



GerdaU Steel, 12459 Arrow Route, Rancho Cucamonga, CA 91739

June 10, 2016

Ms. Mary Nichols
Chair
California Air Resources Board
1001 "I" Street
Post Office Box 2815
Sacramento, California 95812

Subject: **Comments regarding Public Workshop on Emissions Leakage Potential Studies of May 18 2016**

Dear Ms. Nichols,

GerdaU Steel operates the only steel melting facility in California supplying rebar and seismic rebar for construction and infrastructure projects throughout the state. The steel commodities market is highly energy intensive and subject to severe international and domestic competition.

GerdaU has been supportive of the ARB's C&T program because ARB correctly identified leakage as an unintended consequence and included leakage mitigation as a key component of the program design. Although we have some concerns about the treatment of minimum energies required to produce each product in the longer term, we believe the intent to provide transition assistance until our global competitors are held to the same standards is appropriate and necessary. As such, we appreciate the opportunity to comment on this critical topic and look forward to continued involvement.

ARB is basing its plan to modify both the methods by which leakage is determined and the assistance factors assigned to various sectors on several recent studies. The complexity of the studies and short time frame provided for comments, allow only a cursory evaluation of the data and its impact on potential emissions leakage. We request more time for stakeholder engagement and proper caution before implementing new leakage evaluation methodology that is largely untested. The study authors frequently point to areas in which the data is incomplete or should not be used to extrapolate for specific industries. It is essential that such an important topic, that could lead to lost jobs in California and increased emissions globally, be considered carefully.

Emissions Leakage can result from any environmental related cost:

Although the EITE mitigation under consideration only applies to explicit carbon costs, several "additional" costs have been imposed on California manufacturers that do not exist in competing jurisdictions. Renewable Portfolio Standards, associated Transmissions Costs, Energy Storage mandates, increased cost of ancillary services because of intermittent resources and various subsidies all contribute to the risk of emissions leakage. Additionally, delayed payment of EITE mitigation payments and uncertainty around future mitigation methodology can contribute to economic uncertainty and

emissions leakage. The market price for carbon would be much higher if all of these outcomes were achieved through the carbon market instead of out of market policies.

Because mitigation for these “additional” costs is not currently available, it is essential that the leakage risk associated with explicit carbon cost be fully considered and that modelling of leakage risk include the marginal impact of explicit carbon costs on top of the already significantly elevated California electricity price.

Emissions Leakage is already occurring:

California continues to import the majority of its rebar requirements from out of state. Despite growing demand for rebar in the state of California since the financial crisis of 2008/2009, in state production of rebar has stagnated in the face of growing imports from overseas and continued competition from surrounding states and Mexico. Imports of rebar to the California ports have increased from 2% as recently as 2012 to approximately 28% in 2015.

Imported Rebar contains significantly more emissions per ton:

The majority of steel imported to California from international sources comes from Asia and Mexico. The emissions intensity of the energy mix of each country is approximately 3 times higher than California.

State/Utility	Emissions from Electricity Generation							Total CO2/MWh	Information Source
	Coal	Oil	NG	Nuclear	Hydro	Renewables			
CO2 Lbs/MWh	2249	1672	1135	0	0	0			http://www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html
California	0%	0%	54%	11%	7%	26%	612.90		http://www.eia.gov/electricity/monthly/
China	66%	20%	5%	0%	8%	1%	1,875.49		http://www.eia.gov/beta/international/analysis.cfm?iso=CHN
Mexico	13%	20%	49%	3%	12%	3%	1,182.92		http://www.apricum-group.com/wp-content/uploads/2014/02/Mexico-pie-chart.jpg

The primary domestic competition for rebar is from Utah and Arizona; coal heavy states with minimal emissions regulations. Again, the emissions intensity of the energy mix is significantly higher than California.

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	Coal	Oil	NG	Nuclear	Hydro	Renewables			
CO2 Lbs/MWh	2249	1672	1135	0	0	0			http://www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html
California	0%	0%	54%	11%	7%	26%	612.90		http://www.eia.gov/electricity/monthly/
Arizona	34%	0%	22%	32%	7%	4%	1,014.36		http://www.eia.gov/electricity/monthly/
Utah	78%	0%	18%	0%	2%	3%	1,958.52		http://www.eia.gov/electricity/monthly/

California is both a net importer of steel and a net exporter of scrap metal. A significant amount of the steel imported to California was made with California sourced scrap metal. In the case of imports from Asia, each ton of metal was shipped across the Pacific Ocean, twice. The emissions associated with this transportation is significant. Higher transportation emissions exist for domestic imports to a lesser but still significant degree.

Location		Emissions from Transportation						Total CO2 Lbs from Transportation
		Scrap			Finished Materials			
		Truck Miles	Ship Miles	CO2 Lbs	Truck Miles	Ship Miles	CO2 Lbs	
CO2 Factor >	CO2 Lbs/Mile	0.70390	0.09866		0.70390	0.09866		
Rancho Cucamonga		46		32.17	46		32.17	64.34
Hong Kong		49	7,322	756.90	49	7,322	756.90	1,513.79
Mexico, Monterrey		1,529		1,075.96	1,529		1,075.96	2,151.92

The study *Measuring Leakage Risk* correctly explains, “To convert these estimated market transfer rates into emissions leakage rates, we would need an estimate of the ratio of marginal emissions intensities” but notes that the data is difficult to gather and interpret; and would vary by industry. The study then points out that, “If the marginal emissions intensity associated with foreign production is higher (lower) than the domestic emissions intensity, our measure will under (over) estimate the rate of emissions leakage.” In this case, conclusions absent the conversion to emissions leakage rates would clearly understate the emissions leakage potential.

Long Term conclusions should be clarified before being relied upon:

The study *Employment and Output Leakage under California’s Cap-and-Trade Program* correctly urges “caution when interpreting the industry-specific long-run results.”

Assumptions about the ability to implement energy efficient technology should be tested for the availability of technically feasible and cost effective solutions; and the theoretical minimum energy required for each industry. Gerdau strongly recommends that ARB include an analysis of the leakage impact related to the “ask” of industry to reduce energy consumption below what is technically required to actually produce the product.

Higher energy costs without technically feasible and cost effective solutions will lead to plant closures in a world of constrained capital and global competition. Notably, the study’s “long-run analysis characterizes the effects of energy prices on employment, output, and value added at plants in our sample that continue operating more than 5 years.” The authors conduct a separate plant closure analysis reported qualitatively but not included in the long-run analysis conclusions.

The study result of increases in output for some industries calls in to question the validity of the data set for predicting long run impacts as noted by the authors.

Carbon cost assumptions and energy price impact should be clarified:

The carbon cost assumption used most prominently of \$10 / ton is inappropriate to cover a period of time in which the market price floor exceeds this value. Several forecasts of carbon prices, including prices above \$22/ton, should be included based on market forecasts of carbon cost over the coming years with consideration for carbon market integration with Ontario.

The energy price impact of a given carbon price should be clarified. The *Employment and Output Leakage* study states that a \$10 / ton cost of carbon “translates to an electricity price increase of

\$.005525 / kilowatt hour” and later explains that a \$22.62 / ton cost of carbon “translates to an electricity price increase of \$.001250.” Although this is likely a typo, the correct energy price impact should be clarified and model assumptions should be rechecked.

Gerdau looks forward to continued participation in this process and strongly encourages allowing for robust stakeholder engagement on this important topic.

Sincerely,

A handwritten signature in black ink, appearing to read 'SH', with a long horizontal stroke extending to the right.

Sam Harper

Regional Energy Manager

214.463.9423

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CC:

Mr. Richard Corey, California Air Resources Board

Ms. Mary Jane Coombs, California Air Resources Board

Ms. Mihoyo Fuji, California Air Resources Board

Ms. Rajinder Sahota, California Air Resources Board