Offset Packages for Licensed Power Plant Projects

Delta Energy Center:
All banked ERCs
- **NOx:** 151.3 tons
- **ROG:** 273.8 tons
- **PM10:** 376.7 tons
  - 280.4 tons SO$_2$ – interpollutant trade

High Desert Power Plant:
- **NOx:** Offset interbasin and interpollutant, total liability of 267 tpy at 1.3:1 offset ratio
  - 134 tpy NOx ERC from Southern California International Airport (base closure of George Air Force Base), the rest covered by interbasin offsets identified in VOC description at 1.6:1 interpollutant offset ratio and the 1.3:1 pollutant/interbasin offset ratio mentioned above giving a total 2.1:1 offset ratio
- **VOC:** Interbasin, total liability of 168 tpy at 1.3:1 offset ratio
  - 151 tpy VOC ERC from Southern California International Airport (base closure of George Air Force Base), interbasin offsets used for both NOx and VOC liabilities
  - 229 tpy VOC ERC from General Motors in Van Nuys
  - 73 tpy VOC ERC from Mobil Oil Corporation in Torrance
  - 43 tpy VOC ERC from Chemoil Refining in Carson
  - 118 tpy VOC ERC from Crown Cork and Seal in Los Angeles
  - 40 tpy VOC ERC from BASF Corp. in Orange Co.
- **PM10:** Total liability of 234 tpy at 1:1 pollutant offset ratio
  - Unbanked emission reductions from road paving
    - 14 tpy ERC from Southern California International Airport
    - 262 tpy emission reduction from road paving at City of Adelanto (0.7 miles of road)
- **SOx:** Did not trigger offsets
- **CO:** Exempt using MDAQMD Rule 1305(D)

La Paloma:
All banked ERCs
Within 15 miles: Aera Energy LLC in Belridge area
Outside 15 miles: San Joaquin Valley Energy Partners in Chowchilla and El Nido; GWF Power Systems in Mendota; and Newark Sierra PaperBoard in Stockton
- **NOx:** 278.2 tpy
  - 47.0 tpy NOx ERCs within 15 miles supplied at 1.2:1;
  - 364.7 tpy NOx ERCs within 15 miles supplied at 1.5:1;
- **VOC:** 39.7 tpy
  - 60 tpy VOC ERCs within 15 miles provided at 1.2:1
• **PM10**: 284.4 tpy;
  - 50 tpy PM10 ERCs within 15 miles supplied at 1.2:1;
  - 49.3 tpy PM10 ERCs outside 15 miles supplied at 1.5:1;
  - Portion of PM10 offset liability (209.9 tpy) covered with NOx ERCs supplied at an interpollutant offset ratio of 2.22:1
  - 508 tpy NOx ERCs at 2.42:1 (overall ratio)
  - 555 tpy NOx ERCs at 2.72:1 (overall ratio)
• **SOx**: 60.0 tpy
  - 72.0 tpy SOx ERCs within 15 miles supplied at 1.2:1
• **CO**: Exempt from offsets using provisions of Rule 2201, Section 4.2.1.1

**Los Medanos Energy Center:**
• **NOx**: 176.18 tpy (153.2 tpy at 1.15:1 ratio)
  - 73.62 tpy NOx ERC #518 from Owens-Brockway
  - 215.73 tpy NOx ERC from Owens-Brockway
• **CO**: None required
  - Annual emissions limited to 487.5 tpy (100 tpy PSD offset threshold)
• **VOC**: 112.25 tpy (97.61 tpy at 1.15:1 ratio)
  - 10.78 tpy VOC ERC from Owens-Brockway
  - 144 tpy VOC ERC from Quebecor Printing
• **SOx**: None required
  - Annual emissions limited to 39.86 tpy (100 tpy PSD offset threshold)
• **PM10**: 123.55 tpy (123.55 tpy at 1:1 ratio)
  - 42.8 tpy PM10 ERC #518 from Owens-Brockway
  - 55.33 tpy PM10 ERC from Owens-Brockway
  - 46.3 tpy SOx ERC #518 from Owens-Brockway (4:1 interpollutant ratio)
  - 57.2 tpy SOx ERC from Owens-Brockway (4:1 interpollutant ratio)

**Moss Landing:**
• **NOx**: 420.64 tpy
  - 20.169 tpy from Firestone Business Park at 1.2:1
  - 1.268 tpy from Estate of Robert E. McDonald III
  - 52.622 tpy from PG&E at 1.15:1
  - >500 tpy Confidential/Pending
• **VOC**: 354.197 tpy
  - 187.650 tpy from Firestone Business Park at 1.2:1
  - 18 tpy from Firestone Tire at 1.2:1
  - 0.283 tpy from Estate of Robert E. McDonald III at 1.2:1
  - 1.973 tpy from PG&E at 1.5:1
  - 300 tpy from Quebecor at 2.0:1
  - >30 tpy Confidential/pending
• **SOx**: 90.743 tpy
  - 2.556 from Firestone Business Park at 1.2:1
  - 0.846 PG&E at 1.5:1
  - >150 tpy Confidential/pending
• **PM10**: 274.883 tpy
  - 11.78 tpy from Firestone Business Park at 1.2:1
  - 0.455 tpy from Estate of Robert E. McDonald III at 1.2:1
  - 4.228 tpy from PG&E at 1.5:1
  - >300 tpy Confidential/pending

Note: Interpollutant ratios expected are:
VOC:NOx 1.0:1.0
SOx:PM10 1.0:1.0

**Sutter Power Plant:**
• **NOx**: 209.6 tons:
  - 22.5% agricultural derived ERCs; 77.5% from stationary shutdowns
• **ROG**: 88.5 tons:
  - 65.5% agricultural derived; 34.4% from stationary shutdowns
• **PM10**: 103 tons:
  - 64.9% agricultural derived; 35.1% from stationary shutdowns
\textbf{Offset Packages for Proposed Power Plant Projects}

\textbf{Blythe:}
\begin{itemize}
\item **NOx**: 219 tpy
  - 26.7 tpy from Bio-Gen Plant Closure
  - 300 tpy confidential Company (pending?)
\item **VOC**: 96.8 tpy
  - 3.1 tpy from Bio-Gen Plant Closure
  - Remainder from NOx for VOC interpollutant trading
\item **PM10**: 269 tpy
  - 269 tpy City of Blythe paving of local unpaved roads (pending?)
\end{itemize}

\textbf{Contra Costa:}
\begin{itemize}
\item **NOx**: 200.5 tpy
  - 299 tpy owned by SeCal (proponent)
\item **VOC**: 153.6 tpy
  - 5.5 tpy owned by SeCal (proponent)
  - Remainder will be purchased from the bank
\item **PM10**: 1124.1 tpy
  - 17 tpy owned by SeCal (proponent)
  - Remainder may be from SO$_2$ credit at a 3:1 or 4:1 ratio
\item **SO$_2$**: 48.5 tpy
  - 158 tpy owned by SeCal (proponent)
\end{itemize}

\textbf{Elk Hills:}
All banked ERCs
\begin{itemize}
\item **NOx**: 159.0 tpy
  - 132.5 tpy Occidental of Elk Hills
\item **VOC**: 26.7 tpy
  - 22.2 tpy Occidental of Elk Hills
\item **SO$_2$**: 34.5 tpy
  - 28.7 tpy Chevron Pipeline
\item **PM10**: 385.7 tpy
  - 159.4 tpy NOx ERCs from Occidental of Elk Hills (2.42:1 ratio)
\end{itemize}

\textbf{Metcalf Energy Center:}
\begin{itemize}
\item **NOx**: 212.75 tpy
  - Offset ratio of 1.15:1
  - 1.31 tpy from Folgers Coffee
  - 6.42 tpy from Frito Lay
  - 32.24 tpy from Glorietta Foods
  - 6.5 tpy from Raisch Products
  - 166.28 tpy of VOCs from Quebecor Facility at 1:1 interpollutant ratio
\end{itemize}
• **VOC**: 28 tpy  
  - Offset ratio of 1:1  
  - 28 tpy from Quebecor Facility  
• **PM10**: 91.3 tpy  
  - Offset ratio of 1:1  
  - 7.7 tpy from Folgers Coffee  
  - 7.64 tpy from Frito Lay  
  - 1.54 tpy from Glorietta Foods  
  - 12.33 tpy from Raisch Products  
  - 124.2 tpy of VOCs from Quebecor Facility at 2:1 interpollutant ratio

**Morro Bay Power Plant:**  
• **NOx**: 292.3 tpy  
  - 245.7 tpy NOx ERCs from shutdown of existing utility boilers  
  - 8.19 tpy NOx ERCs held by applicant Duke Energy  
  - 22.92 tpy NOx ERCs from Chevron  
  - 15.49 tpy VOC ERCs from Chevron at 1:1 interpollutant ratio  
• **CO**: 917.4 tpy  
  - 918.3 tpy CO ERCs from shutdown of existing utility boilers  
  - 2.62 tpy CO ERCs from Chevron  
• **VOC**: 71.7 tpy  
  - 60.9 tpy VOC ERCs from shutdown of existing utility boilers  
  - 32.89 tpy VOC ERCs from Chevron  
• **SO2**: 23.0 tpy  
  - 6.64 tpy SO2 ERCs from shutdown of existing utility boilers  
  - 194.93 tpy SO2 ERCs held by applicant Duke Energy  
  - 1.23 tpy SO2 ERCs from Chevron  
• **PM10**: 203.2 tpy  
  - 84.2 tpy PM10 ERCs from shutdown of existing utility boilers  
  - 17.22 tpy PM10 ERCs held by applicant Duke Energy  
  - 1.91 tpy PM10 ERCs from Chevron  
  - 99.86 tpy SO2 ERCs held by applicant Duke Energy at 1:1 interpollutant ratio

**Mountainview Power Plant:**  
AFC does not specify source of offsets  
Offset package not in house but is at CEC as confidential ATT  
• **NOx**: 125.13 tpy  
  - Offset ratio 1:1  
  - Proposed to acquire RECLAIM Trading Credits (RTCs) for NOx  
• **VOC**: 73 tpy  
  - Offset ratio 1.2:1  
  - VOC ERCs total purchased 98.92 tpy from various companies  
• **SO2**: 29.93 tpy  
  - Offset ratio 1.2:1  
  - SO2 ERCs total purchased 137.79 tpy from various companies
• **PM10**: 224.84 tpy
  - Offset ratio 1.2:1
  - PM10 ERCs total purchased 225.75 tpy from various companies

• **CO**: 251.12 tpy
  - Offset ratio 1.2:1
  - CO ERCs total purchased 251.67 tpy from various companies

**Nueva Azalea Power Plant:**
Information taken from Application for Certification

• **NOx**: 56.4 tons
  - Offset ratio 1:1
  - Propose to acquire RECLAIM Trading Credits (RTCs) for NOx

• **CO**: None required
  - Annual emissions limited to 16.6 tpy (29 tpy offset threshold)

• **VOC**: None required
  - Annual emissions limited to 3.6 tpy (4 tpy offset threshold)

• **SOx**: None required
  - Annual emissions limited to 3.5 tpy (4 tpy RECLAIM offset threshold)

• **PM10**: 112.1 tons
  - Propose to acquire Emission Reduction Credits (ERCs) for PM10
  - Propose interpollutant trade of VOCs for PM10 at ratio of 3:1 (this would make the offsetting requirement 336.3 tons VOC)

Note: States use of using mobile source credits is being considered

**Otay Mesa:**

• **NOx**: Total liability of 120 tpy
  - NOx ERCs supplied at 1.2:1 distance ratio
  - VOC ERCs supplied at 2:1 interpollutant offset ratio x 1.2:1 distance ratio
  - Consisting of purchased ERCs and MERCs

• **VOC**: Not required

• **PM10**: Not required by district rules; however CEC is recommending some mitigation in their Final Staff Assessment.

• **SO₂**: Not required

**Pastoria Energy:**
Offsets will be purchased from banked ERCs

• **NOx**: 308.25 tpy (with 1.5:1 distance ratio)

• **CO**: Not required

• **VOC**: 181.95 tpy (with 1.5:1 distance ratio)

• **SO₂**: 63.45 tpy (with 1.5:1 distance ratio)

• **PM10**: 342.00 tpy (with 1.5:1 distance ratio)
  - NOx ERCs required at 2.22:1 interpollutant ratio + 1.5:1 distance ratio (total 2.72:1)
Potrero Power Plant Unit 7:
The applicant plans to satisfy the required offsets using a combination of banked ERCs and pollutant reductions from existing power plant activities on site (specific ERC information is "confidential").
- **NOx**: 178.4 tons per year (tpy)
  - Offset liability is 205.2 tpy (based on an offset ratio of 1.15 to 1)
- **POC** (precursor organic compounds): 49.1 tpy
  - Offset liability is 56.7 tons per year (based on an offset ratio of 1.15 to 1)
  *Credits for POC may be used to offset NOx emissions at a ratio of 1 to 1.
- **PM10**: 110.5 tpy
  - Offset liability is 110.5 tpy (based on an offset ratio of 1 to 1)
- **SOx**: Did not trigger offsets (offset threshold is 100 tpy - projected SOx emissions are 51.9 tpy)

Sunrise:
All banked ERCs
- **NOx**: 145.1 tpy
  - Some <15 miles away (1.2:1 ratio)
  - Some > 15 miles away (1.5:1 ratio)
- **VOC**: 10.0 tpy
  - ERCs < 15 miles away (1.2.1 ratio)
- **CO**: Not required
- **PM10**: 20.6 tpy
  - ERCs <15 miles away (1.2:1 ratio)
- **SOx**: 7.9 tpy
  - ERCs <15 miles away (1.2:1 ratio)

Three Mountain Power:
- Not required, but has agreed to provide anyway
- PM10 may come from Bank or road paving at 1:1 ratio

United Golden Gate Power Plant:
Phase I project is not subject to emission offset requirements under Bay Area Air Quality Management District rules.

Western Midway Sunset Power Plant:
- **NOx**: 137.45 tpy (using GE turbines) or 143.61 tpy (using Westinghouse turbines)
  - NOx offsets to be provided by actual emissions reductions (AERs) from retrofit of existing cogeneration units
- **VOC**: 41.99 tpy (using GE turbines) or 43.95 tpy (using Westinghouse turbines)
  - VOC offsets to be provided with ERCs from Aera Energy western Kern County heavy oil production stationary source
- **CO**: Not required
• **PM10**: 77.05 tpy (using GE turbines) or 77.23 tpy (using Westinghouse turbines)
  - PM10 offsets to be provided by NOx AERs and ERCs at 2.22:1 interpollutant ratio
• **SOx**: 30.54 tpy (using GE turbines) or 30.2 tpy (using Westinghouse turbines)
  - SOx offsets to be provided with ERCs from Aera Energy western Kern County heavy oil production stationary source

Note: Distance ratio of 1:1 is used for all offsets