



The Voice of the Glazing Industry

Office of Climate Change
Air Resources Board
California Environmental Protection Agency
1001 "I" Street
P.O. Box 2815
Sacramento, CA 95812

**RE: Glass Association of North America, Flat Glass Manufacturing Division
Comments to CARB Draft Modifications to Cap and Trade Regulations
15-Day Public Comment Period**

The Glass Association of North America (GANA) appreciates this opportunity to continue to work with the California Air Resources Board (CARB) in the development of the free allocation methodology for the flat glass industry covered by the proposed cap and trade program in California.

Introduction

GANA is the leading association serving flat glass manufacturers, fabricators and glazing contractors. The flat glass industry in California is highly energy intensive and trade exposed and would therefore be greatly impacted by any GHG cap-and-trade program in California.

With this said, GANA recognizes and welcomes CARB's current proposals to lessen the severity of the impact on flat glass manufacturing by offering allocations to vulnerable industries as a way of reducing the immediate impact of the cap-and-trade program in California. GANA supports this approach for the flat glass industry due to a) its energy intensity, b) its high trade exposure due to both international and national competition, c) its general inability to pass costs along to consumers and c) its inability to respond quickly to any significant step change requirements to lower CO₂ emissions from its glass melting furnaces due to the long furnace operating cycles. GANA also urges CARB to recognize that some flat glass products are integral to "green" technologies like solar energy and energy efficient glazing in buildings that play an important role in achieving the overall GHG reduction goals of AB32.

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Even with the provisions made by CARB in the currently proposed modifications to the regulation, the flat glass industry in California remains significantly exposed under the cap and trade program because of unique features of the flat glass manufacturing process. As a consequence, GANA proposes for CARB's consideration the following revisions to the draft modification of the regulation to off-set these features and to help minimize the additional impacts of this program on the already vulnerable flat glass industry in California.

Product Output Based Allocation Calculation §95891 (b)

In the current 15-day modification of the regulation, the product output-based allocation calculation relies upon only one year of production data (specifically production in year t-2, two years prior to the budget year for which the calculation is being performed) and then is reconciled later in the program with the true-up factor. GANA emphasizes that in order for the true-up factor to fit its intended purpose, it would need to begin in budget year 2015 to reconcile 2013 actual emissions with the 2011 emissions used to calculate allocation in 2013.

However, in any case the proposed true-up factor will only account for changes in emissions that are directly linked to production and not those emissions that are needed to keep the glass furnace hot during hot-holds or start-ups and shut-downs associated with cold repairs. These industry glass process terms, representing types or degrees of temporary production interruptions, are explained below.

Cold repairs are a normal part of a float glass furnace operation, but they take place only once every 10 –14 years. During a cold repair, the furnace is cooled down completely and production discontinued in order to replace worn refractory, to complete required maintenance, and to make any necessary changes or adjustments to the furnace or regenerators. After a cold repair, the furnace is gradually heated up and raw materials are slowly introduced into the furnace. Then, when the furnace is hot enough and the glass level in the furnace is at a sufficient level, glass production is gradually ramped up while combustion tuning takes place until a steady normal operating condition is reached. A full cold repair can take around three months or more to complete. The heat-up process from the time the burners are lit to when glass is pulled at a regular rate can take anywhere from one to four weeks.

During a hot-hold or idling period, the furnace is kept hot to keep the contained glass in molten state, but the flow of glass into the forming operation is stopped or banked (glass pulled goes to zero). Hot-holds are typically done, if needed, in the last quarter of a campaign (the operating time between cold repairs) in order to do limited repair/patch work on worn areas of the furnace. Hot-holds can also be done anytime in the campaign if emergency repairs are needed. Some limited refractory replacement can also take place during a hot-hold depending on the nature and extent of the furnace wear. Hot-holds done for maintenance purposes can take up to four weeks time. If the decision is made to

bank a furnace and put it on hot-hold due to market conditions, another commercial reason for idling the furnace, that period of time could be several months.

GANA stresses and seeks confirmation from CARB that neither a cold repair nor a hot-hold situation would constitute a site “shut down” under the cap and trade program. Cold repair periods, during which time standard refractory replacement and maintenance activity take place, do not represent an intention by the manufacturer to halt production, but represent a standard maintenance activity in the flat glass industry. During a hot-hold situation, up to 45% of the total gas burned during normal operations is needed just to keep the furnace hot with no glass being pulled. Similarly for warm-up and cool-down periods associated with cold repairs during which time fuel will be burned while no glass is being pulled.

As the rule is currently drafted, flat glass sites would have a compliance obligation for the emissions during these idling and warm-up/cool-down periods, but would not receive any allowances for these periods because the product output based allocation methodology looks at a single year of production, and there would be no production during these periods.

To address this inequity stemming from production disruptions inherent in flat glass manufacturing, GANA requests that a factor be added to the existing product output based “true-up” factor specific to the flat glass industry to account for the actual emissions from the fuel combustion during the time period in which the furnace is idled but not shut down. GANA further requests that this factor be based on the fuel benchmark used for the fuel portion of the thermal energy based allocation methodology multiplied by the actual amount of fuel burned during the hot-hold period.

Cap Adjustment Factor Table 9-2 § 95891

During recent discussions between GANA members and CARB staff regarding the flat glass industry benchmark, staff suggested that the flat glass industry look at the provisions made for the cement industry in terms of calculating allocations because the flat glass and cement industries have similar process emissions challenges.

Like the cement industry, an average of 25% of the CO₂eq emissions from flat glass production is from the reaction of three primary glassmaking raw materials: soda ash, limestone and dolomite. The raw batch material fed into the furnace is supplemented to the extent possible by combining it with cullet (broken glass from the downstream trimming and cutting operations of the furnace line). The ability to reduce the process GHG emissions generated from the reactions of carbon containing raw materials in the glass production process is limited, however, by two factors over which flat glass manufacturers have no control: limited availability of cullet suitable for use in flat glass furnaces to meet strict product specifications and the lack of any substitutes for the basic carbon containing raw materials. In fact, most flat glass furnaces already optimize the use of cullet to the extent possible for operational and energy efficiency reasons. The

imposition of the cap and trade program is highly unlikely to yield or prompt any additional improvement in this regard in the near future.

For these reasons and given the precedent already established for the cement industry, GANA requests CARB include a cap adjustment factor for the flat glass industry that applies the yearly reduction only to the fuel portion of the flat glass emissions as in the following Table 1.

Table 1 – Cap Adjustment Factors (Existing and Proposed Flat Glass Industry)

Budget Year	Cap Adjustment Factor (c) for All Other Direct Allocation	Cap Adjustment Factor (c) for Cement Manufacturing (NAICS 327310)	Cap Adjustment Factor (c) for Flat Glass Manufacturing (NAICS 327211)
2013	0.981	0.991	0.986
2014	0.963	0.981	0.972
2015	0.944	0.972	0.958
2016	0.925	0.963	0.944
2017	0.907	0.953	0.930
2018	0.888	0.944	0.916
2019	0.869	0.935	0.902
2020	0.851	0.925	0.898

Flat Glass Industry Benchmark

GANA in these comments re-states its understanding of and support for using calendar years 2005 – 2007 as a basis for developing the industry average CO₂ emission intensity benchmark for the flat glass industry because these years preceded the current economic downturn and were less affected by the unusual operating conditions necessitated by that downturn.

GANA also must reiterate its concerns outlined in its comments submitted on December 15, 2010 and in a conference call with CARB staff on June 3, 2011 about the small number of flat glass sites used as a basis for the flat glass industry benchmark in the California cap and trade program. There are only three flat glass sites in California -- two of them are regenerative furnaces, and one of them is an oxy-fuel fired furnace design. This small number of sites (3) is not representative of normal operating conditions of the industry as a whole in the US which presently includes 30 flat glass lines. Such a small sample artificially skews the California benchmark, pushing it lower than a true industry average and thereby disproportionately impacts the remaining regenerative flat glass sites in California. For these reasons, GANA once again encourages CARB to consider a more representative national carbon emission intensity benchmark which the flat glass industry estimates, based upon its experience nationwide, to be more on the order of 0.5

metric tonnes of CO₂eq/short tons of glass draw rather than the 0.471 metric tonnes of CO₂eq /short ton of glass draw currently proposed in the 15-day modification package.

Summary

The flat glass industry in California is highly trade exposed and energy intensive as acknowledged by CARB in its proposed regulations and therefore very vulnerable to leakage. GANA strongly believes that consideration of the issues described in this comment letter and implementation of GANA's requests for changes in the modified regulations to accommodate the flat glass industry will help protect that industry in California and will support the production of glass products in California that are used for solar energy and energy efficient building glazing applications, which are important contributing factors in achieving the renewable energy goals in California. We look forward to the opportunity to speak to you further on this matter at your convenience. As always, please feel free to call with any questions to our office headquarter at 785.271.0208 and ask to speak with Ashley Charest, GANA Account Executive.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bill Yanek', with a large, stylized flourish extending to the right.

Bill Yanek
GANA Executive Vice President