of its costs and expenses plus reasonable overhead and profit, but such termination fee shall not exceed \$150,000. Phase II would conclude upon the execution and delivery by the parties of a definitive agreement (the “Development Agreement”) under which City would assign to Veolia the rights to use of the biogas from the Plant in the System and the electricity generated would be sold to SCE under the PPA.

The term of the Development Agreement would commence upon execution of the Development Agreement and would terminate concurrently with the termination of the O&M Agreement for the Plant such that Veolia would be responsible for the integrated operation, management and maintenance of both the System and Plant.



In return for the rights to biogas from the Plant, Veolia anticipates monthly payments would be made to City, net of all operating costs and expense (and possibly capital repayment) associated with the System. The flow of funds from the System will be negotiated and included in the Development Agreement.

City makes no representation or warranty on the quantity or quality of biogas available to Veolia for the Project, but will cooperate with Veolia to operate the Plant to achieve a minimum methane content while maintaining regulatory compliance. Veolia states that it will conduct all appropriate due diligence on the quantity and quality of the biogas to assure itself of the economic viability of the Project prior to the Development Agreement.

Further, Veolia would be responsible for managing all biogas generated from the Plant in accordance with all applicable regulations.

The Development Agreement will contain additional terms and conditions that are appropriate for a transaction of this kind, including representations and warranties, liability, mutual waivers of consequential damages, insurance, choice of governing law, termination, dispute resolution, confidentiality and other similar provisions.

The proposed transaction described above may be referred to in this Letter as the "Transaction".

3. 180-Day Exclusivity Period

For a period of one hundred and eighty (180) days from execution of this LOI (the "Exclusivity Period"), City agrees not to, and will cause its advisors, management team members, representatives and affiliates not to, solicit, encourage or entertain (including by way of furnishing any non-public information concerning the Plant or the Project), or enter into or continue to conduct any discussions or negotiations with respect to, any project involving the Plant and processing for sale of the biogas. Veolia agrees to use its best efforts during this 180-day period to complete all due diligence necessary to negotiate a binding agreement, including the payment terms described in Section 2 of this Letter. Once Veolia completes the due diligence, City and Veolia will endeavor in good faith to negotiate a binding agreement to complete the Transaction.

4. Conditions and Necessary Approvals

The obligation of Veolia to enter into legally binding agreements and implement the Transaction is conditioned upon and will be subject to among other things satisfactory completion of due diligence, a satisfactory design, build, and operate proposal from B&E, confirmation of budget for Project, and the approval of the Veolia NA Zone Committee. Further, Veolia's obligation to proceed with the Transaction will also be subject to these conditions: (1) the negotiation and consummation of a definitive Development Agreement with City; (2) negotiation and execution of all other agreements required for this Project between Veolia, EPC, City, and B&E; (3) agreement with the interconnecting pipeline or utility; (4) absence of material adverse change affecting the Project; (5) obtaining all required third-party and regulatory approvals and consents for the Project; and (6) an enforceable funding commitment or grant from the California Energy Commission in an amount of no less than \$2,249,322. The obligation of



City to enter into legally binding agreements and implement the Transaction will be subject to approval by the City Council.

5. Construction Schedule

Once the Development Agreement and other necessary agreements are executed, Veolia and its EPC intends to immediately begin the permitting process which is expected to take no longer than 180 days. EPC agrees to expeditiously proceed with the permitting process. Once the EPC obtains the necessary final permits, it will commence the engineering, procurement, and construction of the Project (including the installation of the collection system and the gas processing facility). EPC will provide City a construction schedule as part of the Development Agreement which will delineate the permitting and construction milestones in more detail.

6. Dispute Resolution

Disputes between the parties arising from the Development Agreement, or other agreements involving City, will be resolved using a staged dispute resolution procedure consisting of (1) negotiations between decision-makers for a period no longer than 90 days; (2) non-binding mediation to be scheduled no longer than 90 days after negotiations end; and (3) binding arbitration to be scheduled no longer than 90 days following mediation. The parties shall cooperate in scheduling and arranging any such dispute resolution procedures.

7. Confidentiality

This LOI is submitted on the basis that Veolia and City will keep it confidential and not disclose the existence or terms to anyone other than Veolia, City and their respective representatives. Veolia acknowledges and agrees that the City is subject to the California Public Records Act and, in the absence of an applicable exemption, may be required to disclose information that the parties intend to be confidential. The parties intend that the Project is, and remains subject to further investigation and deliberation.

8. Additional Provisions

City's right and obligation to manage the Plant in compliance with the law and its business interests shall take precedence over Veolia's interest in maximizing the amount of gas extracted from the Plant for energy usage, but in such an event compensation to City would require proportional adjustment.

This LOI and the proposed terms contained herein does not constitute a formal and binding offer and it does not create any legal rights or obligations between us or any obligation to proceed with the Transaction or negotiations. It is intended that any and all legal rights and obligations between City and Veolia will come into existence only when a definitive Development Agreement is executed and delivered by both parties.

9. Conclusion



This preliminary non-binding LOI reflects certain terms and conditions upon which Veolia and City are prepared to pursue the Transaction, but is not itself intended to constitute a legally binding contract or commitment with the exception of Section 3 "180-Day Exclusivity Period" above, which is intended to be binding on City and Veolia. This LOI summarizes the preliminary understanding of the parties with respect to the terms and conditions under which they would contemplate entering into the Definitive Agreement and any other related agreements. Upon execution of this LOI, the City will in good faith immediately begin the process of evaluation to determine its interest in entering into a definitive agreement with Veolia, and Veolia agrees to provide the necessary support to carry out this evaluation process.

We are excited about this opportunity, as it fits well with our strategic growth plan, and we intend to make every effort to complete the proposed Transaction in a timely and expeditious manner. This Letter will expire at 5:00 p.m. (U.S. Pacific Time) on **September 10, 2015**, unless executed by you or extended by us in writing prior to such date.



We trust that the terms reflected in this LOI are acceptable to City. If you agree with the foregoing, please affix your signature in the space provided below and return this letter to my attention. Thank you and we look forward to working together.

Very truly yours,

By: _____

Name: _____

Title: _____

Accepted and Agreed:

By: _____

Name: _____

Title: _____