

April 20, 2017

Mary-Jane Coombs  
Manager - Allowance Allocation, Leakage  
Cap and Trade Program  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

**RE: Comments on Leakage Analysis for Agricultural Operations**

Dear Ms. Coombs:

Windset Farms ("Windset") appreciates the opportunity to provide comments on the leakage analysis prepared by the California Air Resources Board ("CARB") in the implementation of the "Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms" found in Title 17, CCR, Sections 95801-96022. We look forward to discussing this matter further with you and your staff, after you have had time to consider the information presented here.

**Background**

Windset Farms operates a commercial greenhouse growing facility consisting of four (4) 32-acre greenhouses surrounding a centralized pack-house building. The greenhouses are based on a Dutch design of a semi-closed unit specifically engineered for use in the Santa Barbara County climate. These greenhouses utilize state-of-the-art control systems to manage irrigation and internal environmental growing conditions. The greenhouses grow a variety of vegetable crops, primarily tomatoes, cucumbers, and strawberries.

For greenhouses, internal temperature, humidity and carbon dioxide (CO<sub>2</sub>) concentrations are critical elements for growing plants. Heat and CO<sub>2</sub> are provided by four boilers located in the pack-house building at the facility. Each boiler has a rated heat input of 42.7 MMBtu/hr and is ducted to exhaust into the greenhouse as part of the CO<sub>2</sub> dosing process required for plant growth (photosynthesis). Energy from the boilers heats water which is stored in large insulated tanks and is used to regulate temperature and humidity within the greenhouses as needed.

CO<sub>2</sub> in the greenhouse is consumed by the plants (fruits, vines, leaves, roots, etc.) during the photosynthesis process. Under most growing conditions, the volume of CO<sub>2</sub> supplied by the boilers is not sufficient to meet the dosing requirements of the crops. To fulfil this dosing requirement, supplemental CO<sub>2</sub> is brought to the facility as a liquid and stored in two on-site tanks. This liquid is re-vaporized and circulated into the greenhouse to





achieve the required CO<sub>2</sub> levels. The liquid CO<sub>2</sub> is a captured waste stream from hydrogen refineries in the Los Angeles basin. Windset puts the waste stream to a beneficial reuse for the production of nutritious food for human consumption.

### **GHG Regulatory Compliance to Date**

Windset's Santa Maria facility began operation in August 2011 and consisted of the first phase of two 32-acre greenhouses and the pack-house building. These initial greenhouses were supported by the first two boilers. In August of 2013, Windset completed construction of a second phase with two additional 32-acre greenhouses completing the four-greenhouse configuration and totaling 128-acres in area. Construction of phase two included the addition of two more boilers, for a total of four boilers at the facility. Construction is currently underway on two additional greenhouses and a second pack-house building. These two new greenhouses will utilize the same growing technologies and approach and will be supported by two new boilers. These greenhouses and boilers are expected to be online in Q3 2017 and will result in a total of six boilers operating at the facility.

Windset has been subject to the California Greenhouse Gas (GHG) reporting program and to the California Cap and Trade program since 2014, the first calendar year in which GHG emissions exceeded the 25,000 metric tons/year threshold for these programs. Windset is considered a "new entrant" to the Cap and Trade program, since our emissions exceeded the trigger level after program implementation began. Windset has also not yet been eligible for any allocations under the Cap and Trade program, since agricultural production has not been previously evaluated for leakage risk and industry assistance. Under the program, facilities are only eligible for allocations if: (1) they belong in a North American Industry Classification System (NAICS) category that is listed in Table 8-1 of the Cap and Trade regulation, or (2) the first three digits of the facility's NAICS code match those of a NAICS code listed in Table 8-1, making the facility eligible to use the energy-based allocation methodology pursuant to 17 CCR 95891(a)(3).

To date, there are no NAICS codes related to agricultural crop growth in Table 8-1. There are food processing codes listed, but these fall under the manufacturing category, rather than agriculture (Food Manufacturing NAICS codes begin with 311, while Agricultural Crop Production NAICS codes begin with 111.)

We appreciate that CARB has proposed to add a category related to Agricultural Crop Production into the Cap and Trade rule with the latest round of proposed regulatory changes. With the consideration of true-up allocations that use a two-year "look back" methodology, this will reduce the number of years for which Windset will be provided zero allocations. However, even with this change, Windset is still obligated to cover at least two years of its compliance obligations (2014 and 2015) while receiving no allocations.







The following sections contain our comments on the proposed leakage analysis performed by CARB for determining an Industry Assistance Factor for our NAICS category.

### **CARB Leakage Analysis**

CARB evaluates leakage risk for an industry using the combination of two factors: (1) Trade Exposure and (2) Emissions Intensity. We have provided comments on CARB's calculations of these factors for our industry. However, we believe these categories provide an incomplete picture of the true leakage risk faced by our Company.

#### Trade Exposure

CARB's calculations of Trade Exposure evaluated NAICS 11141 ("Food Crops Grown Under Cover") based on Windset's self-identified NAICS code. This category may be technically correct when one looks at the process by which the crops are grown. Windset's facility does grow crops in a greenhouse. However, for trade exposure purposes, nearly all of Windset's competitors fall under NAICS 11121 ("Vegetable and Melon Farming.") Windset's operations involve a new and innovative technique for growing crops inside a greenhouse that are typically grown in open fields. Windset's vegetable crops directly compete with those that are grown in open field environments. An appropriate financial analysis would be a comparison with those open field farming operations of similar vegetable crops. "Covered" crops are typically seasonal crops such as berries and they use a crop cover such as a plastic hoop house to extend their growing season by protecting the crop from rain and wind. Windset grows tomatoes, cucumbers, and strawberries, and none of these crops are grown utilizing covered hoop houses. These are all open field crops.

We have therefore performed the Trade Exposure analysis using NAICS 11121, and following the same methodology used by CARB for its original analysis. We downloaded data from the U.S. Department of Commerce and the U.S. International Trade Commission, and the results are presented in Attachment 1. As seen in these calculations, the vegetable farming category in which Windset competes should be considered to have a HIGH level of Trade Exposure (meaning calculated trade share >19%). We also plan to provide electronic copies of our calculations and support data to CARB for review and approval.

#### Emissions Intensity

Typically, a calculation of Emissions Intensity is performed for an industrial category, in a manner similar to the calculation of Trade Exposure discussed above. We understand that, in Windset's case, CARB has performed this analysis for our facility alone. This was done because the "value added" cost information is not available for the agricultural industry as it is for industrial manufacturing categories.





CARB's analysis indicates that for the years 2013, 2014 and 2015, Windset had a calculated Emissions Intensity in the LOW category (100 to 999 MT CO<sub>2</sub>e/\$million value added). Since additional data is now available, we have performed this analysis for calendar year 2016 and found that the calculated Emissions Intensity of our facility has grown to 959 MT CO<sub>2</sub>e/\$million value added. This is very close to the MEDIUM category threshold, and suggests an upward trend (see Attachment 2). Please note that the information presented here is only a summary of the calculations. The supporting data contains confidential business information, which we have shared with CARB in a separate submittal.

This trend may be due, in part, to our increasing investment in the Santa Maria facility. At the start of its operation in 2011, the facility operated two boilers. Two additional boilers came online in 2013, allowing us to expand production but resulting in higher emissions. Construction is currently underway on two additional greenhouses, an associated pack shed, and includes two new boilers. These new greenhouses and boilers are expected to be online in Q3 2017.

In addition to the higher emissions, when compared to the industry most closely resembling Windset and its operations, the NAICS category "Vegetable Farming", the emissions intensity is not even comparable. Field vegetable farming techniques have little or no emissions, whereas Windset has a significant amount. Therefore, we request that Windset's emission intensity is rated as high.

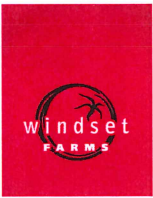
### Shifting Production

Beyond the calculations of Trade Exposure and Emissions Intensity, there are a number of factors that contribute to a very real risk of emissions leakage, and should be considered in CARB's determination. Windset has been expanding the Santa Maria facility, and we plan to continue that trend if we can operate in a favorable business environment. We also operate greenhouse facilities in Nevada and British Columbia, and we are actively evaluating expanding these existing facilities as well. Windset is also evaluating the development of new similar greenhouse facilities in other states and countries. From a business case perspective, we are developing strategies to potentially shift production out of California should Cap and Trade costs become too high to manage. This decision will be made in the short term, affecting our production during the Third Compliance Period of the Cap and Trade program (2018 to 2020). So, we are eager to work with CARB to obtain a determination on this matter as quickly as possible.

As we have demonstrated, the vegetable crop production industry is highly trade exposed, and sensitive to even small changes in production costs. Greenhouse farming requires an intensive capital investment compared to field farming and thus operating costs become large factors when evaluating the placement of capital in certain regions. This disparity and exposure to sensitivity is even more evident when competing against low capital investment field crops in the same product category.







## Conclusion

Based on the information presented here, we believe that CARB should grant the Agricultural Crop Production category with a 100% Industry Assistance Factor for the Third Compliance Period of the Cap and Trade program. Use of a lower factor would place an unnecessary burden on Windset, and potentially result in the shifting of crop production (and therefore leakage of GHG emissions) outside of California.

We appreciate CARB's willingness to work with us on this matter, and we look forward to continuing our past, productive discussions with you. Please do not hesitate to contact our consultant, Steve Branoff of Ramboll Environ, at (415) 796-1942 to discuss this further.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Wesley".

David Wesley  
Vice President, Construction and Development  
Windset Farms

## Enclosures

Attachment 1 – Trade Exposure Analysis  
Attachment 2 – Emissions Intensity Analysis

Cc

Dillon Kass, Regulatory Compliance Manager, Windset Farms



Greenhouse Grown

## **Attachment 1 Trade Exposure Analysis**





Windset Farms

Trade Exposure Assessment (NAICS 111219)

	Total Imports	Total Exports	Total trade	Total Shipments	Trade Exposure
2002	\$ 3,042,438,458	\$ 1,648,967,135	\$ 4,691,405,593	\$ 10,159,518,000	35.54%
2007	\$ 5,003,071,604	\$ 2,677,661,936	\$ 7,680,733,540	\$ 12,089,416,000	44.94%
2012	\$ 6,871,863,929	\$ 3,420,799,094	\$ 10,292,663,023	\$ 12,715,756,000	52.55%

TE 2012 only	<b>52.55%</b>	<-- high
TE 2007+2012	48.74%	<-- high
TE all years	44.34%	<-- high

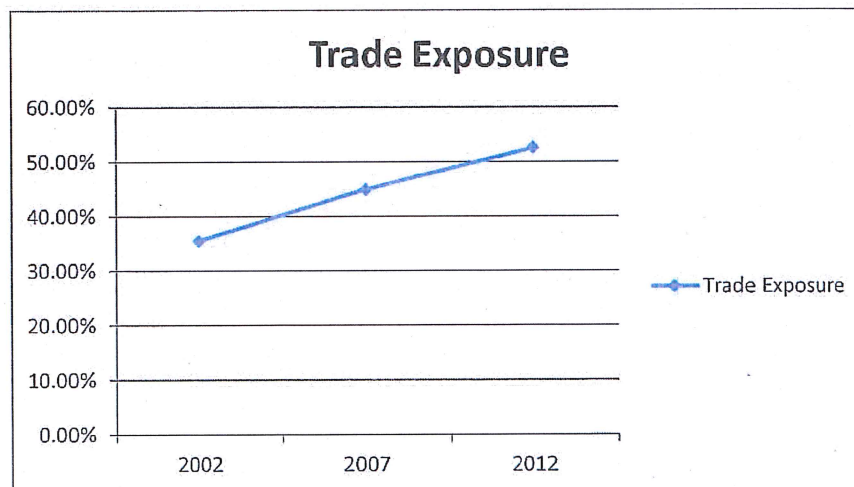
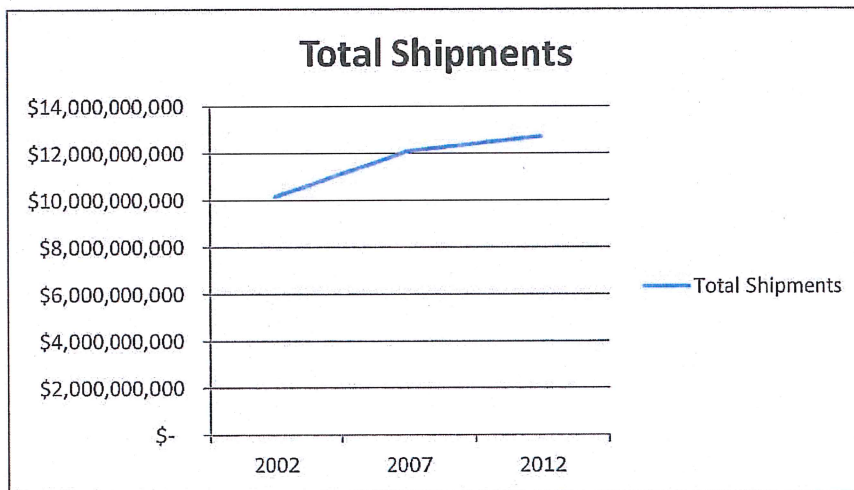
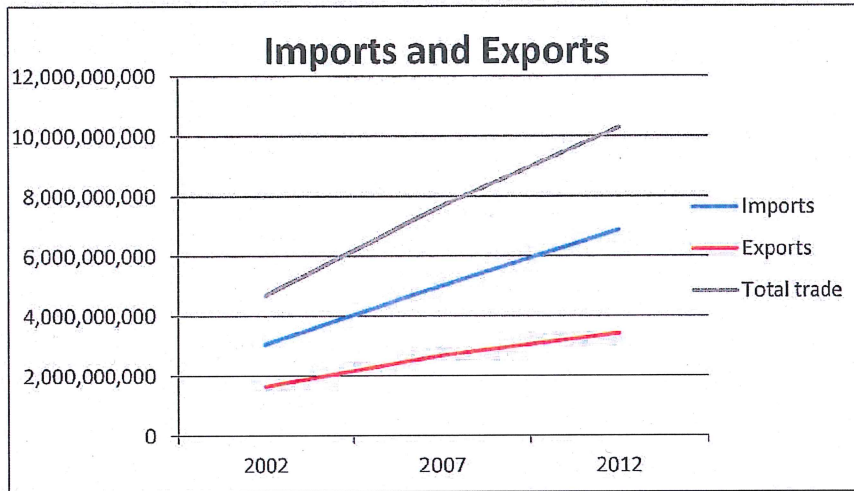
$$\text{trade share} = \frac{(\text{imports} + \text{exports})}{(\text{shipments} + \text{imports})}^*$$

\* Imports, exports, and shipments data from the U.S. Census Bureau and the International Trade Commission

Trade share is categorized into three risk levels:

- High: > 19 %
- Medium: 19 to 10%
- Low: < 10%

Windset Farms  
Trade Exposure Assessment (NAICS 11219)







Greenhouse Grown

## **Attachment 2 Emissions Intensity Analysis**



Windset Farms  
Emissions Intensity Analysis

	Emissions	Value added	Emissions intensity
2016	40,834.26	\$ 42,572,904	959.16
2015	39,807.97	\$ 53,952,909	737.83
2014	37,010.63	\$ 48,475,143	763.50
2013	23,126.66	\$ 39,174,738	590.35

emissions intensity =  
metric tons CO<sub>2</sub>e / \$million value added\*

\* Value added data from the Annual Survey of Manufacturers and the U.S. Economic Census

The emissions intensity is categorized into four risk levels:

- High: > 5000 mtCO<sub>2</sub>e/\$M value added
- Medium: 4999 to 1000 mtCO<sub>2</sub>e/\$M value added
- Low: 999 to 100 mtCO<sub>2</sub>e/\$M value added
- Very Low: < 100 mtCO<sub>2</sub>e/\$M value added