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California Air Resources Board
1001 I Street
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RE: July 30, 2012 Workshop on Leakage Studies

Dear Board Members:

San Diego Gas and Electric Company (SDG&E) and Southern California Gas Company (SoCalGas) appreciate the opportunity to submit these written comments concerning proposed leakage studies and leakage monitoring, topics of the July 30, 2012 workshop. Leakage in the form of a shift of business location outside California does nothing to reduce greenhouse gases (GHG) and at the same time may substantially impact the California economy as jobs shift with industrial production. SDG&E and SoCalGas are particularly concerned that smaller emissions-intensive businesses subject to trade exposure, businesses which should receive allowances or allowance revenues from electric and natural gas utilities in the second compliance period, may be overlooked. The trade exposure study should look at a broader range of industries than just the industries already identified by ARB, which only focused on industries with businesses that produced more than 10,000 metric tons (MT) of direct emissions.¹ To the extent that electricity is not produced solely with renewable energy, emissions intensity is directly linked to energy intensity. As a result, the trade exposure study should be expanded to include all energy intensive businesses.

Per Board Resolution 11-32, ARB is initiating studies to analyze the ability of the agricultural sector, including food processors, to pass on regulatory costs to consumers. In addition, ARB staff will recommend to the Board changes to the leakage risk determinations and allowance allocation approach prior to allocation for the second compliance period based on these leakage studies. The proposed studies seem narrow in consideration of emission-intensive trade-exposed businesses by ignoring those businesses that may use a significant amount of electricity but have direct emissions less than 10,000 MT. The fact that SB 1018 provides an allocation of electric sector allowances to emissions-intensive, trade-exposed industries suggests that considering only firms with more than 10,000 metric tons of direct emissions may lead to faulty conclusions as to which business should be provided allowances to avoid leakage. Because of the potential importance to the vitality of the California economy, the ARB leakage studies should start from a premise that an industry is subject to leakage unless proven otherwise through the leakage studies. ARB needs to cast a broader net in search of trade-exposed businesses in these leakage studies to avoid unintended leakage. The attached table shows that roughly two-thirds of firms in manufacturing in southern California (SDG&E and

¹ Direct emissions are due to onsite combustion. Indirect emissions are those associated with the use of electricity that occur offsite.

SoCalGas service areas) with less than 25,000 MT in direct emissions may be excluded from receiving an allowance allocation based on ARB's current definition in Table 8-1 of the regulation.

Trade Exposure

The study by the University of California proposes to address trade exposure as an input to studies of leakage. The effort would create an econometric model that would try to control for factors related to production in an industry and estimate the trade responsiveness of the firms in the industry to various changes in operating costs. While the study may produce useful results, it appears to be narrowly focused on the industries already identified by ARB. SDG&E and SoCalGas would hope the study could identify additional emission-intensive businesses subject to trade exposure that may have less than 10,000 MT of direct emissions. To facilitate the implementation of an expanded study, SDG&E and SoCalGas propose the use of a simple first screen to find additional businesses that should receive an allocation of allowances or allowance revenue.

California has long had an implicit carbon price since criteria pollutants have been increasingly and extensively controlled since the 1970s in California, significantly more in non-attainment areas than other jurisdictions. Carbon and criteria pollutants are, to a large extent, jointly produced by the combustion of fossil fuels, thus the costs of criteria pollutant reduction provides a natural experiment as to the effects of a carbon price on leakage. The criteria pollutant price has included direct costs for NOx allowances in the RECLAIM program, and, more often, upfront requirements to purchase offsets for other pollutants in order to expand production. In addition, best available control technology and best available retrofit technology standards impose higher costs on California businesses than counterparts in other states. A simple test would be to see whether California's share of U.S. output (employment) of each six-digit NAICs industry has declined from 1972 or 1995 to present. A shift of production out of the country is likely confounded with other operating costs to a much larger extent than a shift to other states. A shift of production of emissions-intensive industries to other states is likely due primarily to environmental regulations that act in much the same manner as a carbon price. SDG&E and SoCalGas recommend a simple metric, the California share of national production (employment) for each six digit NAICs industry, be a simple first screen of potential leakage. A declining California share of national production (employment) in an industry over time would be a simple indicator of potential for long-term leakage from increased electricity and natural gas prices due to the cap-and-trade program and other AB 32 costs imposed on these industries. Such a metric may allow hundreds of businesses with smaller direct emissions to be able to get protection from significant cost increases that could lead to leakage through allowances or allowance revenues provided to electric and natural gas utilities.

Industries already identified by ARB that did not pass this screen or industries with inconclusive patterns could move to the next stage of review through the University of California econometric modeling study that would better control for potentially important confounding factors.

Econometric Modeling

The study by Resources for the Future (RFF) proposes complex econometric modeling with many variables, assumptions, and potentially complex estimation techniques. Wholesale electricity and natural gas markets are integrated across the West and so retail industrial electricity and natural gas rates are highly correlated, only differing by timing lags of wholesale prices being reflected in retail rates, different embedded costs of resources, and regulatory-imposed cross-subsidies. Due to long-

term multi-collinearity of electricity and natural gas prices across states, it is doubtful the short-term changes in energy prices will produce precise results as to the long-term effects of the carbon price. Transitory energy price spikes are unlikely to significantly affect long-term firm production decisions. The working hypothesis should be that an industry is subject to trade exposure and leakage unless statistical evidence rules out the possibility. Specifically, the price impacts used for evaluation should not be just the point estimate, but should consider the true parameter could be within the confidence interval. For example, if the price response parameter estimate produces a price elasticity point estimate of 0.5 with a standard deviation of 0.7, the analysis should consider the true price elasticity could be as high as 1.9 ($0.5 + 1.96 \cdot 0.7$) for purposes of the leakage analysis. The consequences of errors in underestimating price responsiveness (leakage through business migration) are far more damaging than overestimating price responsiveness (partially mitigating the AB 32 price signal). The analysis should explicitly consider this asymmetric risk.

Leakage Monitoring

The proposed leakage monitoring program will be invasive, subjected to a great deal of push-back from regulated firms, and unlikely to produce useful results. The cap-and-trade program already uses changes in output to adjust the level of allocated allowances, so the key data for each industry is provided to ARB under the current cap-and-trade regulation provisions. Aggregating the individual firm data by industry will inform ARB as to whether production in the industry is declining. Comparing industry output (employment) to national or regional measures of industry output (employment) should provide adequate monitoring for leakage. The data requested on sales, revenue, value of shipments by product type, payroll, capital investment, cost of materials, cost of products bought and sold without further processing, fuels and electricity spending will be useless without comparable national data, which it is acknowledged is not available on a national level without a significant time lag. This type of regulatory overreach is costly, both directly for firms compiling the information for ARB and in the cost of processing the data paid for by ARB fees. No additional data should be collected for leakage monitoring.

Conclusion

SDG&E and SoCalGas urge ARB to provide an allocation of allowances to natural gas utilities on behalf of all customers and the legislature to modify SB 1018 to allow for a return of allowance value to all electricity ratepayers to avoid the prospect of adverse leakage outcomes for the State of California. But, at a minimum, at least ARB should use these leakage studies to identify emissions-intensive businesses subject to potential leakage that are less than 25,000 MT and should receive allowances or allowance revenue from electric and natural gas utilities in addition to re-evaluating leakage among industries already identified by ARB.

Submitted by Tamara Rasberry on behalf of SDG&E and Southern California Gas Company

Date: August 21, 2012

Attachment

Potential Emissions-Intensive Trade-Exposed Customers with Less Than 25K MT of Direct Emissions

NAICS Description	NAICS Code	# of Potential EITE Customers	# of Customers in ARB Identified EITE Segments
Dog and Cat Food Manufacturing	311111	2	2
Other Animal Food Manufacturing	311119	3	3
Other Oilseed Processing	311223	2	2
Fats and Oils Refining and Blending	311225	2	2
Sugar and Confectionery Product Manufacturing	311300	1	1
Frozen Food Manufacturing	311410	4	4
Frozen Fruit Juice and Vegetable Manufacturing	311411	4	4
Frozen Specialty Food Manufacturing	311412	1	1
Fruit and Vegetable Canning	311421	3	3
Specialty Canning	311422	1	1
Dried and Dehydrated Food Manufacturing	311423	10	10
Fluid Milk Manufacturing	311511	4	4
Cheese Manufacturing	311513	6	6
Dry Condensed & Evaporated Dairy Product Manufacturing	311514	8	8
Animal (except Poultry) Slaughtering	311611	4	4
Seafood Canning	311711	1	1
Fresh and Frozen Seafood Processing	311712	1	1
Bread and Bakery Product Manufacturing	311810	1	1
Commercial Bakeries	311812	9	9
Cookie and Cracker Manufacturing	311821	2	2
Dry Pasta Manufacturing	311823	5	5
Tortilla Manufacturing	311830	3	3
Other Snack Food Manufacturing	311919	3	3
Flavoring Syrup and Concentrate Manufacturing	311930	1	1
Mayonnaise Dressing & Other Prepared Sauce Manufacturing	311941	1	1
Spice and Extract Manufacturing	311942	1	1
Perishable Prepared Food Manufacturing	311991	1	1
All Other Miscellaneous Food Manufacturing	311999	2	2
Beverage Manufacturing	312100	5	
Breweries	312120	1	1
Wineries	312130	6	
Yarn Spinning Mills	313111	1	
Textile and Fabric Finishing Mills	313310	1	
Broadwoven Fabric Finishing Mills	313311	10	
Textile & Fabric Finishing (except Broadwoven Fabric) Mills	313312	3	
Fabric Coating Mills	313320	2	
Carpet and Rug Mills	314110	5	
Cut Stock Resawing Lumber and Planning	321912	1	
Paper (except Newsprint) Mills	322121	2	2
Paperboard Mills	322130	1	1
Converted Paper Product Manufacturing	322200	1	
Corrugated and Solid Fiber Box Manufacturing	322211	23	
Fiber Can Tube Drum & Similar Products Manufacturing	322214	1	
Nonfolding Sanitary Food Container Manufacturing	322215	1	
Coated and Laminated Paper Manufacturing	322222	1	
Sanitary Paper Product Manufacturing	322291	3	
All Other Converted Paper Product Manufacturing	322299	1	
Printing and Related Support Activities	323100	1	
Commercial Lithographic Printing	323110	1	
Quick Printing	323114	4	
Petroleum Refineries	324110	5	5
Asphalt Paving Mixture and Block Manufacturing	324121	32	
Asphalt Shingle and Coating Materials Manufacturing	324122	4	
All Other Petroleum and Coal Products Manufacturing	324199	2	2

**Potential Emissions-Intensive Trade-Exposed Customers with Less Than 25K MT of Direct Emissions
(Continued)**

NAICS Description	NAICS Code	# of Potential EITE Customers	# of Customers in ARB Identified EITE Segments
Petrochemical Manufacturing	325110	1	
Industrial Gas Manufacturing	325120	1	1
Carbon Black Manufacturing	325182	1	
All Other Basic Inorganic Chemical Manufacturing	325188	2	2
Ethyl Alcohol Manufacturing	325193	1	
All Other Basic Organic Chemical Manufacturing	325199	1	1
Plastics Material and Resin Manufacturing	325211	10	
Pesticide and Other Agricultural Chemical Manufacturing	325320	1	
Medicinal and Botanical Manufacturing	325411	2	
Pharmaceutical Preparation Manufacturing	325412	7	
Biological Product (except Diagnostic) Manufacturing	325414	1	1
Adhesive Manufacturing	325520	1	
Soap and Cleaning Compound Manufacturing	325610	3	
All Other Chemical Product and Preparation Manufacturing	325900	1	
Plastics Product Manufacturing	326100	1	
Unsupported Plastics Film & Sheet (except Packaging) Manufacturing	326113	2	
Plastics Pipe and Pipe Fitting Manufacturing	326122	1	
Polystyrene Foam Product Manufacturing	326140	2	
Urethane & Other Foam Product (except Polystyrene) Manufacturing	326150	1	
Resilient Floor Covering Manufacturing	326192	1	
Rubber Product Manufacturing	326200	2	
Other Rubber Product Manufacturing	326290	2	
Vitreous China Fine Earthenware & Other Pottery Product Manufacturing	327112	1	
Clay Building Material & Refractories Manufacturing	327120	1	
Brick and Structural Clay Tile Manufacturing	327121	2	
Other Structural Clay Product Manufacturing	327123	2	
Other Pressed and Blown Glass and Glassware Manufacturing	327212	2	2
Cement Manufacturing	327310	5	5
Ground or Treated Mineral and Earth Manufacturing	327992	2	
All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	327999	3	
Rolled Steel Shape Manufacturing	331221	1	1
Secondary Smelting and Alloying of Aluminum	331314	5	5
Aluminum Sheet Plate and Foil Manufacturing	331315	1	
Aluminum Extruded Product Manufacturing	331316	6	
Primary Smelting & Refining of Nonferrous Metal (except Copper and A	331419	1	
Nonferrous Metal (except Copper & Aluminum) Rolling Drawing & Extr	331491	2	
Aluminum Die-Casting Foundries	331521	3	
Nonferrous (except Aluminum) Die-Casting Foundries	331522	1	
Other Nonferrous Foundries (except Die-Casting)	331528	1	
Iron and Steel Forging	332111	7	
Nonferrous Forging	332112	7	
Hand and Edge Tool Manufacturing	332212	1	
Plate Work Manufacturing	332313	1	
Ornamental and Architectural Metal Work Manufacturing	332323	1	
Metal Can Box and Other Metal Container (Light Gauge) Manufacturing	332430	1	
Metal Can Manufacturing	332431	4	
Other Metal Container Manufacturing	332439	1	
Other Fabricated Wire Product Manufacturing	332618	1	
Bolt Nut Screw Rivet and Washer Manufacturing	332722	3	
Metal Heat Treating	332811	9	
Electroplating Plating Polishing Anodizing and Coloring	332813	4	
Other Ordnance and Accessories Manufacturing	332995	1	
All Other Miscellaneous Fabricated Metal Product Manufacturing	332999	1	
Industrial Truck Tractor Trailer and Stacker Machinery Manufacturing	333924	1	
Electronic Computer Manufacturing	334111	1	
Radio & Television Broadcasting & Wireless Communications Equipme	334220	2	
Semiconductor and Related Device Manufacturing	334413	2	
Storage Battery Manufacturing	335911	1	
Other Communication and Energy Wire Manufacturing	335929	1	
Motor Vehicle Body Manufacturing	336211	1	
Aerospace Product and Parts Manufacturing	336400	9	
Aircraft Engine and Engine Parts Manufacturing	336412	1	
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	1	
Ship Building and Repairing	336611	1	
Surgical and Medical Instrument Manufacturing	339112	1	
Surgical Appliance and Supplies Manufacturing	339113	1	
Costume Jewelry and Novelty Manufacturing	339914	4	
Total		357	115