

**DRA DATA REQUEST
DRA-SCG-044-MZX
SOCALGAS 2012 GRC – A.10-12-006
SOCALGAS RESPONSE**

**DATE RECEIVED: FEBRUARY 11, 2011
DATE RESPONDED: FEBRUARY 24, 2011**

Exhibit Reference: SCG-09, SCG-05

Subject: Sustainable SoCal Program

Please provide the following:

1. What are the four customer sites where SCG proposes to install BioEnergy units for the purpose of capturing raw biogas? (RKS-24)

SoCalGas Response:

SoCalGas has not selected the four customer sites at this point in time. SoCalGas is currently in the process of developing a short list of potential wastewater treatment plants that would qualify for the Sustainable SoCal Program.

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2. How were these sites selected? Provide a detailed explanation of the selection process including the selection criteria used. (If the sites have not yet been selected, provide the selection criteria that will be used).

SoCalGas Response:

As noted above, SoCalGas is currently in the process of developing a short list of potential wastewater treatment plants (WWTP) that would qualify for the Sustainable SoCal Program. The final four sites will be selected based on: 1) lowest estimated cost and 2) having some diversity amongst the four sites (location, volumetric biogas flow, etc). The selection criteria developed by SoCalGas is as follows:

1. The WWTP needs to have an onsite digester to produce the raw biogas.
2. The WWTP needs to have raw biogas volumes in the range of 200 to 600 standard cubic feet per minute (“scfm”).
3. The WWTP needs to be willing to sign a 10-15 year contract agreement allowing SoCalGas to own, operate and maintain the biogas conditioning system at their facility.
4. The WWTP shall provide SoCalGas, its employees, contractors, and agents access to the biogas facility to observe, monitor and inspect the biogas conditioning system.
5. The WWTP needs to have adequate space at their facility to host the biogas conditioning system.
6. There needs to be a SoCalGas pipeline in the general area of the WWTP that has adequate capacity to accept the biomethane
7. The WWTP is seeking a solution to make better use of their raw biogas (instead of flaring the raw biogas to the atmosphere for example).

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3. Is the capital cost breakdown in Attachment A to Mr. Stanford's workpapers (RKS-CWP-257, 258) based on estimates for a particular site or on other information? (For example, are the Pipeline Extension to Utility Pipeline estimates based on specific site or are they an average based upon general site characteristics?)

SoCalGas Response:

The capital cost breakdown shown in Attachment A is based on general site characteristics and are considered to be an “estimated average cost” per site.

Response prepared by: Tuong Tran

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4. Does SCG plan on asking the sites to contribute to the costs of the BioEnergy units?

SoCalGas Response:

No, SoCalGas does not plan on asking the sites to contribute to the costs of the biogas conditioning systems. Currently, a small to mid size wastewater treatment plant can flare their biogas to the atmosphere with minimal cost to the facility owner/operator. The Sustainable SoCal Program proposes that all of the benefits of the biomethane and GHG credits go to SoCalGas ratepayers, and thus believes it unlikely the WWTP would contribute to the cost of the biogas conditioning system.

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5. On page RKS-CWP-255 of Mr. Stanford's workpapers, he states, "In addition this gas volume will result in approximately \$160,000 annually in cost avoidance due to GHG credits." Please provide the calculation used to formulate this statement.

SoCalGas Response:

Please see our response to DRA-SCG-006-MZX, Question 17. Included in the response is an attachment which includes the GHG credit calculation.

Response prepared by: Tuong Tran

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6. Please reconcile the \$160,000 figure in Mr. Stanford's workpapers with the \$130,000 figure referenced in Ms. Wright's testimony. (GAW-91)

SoCalGas Response:

The \$160,000 figure in Mr. Stanford's workpapers should be corrected/ updated to show \$130,000. As SoCalGas was developing the Sustainable SoCal Program, we originally considered \$36/ton of CO₂ as the cap and trade value which provides an estimated \$160,000 in annual GHG credits. The cap and trade value was then revised to \$30/ton of CO₂ and is consistent with the 2009 MPR model. With a cap and trade value of \$30/ton of CO₂, the resulting annual GHG credits are \$130,000. The update was made to Ms Wright's testimony but was mistakenly not made to Mr. Stanford's workpapers.

Response prepared by: Tuong Tran

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7. What are the disadvantages of Pressure Swing Adsorption (PSA) technology? (RKS-25)

SoCalGas Response:

The disadvantage of the PSA technology is lower efficiency for methane recovery than other technologies. It is typically in the range of 90% to 96%. Other technologies can recover 99% +. However, it is the simplest of the proven gas processing technologies for the purpose of biogas purification. Other proven technologies evaluated include absorption using amine based solvents, membranes and cryogenic separation.

Response prepared by: Bob Carpenter

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8. What percentage of the “approximately 20 million standard cubic feet per day (“Mmscfd”)” of the “the biogas market potential for waste water treatment facilities in SCG and SDG&E service territories” is comprised by producer sites having volumes from 200 to 600 scfm? (GAW-90)

SoCalGas Response:

SoCalGas estimates that roughly 8% of the approximate 20 million standard cubic feet per day (scfd)¹ is from producer sites having volumes in the range of 200 to 600 scfm. The 20 million scfd total includes the four largest wastewater treatment plants within SCG and SDG&E service territories (Hyperion, San Diego Point Loma, Orange County Sanitation District and LA County Sanitation District). When these four large wastewater plants are removed from the approximate 20 million scfd total, SoCalGas estimates that 24% of the remaining 7 million scfd is from producer sites having volumes in the range of 200 to 600 scfm.

¹ Based on data from EPA (http://www.energy.ca.gov/research/renewable/biomass/anaerobic_digestion/data.html) and using a conversion factor of 8.26 scfm/MGD.

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9. What is the current source of the gas used for company facilities and CNG fleet vehicles?

SoCalGas Response:

The gas used for company facilities and CNG fleet vehicles is purchased as part of the SoCalGas' core portfolio, which is 100% natural gas.

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10. How much does it cost per million cubic feet of gas (mmcf) to produce “pipeline quality biogas from digester ‘raw biogas’ generated from small to mid size wastewater treatment plants”? (GAW-89) What percentage of the current average cost of gas purchased by SCG is the cost of producing pipeline quality biogas from digester raw biogas?

SoCalGas Response:

As provided in Table GAW-32, the estimated cost to produce pipeline quality biogas from digester raw biogas (generated from small to mid size wastewater treatment plants) and inject it into SoCalGas’ pipeline network is \$14.31/MMBtu. Using the conversion factor of 1 MMCF = 1,000 MMBtu, the resulting cost is \$14,310 per million cubic feet of pipeline quality gas.

Currently, SoCalGas does not purchase any biomethane for our core gas portfolio, so 100% of SoCalGas’ core gas portfolio is natural gas.

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11. What is SCG's annual expenditure on bringing raw biogas up to pipeline quality gas?

SoCalGas Response:

SoCalGas does not currently have any commercial biogas conditioning systems in operation, thus the annual expenditure for bringing raw biogas up to pipeline gas quality is zero.²

² SoCalGas recently commissioned the Biogas Upgrading, Monitoring and Analysis RD&D Project at the Hale Avenue Resource Recovery Facility in Escondido, California and the demonstration project is expected to last for 6-12 months.