

## DOCKETED

<b>Docket Number:</b>	08-AFC-09C
<b>Project Title:</b>	Palmdale Energy Project (Formerly Palmdale Hybrid Power Plant) - Compliance
<b>TN #:</b>	211174
<b>Document Title:</b>	Palmdale Energy LLC's Revised Emissions Offset Package
<b>Description:</b>	N/A
<b>Filer:</b>	Marie Fleming
<b>Organization:</b>	DayZen LLC
<b>Submitter Role:</b>	Applicant Representative
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**ATMOSPHERIC DYNAMICS, INC**  
 Meteorological & Air Quality Modeling

April 21, 2016

Mr. Chris Anderson  
 Antelope Valley Air Quality Management District  
 43301 Division Street, Suite 206  
 Lancaster, CA. 93535

**Re: Proposed Offsets for the Palmdale Energy Project and Removal of Confidentiality Requirements**

Dear Mr. Anderson:

Included with this cover letter is the Palmdale Energy Project (PEP) offset summary tables that are currently being reviewed for use on the project. Specifically, we have included detailed information with regards to the proposed use of emission reduction credits (ERCs) for both NO<sub>x</sub> and VOCs. The details include the dates of the offset creation, approval dates, and SIP approved RACT rules and adjustments that apply or would apply to the offset at the time of use for both NO<sub>x</sub> and VOCs. This information is included as an attachment to this cover letter.

With this submittal, we are removing the confidentiality designation of the ERCs. As such, the applicant will no longer request that this information be treated as confidential data. Additionally, PEP will no longer propose to use NO<sub>x</sub> ERCs from the San Joaquin Valley Air Basin nor will they utilize inter-pollutant trades for ozone precursors of NO<sub>x</sub> and VOCs per AVAQMD Rule 1309(g). The applicant, under the California Environmental Quality Act (CEQA), will however, propose mitigating emissions of SO<sub>2</sub> through PM10 offsets.

The submittal of the detailed ERC information should allow both the AVAQMD to independently verify that the issuance of emission reduction credits by SJVAPCD and the Mojave Desert Air Quality Management District (MDAQMD) meets USEPA criteria of being real, quantifiable, permanent, surplus and federally enforceable. The proposed VOC ERCs have already been RACT adjusted pursuant to SIP approved rules. AVAQMD may further adjust the VOCs at the time of use. The NO<sub>x</sub> ERCs will also be RACT adjusted as required by AVAQMD rules and regulations. Even with the additional RACT adjustment, as applicable, there remains sufficient ERCs to cover the requirements of PEP. Table 1 lists the amounts of ERCs, based on the appropriate offset ratio, for both NO<sub>x</sub> and VOCs.

<b>TABLE 1 OFFSETS/MITIGATION PROPOSED FOR PEP</b>					
Emission Reduction Credits - TPY					
	<b>PM<sub>10</sub></b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>2</sub></b>	<b>CO</b>
AVAQMD Offset Trigger Thresholds	15	25	25	25	NA
Facility PTE <sup>1</sup>	81.01	51.64	139.99	11.39	351.09
AVAQMD Offset Ratio	1:1	1.3:1	1.3:1	1:1	1:1
Total Offsets Required	81.01	67.13	181.99	0	0



Total Mitigation Required at 1.5:1 Ratio from ERC Transfers > 15 Miles from AVAQMD Boundary	0	77.46	209.99	0	0
<sup>1</sup> Values derived from Section 2 in the PSD application. <sup>2</sup> Although the proposed facility is being permitted for full operations, the facility will be operated such that the current level of mitigation credits are not exceeded. As additional mitigation credits are obtained the facility will increase operations to comply with the new level of credits (on an annual basis).					

With the data included with this cover letter, the project owner hopes to demonstrate to the satisfaction of the EPA, AVAQMD and the CEC and that adequate emission reduction credits are available for sale and can be purchased prior to start of construction of the project. Specific to the EPA comments on the PDOC, the project emissions of 139.99 and 51.64 tons per year of NO<sub>x</sub> and VOC, respectively, shall be offset at a ratio of 1.3 to one for ERC's within the MDAB or areas in the SJVAB that are within 15 miles of the AVAQMD western boundary. If ERCs are obtained from locations greater than 15 miles from the western portion of the AVAQMD, an offset ratio of 1.5 to one shall be utilized for those offsets.

We look forward to working with you. If you have any questions, please do not hesitate to call me at (831) 620-0481. Thank you for your attention in this matter.

Sincerely,

**Atmospheric Dynamics, Inc.**



Gregory S. Darwin

cc:

Tom Cameron, Palmdale Energy, LLC  
 Thomas Johns, Palmdale Energy, LLC  
 Docketts (CEC)

Attachment



**Attachment**  
**VOC and NO<sub>x</sub> Emission Reduction Credits**



## Palmdale Energy Project VOC Emissions Reduction Credit Information Summary

Table 1 – VOC ERC Certificate/Facility Key (San Joaquin Valley APCD)

Current Owner	Current ERC Certificate	APCD Reduction Project ID	How Were ERCs Generated	Approximate Date ERCs Approved
<b>Vector Environmental</b>	S-4039-1	S-1100008	Approved equipment shutdown	Dec 2010
<b>Crimson Resource Management</b>	S-3387-1	S-1052797	Approved equipment shutdown/replacement	NA/2005
<b>Calpine</b>	S-3261-1	S-1045045	Approved equipment shutdown	Feb 2006
<b>Dart Container Corporation</b>	C-555-1	C-1010009	Approved equipment shutdown	Jan 2001
<b>Martin Anderson</b>	C-1051-1	C-1074595	Approved equipment shutdown	Feb 2010
<b>Anderson Rack Systems - Hannibal Industries</b>	N-950-1	N-1062909	Approved equipment shutdown	Mar 2011
<b>Heck Cellars</b>	S-3442	S-1075911	Over control	Sept 2010
<b>Creations Mfg., Inc.</b>	C-1686	1031718	Approved shutdown	Jan 2004
<b>Silgan Container Corp.</b>	C-1208-1	C-1123501	Approved shutdown	Mar 2013
<b>Silgan Container Corp.</b>	N-431-1	N-1040409	Approved shutdown	Nov 2008
<b>BlueScope BNA, Inc.</b>	1094294-71-1	N-1094249	Approved shutdown	Mar 2010
<b>Malibu Boats</b>	N-942-1	1101305	Approved shutdown	Jan 2012

Table 2 – District Analysis Determinations

ERC Certificate	Timely Filing	Emissions Reductions Approved as Bankable ERCs				
		Real	Quantifiable	Enforceable	Permanent	Surplus
<b>S-4039-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>S-3387-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>S-3261-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>C-555-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>C-1051-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>N-950-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>S-3442</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>C-1686</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>C-1208-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>N-431-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>1094294-71-1</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>N-942-1</b>	Yes	Yes	Yes	Yes	Yes	Yes

The SJVAPCD (District’s) strategy for attaining the 2008 8-hour ozone standard builds upon adopted strategies from previous District plans and strategies implemented by the California Air Resources Board (ARB). The District strategy is a multi-faceted approach that uses a combination of conventional and innovative control strategies. This comprehensive strategy includes regulatory actions; incentive programs; technology advancement programs; policy and legislative activities; public outreach, participation, and communication; and other innovative strategies. As supported by extensive photochemical modeling conducted by ARB, the significant emissions reductions achieved by this comprehensive strategy in the coming years are projected to bring the Valley into attainment of the 2008 8-hour ozone standard by the 2032 deadline.

The SJVAPCD current rules and regulations reflect technologies and methods that are far beyond minimum required control levels. The aggressive regulations already adopted under previous District attainment plans (*2007 Ozone Plan, 2008 PM2.5 Plan, 2012 PM2.5 Plan, 2013 Plan for the Revoked 1-hour Ozone Standard, 2015 Plan for the 1997 PM2.5 Standard*) serve as the basis for this *2016 Ozone Plan*. These adopted regulations will reduce



emissions of oxides of volatile organic compounds (VOCs) as they are fully implemented over the upcoming years, contributing to the Valley’s progress toward attainment of the 2008 8-hour ozone standard.

EPA prefers reliance on control measures that have already been adopted over ones that have yet to be approved. EPA has gone so far as to disapprove attainment plans that demonstrated an over-reliance on unapproved measures. As such, the recognition of recently adopted and implemented District and ARB control measures is an important component of this plan and is listed as a SIP approved control plan in the table below.

The following Table 3 identifies the adopted District rules for source categories that would be used for VOC offsets for achieving new emissions reductions in and after 2009. However, even pre-2012 emissions reductions are contributing and will continue to contribute to the Valley’s progress toward attainment.

Table 3 – ERC Quantification Determinations

ERC Certificate	District Approved Emissions Factors Used	District Approved Quantification Methods Used	Approximate Date ERCs Approved	RACT Adjustment Potentially Required*	Adopted/Amended Date SIP Approval Date
<b>S-4039-1</b>	Yes	Yes	Dec 2010	VOC – Rule 4682* Yes	12/15/11 9/20/12
<b>S-3387-1</b>	Yes	Yes	NA/2005	VOC – none	NA
<b>S-3261-1</b>	Yes	Yes	Feb 2006	VOC – Rule 4606* Yes	10/16/08 1/10/12
<b>C-555-1</b>	Yes	Yes	Jan 2001	VOC – Rule 4691 No	12/17/1992 1/10/12
<b>C-1051-1</b>	Yes	Yes	Feb 2010	VOC – Rule 4682* Yes	12/15/11 9/20/12
<b>N-950-1</b>	Yes	Yes	Mar 2011	VOC – Rule 4603 No	9/17/09 1/10/12
<b>S-3442</b>	Yes	Yes	Sept 2010	VOC – Rule 4695 No	9/17/09 1/10/12



<b>C-1686</b>	Yes	Yes	Jan 2004	VOC – Rule 4606 Yes	10/16/08 1/10/12
<b>C-1208-1</b>	Yes	Yes	Mar 2013	VOC – Rule 4604 No	9/20/07 1/10/12
<b>N-431-1</b>	Yes	Yes	Nov 2008	VOC - none	-
<b>1094294-71-1</b>	Yes	Yes	Mar 2010	VOC – Rule 4603 No	9/17/09 1/10/12
<b>N-942-1</b>	Yes	Yes	Jan 2012	VOC – Rule 4684 No Rule 4653 No Rule 4663 No	8/18/11 2/6/12 9/16/10 2/13/12 9/20/07 1/10/12

***\*Pursuant to the “Surplus” analysis in these district files, the ERCs were RACT adjusted at the time of banking. The column above indicates if any further RACT adjustments may be required due to rule adoptions or amendments since the time of issuance. The previous and current RACT rule is cited for reference as well as the last amendment date and SIP approval date.***

Rule 4603 Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts

Rule 4604 Can and Coil Coating Operations

Rule 4606 Wood Products and Flat Wood Paneling Products Coating Operations

Rule 4653 Adhesives and Sealants

Rule 4663 Organic Solvent Cleaning, Storage, and Disposal

Rule 4682 Polystyrene, Polyethylene, and Polypropylene Products and Manufacturing

Rule 4684 Polyester Resin Operations

Rule 4691 Vegetable Oil Processing Operations

Rule 4695 Brandy and Wine Aging Operations





Table 4 – VOC ERC Amounts Generated from Identified Projects

ERC Project ID	ERC Pollutant	1 <sup>st</sup> Qtr, lbs	2 <sup>nd</sup> Qtr, lbs	3 <sup>rd</sup> Qtr, lbs	4 <sup>th</sup> Qtr, lbs
S-4039-1	VOC	71,653	86,926	80,406	9,672
S-3387-1	VOC	23,063	20,161	19,126	13,979
S-3261-1	VOC	5,294	5,812	4,730	4,995
C-555-1	VOC	112,929	104,976	40,935	69,030
C-1051-1	VOC	8,699	12,348	6,585	90
N-950-1	VOC	7,335	7,335	7,335	7,335
S-3442	VOC	10,000	10,000	10,000	10,000
C-1686	VOC	9,986	9,206	9,494	9,041
C-1208-1	VOC	4,279	3,921	3,042	3,166
N-431-1	VOC	5,103	3,464	3,573	3,865
1094294-71-1	VOC	5,404	6,473	10,921	8,632
N-942-1	VOC	13,753	22,879	14,803	14,093
<b>Quarterly Totals, tons</b>		<i>138.75</i>	<i>146.75</i>	<i>105.48</i>	<i>76.95</i>
<b>Annual Totals, tpy</b>			<b>497.9</b>		

See the attached district analysis files for more detailed data.

Anticipated Emissions Reductions Due to Changes in RACT Rules

1. For the ERC certificates subject to changes in Rule 4682 (S-4039-1, and C-1051-1), the anticipated changes to banked emissions would be insignificant. Pursuant to the Fact Sheet for the proposed 2011 amendments, the District stated that “the proposed amendments will not result in any significant additional emissions reductions and the costs of the proposed amendments are anticipated to be minimal with little or no socioeconomic impacts.” Therefore, at this time, no additional RACT reductions in banked VOC emissions per Rule 4682 are anticipated.
2. For certificate S-3261-1, note the following:
  - a. The surplus analysis for this certificate does not state that Rule 4606 is an applicable rule, but rather that historical actual emissions were derived from approved historical data, compliance with the permit conditions, and compliance with Rule 4606.



- b. At the time of adoption and the last amendment to Rule 4606, the District had no facilities subject to Rule 4606, and the rule adoption and amendments were undertaken so that if such a facility were to propose operations within the District, the rule would then apply, and control VOC emissions to RACT levels at a minimum.
  - c. Rule 4606 apparently contained coating VOC limits and requirements that were thought to be similar to the operations conducted at the facility in question.
  - d. The District states in the analysis that the coating operations are in compliance with the rule (see item “e” below).
  - e. The permits to operate for the various coating and solvent operations have VOC limits established via Rule 2201 (NSR), not Rule 4606. The only permit conditions that contain a Rule 4606 VOC limit are those which address the use of clean up and surface preparation solvents. Therefore, the primary VOC limits were established under Rule 2201, not Rule 4606, and as such, we would not expect that the current banked emissions under this certificate would experience any reductions due to changes in Rule 4606 that occurred after the emissions certificate was issued. Based on our review, the only emissions reductions or adjustments would be from the lowering of the VOC content limits for cleanup and surface preparation solvent use. Per the District analysis, butyl-cellosolve is the only solvent used for cleanup and surface prep, and the VOC emissions from this solvent represented approximately 2.2% of the average monthly VOC emissions. The latest version of Rule 4606 requires a 50% reduction in VOC content from the cleanup and surface prep solvents. This reduction would lessen the solvent emissions contributions on a average monthly basis to 1.1%. This approximate reduction is insignificant as applied to the current ERC certificate. Total VOC ERCs for this certificate are 20831 lbs, and a reduction of 1.1% would result in an adjusted value of 20602 lbs.
3. Certificate C-1686 may need to be re-evaluated for any changes that have occurred to Rule 4606 after the date of the creation of the ERCs, i.e., specifically the latest version of the rule dated 10/16/08. See item 2(e) above.



## Palmdale Energy Project NO<sub>x</sub> Emissions Reduction Credit Information Summary

Table 1 – NO<sub>x</sub> ERC Certificate/Facility Key (Mohave Desert AQMD)

Current Owner	Current ERC Certificate	APCD Reduction Project ID	How Were ERCs Generated	Approximate Date ERCs Approved
NRG California South LP	0102	Coolwater Gen Station	Approved Shutdown	6/29/15
CalPortland Cement	0103	Kiln	Approved Shutdown	2/1/08

Table 2 – District Analysis Determinations

ERC Certificate	Timely Filing	Emissions Reductions Approved as Bankable ERCs				
		Real	Quantifiable	Enforceable	Permanent	Surplus
0102	Yes	Yes	Yes	Yes	Yes	Yes
0103	Yes	Yes	Yes	Yes	Yes	Yes

Table 3 – ERC Quantification Determinations

ERC Certificate	District Approved Emissions Factors Used	District Approved Quantification Methods Used	Approximate Date ERCs Approved	RACT Adjustment Potentially Required	Adopted/Amended Date SIP Approval Date
0102	Yes	Yes	June 2015	NO <sub>x</sub> -	See note
0103	Yes	Yes	Feb 2008	NO <sub>x</sub> – Rule 1161	3/2002 (* )



**Note: AQMD prohibitory rules such as Rules 406, 407, 409, 474, 475, and 476 were adopted or last amended in the 1977 to 1997 timeframe. Source specific rules such as Rules 1157 and 1158 were last amended in 1997.**

**Rule 1159 (Combustion Turbines) was last amended in Sept 2009, but it is unlikely that this rule applied to the cement kiln at the time of shutdown.**

**Rule 1404 indicates that adjustments to proposed ERCs, i.e., RACT, shall be made by the AQMD as part of its ERC application review.**

**Rule 1402 states that “Subsequent changes in District Rules or Regulations to require a type of emission reduction which has previously been banked shall not reduce or eliminate such ERC.”**

Table 4 – NO<sub>x</sub> ERC Amounts Generated from Identified Projects

ERC ID	ERC Pollutant	TPY
0102	NO <sub>x</sub>	240
0103	NO <sub>x</sub>	854
<b>Annual Totals, tons</b>		<b>1094</b>

