

Ministry for the Environment

Activity: Production of Fresh Tomatoes

Report on eligibility threshold, proposed allocative baseline and areas of risk

October 2010

Executive summary

Proposed emissions intensity: Moderate

Proposed allocative baseline:

Tonnes of fresh tomatoes

Electricity Allocative Baseline	Other Emissions Allocative Baseline	Composite Allocative Baseline
0.1338	2.293	2.426

Assessment of risk: Medium

Background to activity and firms

General background

The New Zealand Emissions Trading Scheme (NZ ETS) is a key part of the Government's response to global climate change. Under the NZ ETS, some businesses will have a legal obligation to surrender 'emission units' to cover their direct greenhouse gas emissions or the emissions associated with their products. The consequent need to acquire these units will effectively put a price on emissions of these greenhouse gases. Industrial allocation is focused on providing transitional assistance to the parts of the economy most heavily affected by the NZ ETS – the economic activities which are both emission intensive and trade exposed (EITE).

To assess emissions intensity the Government requested by Gazette Notice the production, sales, revenue and emissions data from firms conducting activities which were considered likely to be emissions intensive.

The completeness and reasonableness of the data submitted by firms were assessed against agreed validation checks and industry information collated by the Ministry for the Environment (MFE).

This report summarises the outcome of data submissions from the production of fresh tomatoes activity including the level of eligibility, allocative baseline and any observations made on the submitted data.

Gazette Notice

Notice number: 50

Publication date: 30 April 2010

Title: Call for the Provision of Data (Production of Fresh Tomatoes) Notice 2010

Data submission deadline: 2 August 2010

Activity definition

The biological transformation from tomato seedlings in their final growing position, following transfer from their propagation area, to fresh tomatoes grown for commercial purposes.

Activity outputs

Fresh tomatoes.

Product basis of allocation

Tonnes of fresh tomatoes.

Background to Firms

Based on information provided to MFE from Horticulture New Zealand, it was estimated that up to 320 firms were conducting the production of fresh tomatoes activity. 55 firms have submitted data, these firms are:

- A & K Farm Limited
- AJ & JE Ivceovich Partnership
- Aquarius Gardens Limited
- Canaan Garden NZ
- Castle Rock Orchards Limited
- Cheriton Farm
- D & AM Bier
- DF Greenhouse Limited
- Do Hwan Kim
- EM & DC Duncan
- Fairfield Produce NZ Limited
- Farout Tomatoes
- Fons & Ellis Sanders
- G Williams and A Penman Ltd Limited
- Gar-Sun Gardens
- GJ & FE Ormandy
- Gourmet Mokia Limited
- Great Lake Tomatoes
- Greentop Company Limited
- Growing Fare Limited
- Han Kang
- Hanna Hothouses Limited
- IK & CS Ahn
- J&J Tomatoes
- J.S. Ewers Limited
- Jesi Trust Limited
- Joeun Garden
- K.F & H.J Petrie
- Karamea Tomatoes Limited
- Kingbridge Limited
- Kovati Tam-Yam Gardens
- Little Knoll Greenhouses Limited
- Lycopene Fresh Vegefruit Limited
- MA & AM & EM Sanders Partnership
- McArthur's Berry Farm
- Nagra Bros Limited
- Nortonta Limited
- P & M.A van der Gulik
- P.H. Kinzett Limited
- Packgard Growers 2000 Limited
- PJ & MJ Fausett Partnership
- Pomoana Gardens Limited
- Rembrandt van Rijen Limited
- Rosey Red Produce
- Shalom Trading
- Status Produce Limited
- Stephen & Janette Low
- T & D Turner
- Timaru Investments Ltd (Canterbury Tomatoes)
- Tiny Toms Limited
- Underglass Bombay Limited
- Underglass Karaka Limited
- Vege Fresh Growers Limited
- W & M Zwart
- Wonha Park and Jiim Ryoo Park

Accordingly, the proposed eligibility assessment and proposed allocative baseline have been determined from the data submitted by these firms. Canaan Floria has also made a submission but it is a new grower since 1 July 2009, as such, its data is not included.

Waiuku Tomato Farm and Four Season also submitted but their submissions were erroneous and no resubmissions were received. Resubmissions were received from two other firms, Protract Enterprises and Big Box Leisure. Both the submissions and the resubmissions received from these firms were erroneous. An incomplete resubmission was also received from NZ Fresh Floria Limited. As agreed with MFE, because these are small firms (less than 1% of production), no further requests were made to them to submit a complete data form, and as a result they were not included in the database.

Sunny Garden also submitted data however its emissions data is unreasonably high. Without its data, the Emissions per NZ\$1M Revenue and composite allocative base will decrease from 6,170 to 926 and from 16.86 to 2.426. Based on discussions with MFE, this firm's data was not included in the database as it was a small firm (less than 1% of production) and it had already had to resubmit its data form due to errors in its emissions data.

Proposed eligibility threshold

The database has summarised the emissions intensity of the prescribed activity by considering the quantity of emissions per million dollars of revenue over the three financial years.

This has been calculated using the following formula:

$$\text{Emissions intensity} = \frac{\text{total activity emissions}}{\text{total revenue from activity outputs NZ\$M}}$$

Activity Emissions (t/CO ₂ e)	Revenue (NZ\$M)	Emissions per NZ\$1m Revenue	Level of Eligibility
203,859	220.05	926.43	Moderate

The determined emissions intensity will result in level of assistance of sixty percent of the allocative baseline. The table below sets out the emissions intensity per NZ\$1M of revenue of the individual submitters. There is a wide range of emissions intensity resulting in individual firm eligibility ranging from high to nil:

Firm	Emissions per NZ\$1m Revenue	Level of Eligibility
s 9(2)(b)(ii)		

s 9(2)(b)(ii)



Proposed allocative baseline

The database has determined a proposed allocative baseline in terms of tonnes of emissions per unit of product over the three years.

Allocative baseline =
$$\frac{\text{total product emissions}}{\text{total product output}}$$

The proposed allocative baseline is as follows:

Product: Tonnes of fresh tomatoes.

Total specified emissions	Total specified product	Electricity Allocative Baseline	Other Emissions Allocative Baseline	Composite Allocative Baseline
193,986	79,951	0.1338	2.293	2.426

Observations on the data submitted

Production data

The production data submitted by the firms is approximately 26,650 tonnes per annum (total specified product of 79,951 divided by three years). This is significantly lower than the amount of extrapolated NZ production of 43,000 tonnes as contained in Table 59 of the Manual, i.e. the submissions made up 62% of the production included in the Manual. It is expected that the production data is lower as the number of firms submitting data (i.e. 56 firms) is significantly lower than the estimation of 320 firms based on information provided to MFE from Horticulture New Zealand. However, there is no basis to ascertain if the production data is reasonable.

Revenue data

All submissions used actual sales revenue to derive a market / gate price. There is a wide spread of market / gate price for tomatoes ranging from \$814 per tonne to \$10,565 per tonne. The average of the market / gate price of the product is approximately \$3,342 per tonne compared to the average value of \$2,700 per tonne of the prices stated in Table 61 of the Manual. Based on the submissions received, firms with a very high market gate price are generally cherry tomato growers.

We also note that the price in the Manual includes products sold domestically and under freight on board terms. As such, the price included in the Manual may include transport costs incurred by the seller prior to the products being loaded on board, whereas the market / gate price submitted would exclude all transport costs.

Transport costs incurred by the submitters range from \$0 per tonne to \$1,247 per tonne, with the average being \$222 per tonne. The five firms with the highest transport costs are s 9(2)(b)(ii)

The average gate price per tonne (after taking into account transport costs) of these five firms is \$6,380, which is significantly higher than the average market / gate price. Their total revenue contributes 16% of the industry's revenue. We understand from the submissions that s 9(2)(b)(ii) is a cherry tomato grower. As the transport costs would include packaging costs to transport to market and cherry tomato growers would have higher packaging costs than normal tomato growers, this may explain the high transport costs incurred by cherry tomato growers.

s 9(2)(b)(ii)

are the top eight producers by the quantity of output and revenue. Together, they represent 80% of the industry's total production and 77% of the total revenue. The average market / gate price of these producers is \$2,819 per tonne, and ranges from \$2,339 to \$3,911 per tonne. This average market / gate price is lower than the submitters' average but is above the average value as stated in the Manual. As the average market / gate price of the top producers is lower than the submitters' average, there is some risk associated with revenue data submitted by the larger firms. However, the revenue of the top eight producers would have to increase by 20% before the industry's level of eligibility falls below the moderate level.

Given that the emissions per NZ\$1m revenue is 926.4tCO₂, and assuming that the emissions output of 203,859tCO₂ is correct, the revenue would have to increase by \$34.78m (i.e. increase by 16%) before the level of eligibility falls below the moderate level. Performing a similar analysis for the ten firms with the highest revenue, their combined revenue would have to increase by 19% before the level of eligibility falls below the moderate level.


Emissions data

The emissions sources submitted by the firms are coal, gas and electricity. Natural gas is only used by North Island growers with one exception; and coal is predominantly used by South Island growers. The weighted average gross calorific value used by the firms appears reasonable. Emissions data is relevant in the context of both eligibility and allocative baseline. Seven firms have nil emissions; they either do not use any energy source or use less than 1,500 tonnes of waste oil per year.

For eligibility purposes, assuming that revenue of \$220.05m is correct, then emissions will have to decrease by 27,820tCO₂ (i.e. decrease by 14%) before the industry will fall outside the moderate level of eligibility.




The energy intensity ranges from 0GJ/t to 174GJ/t and the average is 34GJ/t. This is in line with the information in the Manual, where the average is 38GJ/t and the range is between 11 GJ/t to 88 GJ/t. The variations among the energy intensity may be caused by regional location, management, greenhouse type and age.

The composite allocative baseline ranges from 0 tCO₂/t to 15.94tCO₂/t and the average based on number of submitters is 3.006tCO₂/t. The average emissions intensity based on the Manual is 3.1tCO₂/t and the range is likely to be from 0.8tCO₂/t to 7.3tCO₂/t. The average emissions intensity of the submitters is slightly lower than the average provided in the Manual. The Manual data is based on a 2003 year survey, and it is unclear the extent to which the emissions mix may have changed since that time. In addition, it is unclear of the locations and mix of firms included in the 2003 survey. Taking into account South Island submitters only, the average composite baseline is 5.591tCO₂/t.

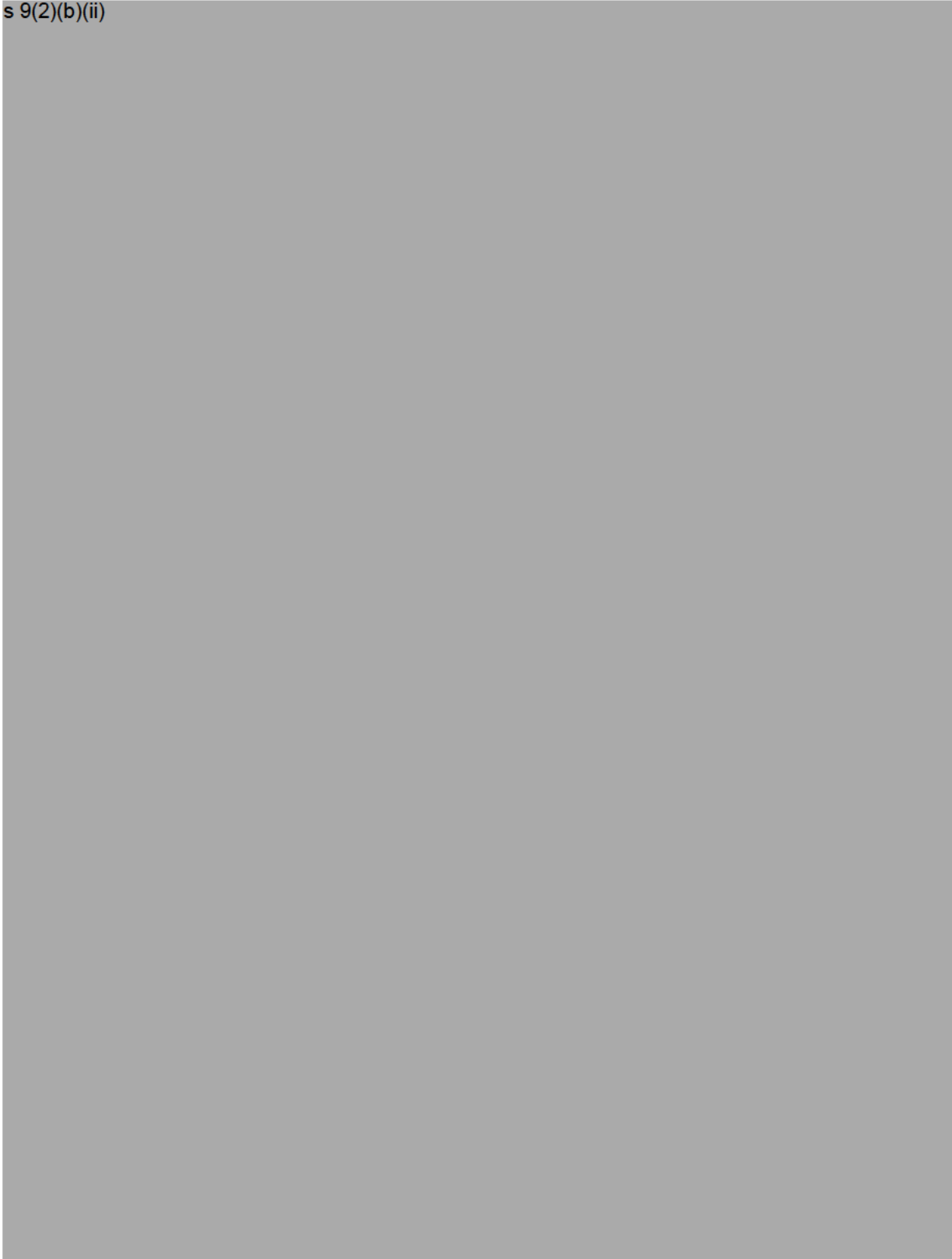
Four firms have emissions intensity above the range described in the Manual, s 9(2)(b)(ii)  This is in line with expectation as South Island operations use coal, which has a higher level of emissions. The top two firms with the highest emissions intensity are both cherry tomato growers. Based on discussions with MFE's external advisor, we understand that the production is generally lower compared to normal tomatoes. As such, it is likely that the allocative baseline for cherry tomato growers will be disproportionately higher than normal tomato growers.

The composite allocative baselines of coal users range from 0.2316tCO₂/t to 15.94tCO₂/t and the allocative baseline of all coal submitters is 5.382tCO₂/t. The above four firms are outliers among coal users. If their production data is correct and we assumed that their composite allocative baseline should be 5.382tCO₂/t, then the industry's allocative baseline will move from 2.426tCO₂/t to 2.395tCO₂/t (i.e. decrease by 1%).

In view of the lack of publicly available data, we have undertaken further analysis of individual submissions and calculated the percentage of changes required in both production and emissions to decrease the allocative baseline by 5%. Our analysis can be summarised as follows:

Firm	Composite allocative baseline	Change in quantity	Change in emissions
s 9(2)(b)(ii)			

s 9(2)(b)(ii)



The table above illustrates that it is unlikely that an individual firm's change in production or emissions will decrease the allocative baseline by 5%.

We note that this analysis only addresses one variable changing (e.g. the percentage change in production assuming that emissions remain the same) and does not account for the impact on the allocative baseline if both the production quantity and emissions amount change.

The composite allocative baselines of gas users range from 0.6847tCO₂/t to 4.441tCO₂/t and the allocative baseline of all gas submitters is 1.819tCO₂/t. § 9(2)(b)(ii) are the outliers when compared to the other gas submitters. Together, their production contributes to 4% of all submitters' production. If their production data is correct and we assumed that their composite allocative baseline should be 1.819tCO₂/t, then the industry's allocative baseline will move from 2.426tCO₂/t to 2.336tCO₂/t (i.e. decrease by 4%).

Standard of Bases of Preparation Disclosure

The standard of the disclosures contained in the Bases of Preparation is low with more than half of the firms requiring resubmissions.

Issues raised during completeness checking process

Issue	PricewaterhouseCoopers Response
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) The firm did not provide electricity data in the Data Form which was expected.	Data Support requested the firm resubmit the Data Form to include electricity consumption as well as an updated Bases of Preparation
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) No units have been entered for Box 13 Units Sold Externally. As a consequence total revenue has not been calculated. The firm has entered an Observable Market Price into the data form as well as using actual sales.	Data Support requested the firm to resubmit the Data form including the units sold externally Data Support requested the firm to resubmit the Data Form to provide actual sales data and delete the data in Box 16.
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) The firm has entered data in the Data form in kilograms rather than tonnes.	Data Support requested the firm to resubmit the Data Form converting the Production, Sales and Revenue data into tonnes.
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) Firm has not entered production, sales and revenue or emissions data into the Data Form.	Data Support requested the firm to resubmit the Data Form to provide this information.
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) NIL	
§ 9(2)(b)(ii) The firm indicated in the Bases of Preparation that revenue contains transportation costs recovery but no data has been entered into Box 15 in the Data Form.	Data Support requested the firm to resubmit the Data form to include transportation costs recovery.

<p>§ 9(2)(b)(ii) [REDACTED] NIL</p>	
<p>§ 9(2)(b)(ii) [REDACTED] Box 13 in the Data Form contains Revenue from units sold externally data rather than Units Sold Externally data.</p> <p>Firm has not confirmed in Box 14 in the Bases of Preparation whether revenue from by-products has been excluded from total revenue.</p> <p>Firm has not stated in the Bases of Preparation the basis for determining the weighted average calorific value for coal.</p> <p>Firm has not provided information in the Bases of Preparation on the method used to determine the MWh used as part of the activity and how it has apportioned electricity use to account for excluded emissions or use outside of the activity.</p>	<p>Data Support requested the firm to resubmit the Data Form to update Box 13</p> <p>Data Support requested the firm to resubmit the Bases of Preparation to clarify this.</p> <p>Data Support requested the firm to resubmit the Bases of Preparation to contain this information.</p> <p>Data Support requested this information from the firm.</p>
<p>§ 9(2)(b)(ii) [REDACTED] NIL</p>	
<p>§ 9(2)(b)(ii) [REDACTED] The firm did not provide electricity data in the Data Form which was expected.</p>	<p>Data Support requested the firm to resubmit the Data Form to include electricity consumption.</p>
<p>§ 9(2)(b)(ii) [REDACTED] The firm has included in the emissions tab the consumption of used/waste oil which is below the obligation threshold.</p> <p>The firm has not indicated in the Bases of Preparation that revenue from by-products has been excluded.</p>	<p>Data Support has advised the firm that unless an obligation is present for the use of waste/used oil then it must be excluded from the emissions as per Emissions Rule 4.</p> <p>Data Support requested the firm to resubmit the Bases of Preparation to clarify this.</p>
<p>§ 9(2)(b)(ii) [REDACTED] NIL</p>	
<p>§ 9(2)(b)(ii) [REDACTED] The firm included commission in Box 15 Transport Costs in the Data Form which should be excluded.</p>	<p>Data Support requested the firm to resubmit the Data Form to exclude commission.</p>
<p>§ 9(2)(b)(ii) [REDACTED] Firm did not provide electricity data in the Data Form which was expected.</p> <p>It appears firm has entered emissions data in the Data form in kilograms rather than tonnes.</p>	<p>Data Support requested the firm resubmit the Data Form to include electricity consumption as well as an updated Bases of Preparation.</p> <p>Data Support requested the firm to resubmit the Data Form converting the emissions data to tonnes if required.</p>
<p>§ 9(2)(b)(ii) [REDACTED] The firm has provided an incorrect calorific value for Coal in Box 21 of the Data Form, values are in MJ/Kg not TJ/t units.</p>	<p>Data Support has requested the firm to resubmit the Data Form correctly completed.</p>
<p>§ 9(2)(b)(ii) [REDACTED] Firm has provided actual sales revenue in the Data Form but completed Boxes 16 Observable Market Price in the Bases of Preparation</p> <p>The firm has indicated in the Bases of Preparation that by-products have not been excluded from total revenue.</p> <p>The firm specified in the Bases of Preparation that it wishes to apply Revenue Rule 5, while the firm has not applied Revenue Rule 5 in the data form.</p>	<p>Data Support requested the firm to resubmit the Bases of Preparation to correct this.</p> <p>Data Support requested the firm to resubmit the Bases of Preparation to clarify it has been excluded.</p> <p>Data Support requested that the firm provide either an amended Bases of Preparation or amended Data Form so that the preference of applying Revenue Rule 5 is clearly stated.</p>
<p>§ 9(2)(b)(ii) [REDACTED] NIL</p>	

<p>§ 9(2)(b)(ii)</p> <p>Firm has not entered production, sales and revenue or emissions data into the Data Form.</p>	<p>Data Support requested the firm to resubmit the Data Form to provide this information.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>The firm has included in the emissions tab the consumption of used/waste oil which is below the obligation threshold.</p>	<p>Data Support has advised the firm that unless an obligation is present for the use of waste/used oil then it must be excluded from the emissions as per Emissions Rule 4.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>Firm has provided emissions data in Box 20 in the Data Form however firm does not heat its hothouse.</p>	<p>Data Support requested the firm to resubmit the Data Form to remove emissions data from the Data Form.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>Firm has provided emissions data in Box 20 in the Data Form however firm does not heat its hothouse.</p>	<p>Data Support requested the firm to resubmit the Data Form to remove emissions data from the Data Form</p>
<p>§ 9(2)(b)(ii)</p> <p>The firm has not provided a weighted average calorific value of coal - bituminous in the Data Form.</p>	<p>Data Support requested the firm to resubmit the Data Form including this value.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>The firm has entered emissions data into the comments box in the Data form rather than the boxes for each year. The Firm has also included its emissions data in the incorrect unit.</p>	<p>Data Support requested the firm to resubmit the Data Form to include the emissions data correctly.</p> <p>The resubmission received was incorrect. Based on discussions with MFE, this firm's data was not included in the database as it was a small firm (less than 1% of production) and it had already had to resubmit its data form due to errors in its emissions data.</p>
<p>§ 9(2)(b)(ii)</p> <p>Firm has provided emissions data in Box 20 in the Data Form however firm does not heat its hothouse.</p>	<p>Data Support requested the firm to resubmit the Data Form to remove emissions data from the Data Form.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>The firm has provided an incorrect calorific value for coal in the comments box of the Data Form, values are in MJ/kg not TJ/t units.</p> <p>Firm has not provided information in the Bases of Preparation on how it has apportioned direct emissions.</p>	<p>Data Support has requested the firm to resubmit the Data Form correctly completed.</p> <p>Data Support has requested the firm to resubmit the Bases of Preparation to include this information.</p> <p>Erroneous resubmission was received and the firm's data has been excluded from the database.</p>
<p>§ 9(2)(b)(ii)</p> <p>No units have been entered for Box 13 Units Sold Externally. As a consequence total revenue has not calculated.</p> <p>The firm has entered incorrect data in Box 11 & 12 for 2006/07.</p>	<p>Data Support requested the firm to resubmit the Data Form including the units sold externally.</p> <p>Data Support requested the firm to resubmit the Data Form correcting the incorrect data.</p>

<p>§ 9(2)(b)(ii)</p> <p>The firm did not indicate in the Bases of Preparation the method used to determine production of product and activity or provided data/source for production of product and activity.</p>	<p>Data Support requested the firm to resubmit the Bases of Preparation to include this information.</p>
<p>§ 9(2)(b)(ii)</p> <p>No units have been entered for Box 11 Units Produced of Product and Box 12 Activity Outputs Produced.</p> <p>The firm has not provided a weighted average calorific value of coal lignite – all other fields, or peat in the Data Form.</p>	<p>Data Support requested the firm to resubmit the Data Form including the units produced of product and activity outputs produced.</p> <p>Data Support requested the firm to resubmit the Data Form including this value.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>Bases of Preparation and Statutory Declaration not submitted.</p> <p>The firm did not provide electricity data in the Data Form which was expected.</p>	<p>Data Support requested the firm submit the Bases of Preparation and signed declaration.</p> <p>Data Support requested the firm resubmit the Data Form to include electricity consumption.</p>
<p>§ 9(2)(b)(ii)</p> <p>The firm has not entered any financial data into the Data Form because it has only started growing on 1 July 2009.</p>	<p>Data Support has not included the firm in the survey.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	
<p>§ 9(2)(b)(ii)</p> <p>Bases of Preparation and Statutory Declaration not submitted.</p> <p>The firm has included in the emissions tab the consumption of used/waste oil which is below the obligation threshold.</p>	<p>Data Support requested the firm submit the Bases of Preparation and signed declaration.</p> <p>Data Support has advised the firm that unless an obligation is present for the use of waste/used oil then it must be excluded from the emissions as per Emissions Rule 4.</p>
<p>§ 9(2)(b)(ii)</p> <p>NIL</p>	

<p>§ 9(2)(b)(ii) [redacted] No units have been entered for Box 11 Units Produced of Product, Box 12 Activity Outputs Produced and Box 13 Units Sold Externally.</p> <p>The firm has indicated in the Bases of Preparation that the revenue data in Box 14 is exclusive of transportation costs recovered, However, transportation costs have been entered into Box 15.</p> <p>Firm has not entered emissions data in the Data Form for Coal sub-bituminous or provided a weighted average calorific value for coal.</p>	<p>Data Support requested the firm to resubmit the Data Form including the units produced of product, activity outputs produced and units sold externally.</p> <p>Data Support has requested the firm resubmit the Data Form deleting data entered into Box 15 or resubmit the Bases of Preparation to provide clarity regarding this issue.</p> <p>Data Support requested the firm to resubmit the Data form to include this data.</p>
<p>§ 9(2)(b)(ii) [redacted] The firm has recorded data in Box 11, 12 & 13 in the Data Form in kilograms not tonnes as required.</p> <p>Electricity consumption appears unreasonably low.</p>	<p>Data Support has requested the firm resubmit the Data Form to record the correct units.</p> <p>Data Support requested the firm resubmit the Data Form to correct the electricity consumption data.</p>
<p>§ 9(2)(b)(ii) [redacted] The firm has not provided a weighted average calorific value of coal bituminous in the Data Form.</p> <p>Firm has not entered the emissions source for coal in the Bases of Preparation.</p>	<p>Data Support requested the firm to resubmit the Data Form including this value.</p> <p>Data Support requested the firm to resubmit the Bases of Preparation to include this information.</p>
<p>§ 9(2)(b)(ii) [redacted] The firm did not indicate in the Bases of Preparation the method used to determine production of product or provided data/source for production of product.</p> <p>No data has been entered for Box 14 Revenue from Units Sold Externally and Box 15 Transport Costs to Market for Units Sold Externally in the Data Form</p> <p>The firm has not indicated in the Bases of Preparation that revenue from by-products has been excluded.</p>	<p>Data Support requested the firm to resubmit the Bases of Preparation to include this information.</p> <p>Data Support requested the firm to resubmit the Data Form to include this data.</p> <p>Data Support requested the firm to resubmit the Bases of Preparation to clarify this.</p>
<p>§ 9(2)(b)(ii) [redacted] No units have been entered for Box 12 Activity Outputs produced, Box 13 Units Sold Externally and Box 15 Transport Costs to Market for Units Sold Externally in the Data Form.</p> <p>The firm has not provided a weighted average calorific value for coal lignite – all other fields or peat in the Data Form.</p>	<p>Data Support had requested the firm to resubmit the Data Form to include this data.</p> <p>Data Support requested the firm to resubmit the Data Form including this value and an amended Bases of Preparation to disclose the basis for determining the calorific value.</p> <p>No resubmission was received and the firm's data has been excluded from the database.</p>
<p>§ 9(2)(b)(ii) [redacted] No units have been entered for Box 11 Units Produced of Product and Box 12 Activity Outputs Produced.</p> <p>Firm has not disclosed in the Bases of Preparation the method used to determine the market price for the 2008/9 year.</p> <p>The firm has not provided a weighted average calorific value for coal lignite – all other fields or peat in the Data Form.</p>	<p>Data Support had requested the firm to resubmit the Data Form to include this data.</p> <p>Data Support had requested the firm to resubmit the Bases of Preparation to disclose this.</p> <p>Data Support requested the firm to resubmit the Data Form including this value.</p> <p>Erroneous resubmission was received and the firm's data has been excluded from the database.</p>

Areas of risk

In assessing eligibility, the emissions intensity level for the production of fresh tomatoes activity is towards the lower end of the moderately emissions intensity threshold at 926.4 tonnes CO₂/NZ\$1m. Accordingly, there is risk associated with both the revenue and emissions data.

The production data submitted by the firms is significantly lower than the amount of extrapolated NZ production contained in the Manual. This is to be expected as only a small number of firms submitted data compared the anticipated numbers, and the Manual data was prepared on an industry wide basis. We consider medium risk is associated with the production data.

All submissions used actual sales revenue to derive a market / gate price. There is a wide spread of market / gate price for tomatoes ranging from \$814 per tonne to \$10,565 per tonne. The average of the market / gate price of the product is approximately \$3,342 per tonne compared to the average value of \$2,700 per tonne of the prices stated in Table 61 of the Manual. Based on the submissions received, firms with a very high market gate price are generally cherry tomato growers.

Transport costs incurred by the submitters range from \$0 per tonne to \$1,247 per tonne, with the average being \$222 per tonne. The average gate price per tonne (after taking into account transport costs) of the five firms with the highest transport cost is \$6,380, which is significantly higher than the average market / gate price.

The top eight producers by the quantity of output and revenue represent 80% of the industry's total production and 77% of the total revenue. The average market / gate price of the top eight producers is \$2,819 per tonne, and ranges from \$2,339 to \$3,911 per tonne. This average market / gate price is lower than the submitters' average but is above the average value as stated in the Manual. As the average market / gate price of the top producers is lower than the submitters' average, there is some risk associated with revenue data submitted by the larger firms. However, the revenue of the top eight producers would have to increase by 20% before the industry's level of eligibility falls below the moderate level.

Given that the emissions per NZ\$1m revenue is 926.4tCO₂, and assuming that the emissions output of 203,859tCO₂ is correct, the revenue would have to increase by \$34.78m (i.e. increase by 16%) before the level of eligibility falls below the moderate level. On this basis, low risk is associated with the revenue data.

For eligibility purposes, assuming that revenue of \$220.05m is correct, then emissions will have to decrease by 27,820tCO₂ (i.e. decrease by 14%) before the industry will fall outside the moderate level of eligibility. There is low risk with the emissions data impacting on the industry's eligibility level.

The composite allocative baseline ranges from 0 tCO₂/t to 15.94tCO₂/t and the average based on number of submitters is 3.0068tCO₂/t. The average emissions intensity based on the Manual is 3.1tCO₂/t and the range is likely to be from 0.8tCO₂/t to 7.3tCO₂/t. The average emissions intensity of the submitters is slightly lower than the average provided in the Manual. The Manual data is based on a 2003 year survey, and it is unclear the extent to which the emissions mix may have changed since that time. In addition, it is unclear of the locations and mix of firms included in the 2003 survey. Taking into account South Island submitters only, the average composite baseline is 5.591tCO₂/t.

Four firms have emissions intensity above the range described in the Manual, they are based in the South Island and are coal users. The top two firms with the highest emissions intensity are both cherry tomato growers. Cherry tomatoes production is lower compared to normal tomatoes. As such, it is likely that the allocative baseline for cherry tomato growers will be disproportionately higher than normal tomato growers.

These four firms are also outliers among coal users. However, if their production data is correct and we assumed that their composite allocative baseline should be 5.382tCO₂/t, then the industry's allocative baseline will move from 2.426tCO₂/t to 2.395tCO₂/t (i.e. decrease by 1%).

s 9(2)(b)(ii) are the outliers when compared to the other gas submitters. Together, their production contributes to 4% of all submitters' production. If their production data is correct and we assumed that their composite allocative baseline should be 1.819tCO₂/t, then the industry's allocative baseline will move from 2.426tCO₂/t to 2.336tCO₂/t (i.e. decrease by 4%).

There is a wide range of allocative baselines among the submitters and particularly high outliers. The average allocative composite baseline of all submissions on a per firm basis is also higher than industry's composite allocative baseline of 2.426tCO₂/t. On this basis, it is considered that there is medium risk associated with the emissions data for allocative baseline purposes.

Overall, it is considered that the risk associated with the data submitted is medium.

APRIL 2024

New Zealand ETS Industrial Allocation

Data Collection 2023



16. Activity: Production of Fresh Tomatoes (Gazette notice: 2023-sl4737)

Title: Call for the Provision of Data (Production of Fresh Tomatoes) Notice 2023

Report on activity data, revenue and emissions intensity.

Activity summary

Allocative baseline change (%)	Materiality of change ¹⁵²	Primary reason(s) for change
-42.61%	High	No submission from firms with comparatively high allocative baselines that submitted in the 2010 data collection.

Overall, the data collected met the defined validation and completeness checks. There is considered to be a high risk associated with the data submitted for the activity of the Production of Fresh Tomatoes.¹⁵³

Criteria	Risk	Rationale
Activity allocative baseline change.	Medium	The decrease in allocative baseline was -42.61% compared to the regulations. It was noted that firms with high allocative baselines (compared to other firms and the overall activity) from the 2010 data collection exercise did not submit data in the 2023 data collection period.
Number of submitting firms within the activity.	High	The number of firms (26) submitting for this activity is different to the number of firms that submitted in 2010 (62). Firms that submitted in 2010 but did not submit in 2023 were not in the EPA contact list provided and did not receive allocations in 2022.
Submission consistency and supporting information.	Medium	There is a statistical variability of 116% in the data submitted by the firms. Supporting information or details on calculations used or apportionment was provided by all firms.
Third-party references.	High	The data is inconsistent with third-party data sources for production, revenue, and emissions.

¹⁵² See [Appendix 1](#) for further information on the materiality threshold applied for allocative baseline changes.

¹⁵³ See [Appendix 1](#) for the full list of completeness and validation checks completed.

Background to activity¹⁵⁴

Activity definition	The biological transformation of tomato seedlings in their final growing position to produce tomatoes.
Activity outputs	a. Fresh tomatoes of saleable quality
Product basis of allocation	The total tonnes of fresh tomatoes that are: produced by carrying out the activity; and of saleable quality.

Observations on data submitted

Table 1. Composition of data submitted in 2023 and 2010.

Submission year	Total firms reported	Average yearly production volume (t)	Average yearly revenue (\$ million)	Average yearly Emissions (tCO ₂ e)	Emissions Intensity (tCO ₂ e/\$ million)
2010	62	26,650.33	73	67,953.00	926.43
2023	26	28,703.49	102	45,770.50	447.19
Difference (2010-2023)	-36	2,053.2	29	-22,182.5	-479.2

An EAF of 1 was used for the 2010 and 2023 emissions intensity calculation. Emissions intensity was calculated prior to rounding values for average yearly revenue and average yearly emissions. These figures may be subject to minor discrepancies due to rounding.

A total of 27 firms responded to the call for data for the Production of Fresh Tomatoes in 2023, compared with 62 firms in the 2010 data collection exercise. The data from one firm, 9(2)(b)(ii) [REDACTED], was disregarded due to concerns with the data quality. Accordingly, the observations on data submitted have been determined by the remaining 26 firms.

The number of firms that submitted in the 2023 data collection is fewer than the 62 firms that reported in the 2010 data collection exercise and the 39 firms provided in the EPA contact list. However, it is higher than the number of firms (21) that received allocations in 2022. Of the 39 firms in the EPA contact list, three had requested to be removed from the contact list.

¹⁵⁴ New Zealand Government. 2023. Call for the provision of data (Production of Fresh Tomatoes) Notice 2023. Available at: <https://gazette.govt.nz/notice/id/2023-sl4737>

An additional 9 firms were contacted as potentially eligible to submit data for the Production of Fresh Tomatoes; these firms were identified through the ANZSIC code for tomato growing

under the NZ Companies Register. From the additional list of firms contacted, none requested to be removed from the mailing list and one firm, A1 Tomatoes Limited, responded. It is noted from Tomatoes NZ that the number of smaller growers have dramatically reduced in number while larger growers have increased in size which may explain why the production has increased despite the decreasing number of firms.¹⁵⁵ Tomatoes NZ, the industry body for tomatoes in New Zealand, contacted the Industrial Allocations inbox throughout the data collection period to stress that it was the tomato harvesting period, making it difficult for firms to complete the data collection activity.

Contact details were not identified for all 2010 firm submitters that did not submit in 2023 as they were neither included in the contact list provided by EPA nor received allocations in 2022, as listed below.

Firm name	
A & K Farm Limited	PJ & MJ Fausett Partnership
AJ & JE Ivceovich Partnership Kingbridge Limited	G Williams and A Penman Ltd Gar-Sun Gardens
Aquarius Gardens Limited	Rembrandt van Rijen Limited
Kovati Tam-Yam Gardens	GJ & FE Ormandy
Canaan Garden NZ	Shalom Trading
Little Knoll Greenhouses Limited Cheriton Farm	Great Lake Tomatoes
MA & AM & EM Sanders Partnership	Status Produce Limited
D & AM Bier	Greentop Company Limited · Stephen & Janette Low
McArthur's Berry Farm	Growing Fare Limited
DF Greenhouse Limited Nagra Bros Limited	T & D Turner
Do Hwan Kim	Han Kang
Nortonta Limited	Timaru Investments Ltd (Canterbury Tomatoes)
EM & DC Duncan	Underglass Bombay Limited
P & M.A van der Gulik	Underglass Karaka Limited
Fairfield Produce NZ Limited	Jesi Trust Limited
Farout Tomatoes	W & M Zwart
Packgard Growers 2000 Limited	Joeun Garden
Fons & Ellis Sanders	Wonha Park and Jiim Ryo Park
	K.F & H.J Petrie

¹⁵⁵ Tomatoes NZ. Industry Overview. Accessed via: <https://www.tomatoesnz.co.nz/industry/industry-overview/>

Table 2. Allocative baseline comparison.

Allocative baselines (tCO ₂ e/t)	Electricity emissions	Other emissions	Composite
2010 (historical baseline)	0.1338	2.2930	2.4260
2014 (current baseline)¹⁵⁶	0.1382	2.4624	2.6006
2023 (new baseline)	0.1183	1.3743	1.4926
Change (2014-2023)	-0.020	-1.088	-1.108
Percent change (2014-2023)	-14.40%	-44.19%	-42.61%

The 2014 other emissions allocative baseline was calculated by subtracting the electricity allocative baseline (adjusted to the 2014 EAF) from the 2014 composite allocative baseline provided. These figures may be subject to minor discrepancies due to rounding.

Production data

The average yearly production for tomatoes reported from the submitted data from the 2023 data collection exercise was 28,703 tonnes. From the Tomatoes NZ website, it is reported that New Zealand growers exported 681 tonnes of fresh tomatoes in the 2023 calendar year, and 3316.5 tonnes in 2019 with a note that the decrease in exports has been influenced by COVID-19 and disruptions to sea freight.¹⁵⁷ In addition, a report from Horticulture NZ stated that the production of tomatoes in New Zealand in 2016 was 102,900 tonnes.¹⁵⁸ While the report is based on fresh horticulture production, the report does not explicitly state the type of tomatoes captured and may include products that are non-saleable and discarded. This would provide a total tonnage higher than the submitted data as wasted products are excluded from the Industrial Allocation data collection exercise. The submitted data is significantly lower than the tonnage of tomatoes reportedly produced across these third-party references.

¹⁵⁶ Climate Change (Eligible Industrial Activities) Regulations 2010 (SR 2010/189) (as at 01 January 2024) Contents – New Zealand Legislation. Accessed via: <https://www.legislation.govt.nz/regulation/public/2010/0189/latest/DLM3075101.html>

¹⁵⁷ Tomatoes NZ. 2023. Statistics. Access via: <https://www.tomatoesnz.co.nz/industry/statistics/>

¹⁵⁸ Horticulture NZ. 2017. New Zealand domestic vegetable production: the growing story. Accessed via: <https://www.hortnz.co.nz/assets/Environment/National-Env-Policy/JR-Reference-Documents-/KPMG-2017-NZ-domestic-vegetable-production-.pdf>

Revenue data

The average yearly revenue for fresh tomatoes reported in the 2023 data collection exercise was \$102 million NZD. In contrast, in 2023, Tomatoes New Zealand had reported that there were approximately 140 registered members growing fresh tomatoes, with a farm gate value of over \$185 million NZD (June 2023).¹⁵⁹ The submitted data is lower than the tonnage of tomatoes reportedly produced across these third-party references as data was received from 26 firms.

Emissions data

The top emitting firms, comprising 88% of total emissions for the activity, were s 9(2)(b)(ii)

The source of emissions across these firms ranged from coal, electricity, natural gas, diesel, and waste oil. Of these firms, the apportionment of total site electricity usage to the activity were done by using the proportion of area occupied for tomato growing which introduces some uncertainty to the emissions reported.

It is noted that two emissions-intensive firms that submitted data in 2010 did not submit data in 2023. These firms were Nortonta and Gar-Sun which had allocative baselines above the current allocative baselines in the regulations and 2023 allocative baselines of 6.7277 and 5.6247 respectively.

In addition, seven firms met the exemption threshold (1,500 tonnes of used or waste oil per annum) for the activity of combusting used or waste oil to generate electricity or industrial heat under emission rule four.¹⁶⁰ These firms were:

s 9(2)(b)(ii)

¹⁵⁹ Climate Change (Eligible Industrial Activities) Regulations 2010 (SR 2010/189) (as at 01 January 2024) Contents – New Zealand Legislation. Accessed via: <https://www.legislation.govt.nz/regulation/public/2010/0189/latest/DLM3075101.html>

¹⁶⁰ Emissions Rule 4: exemptions, as noted in the Industrial Allocation Guide To Data Collection 2023 which lists the relevant exemption thresholds for emission sources that are eligible under section 161E(2)(a)(i) of the Act. This includes the following activities: Using geothermal fluid to generate electricity or industrial heat; Combusting used or waste oil to generate electricity or industrial heat; Importing coal; and, Producing iron or steel. Accessed via: <https://environment.govt.nz/publications/industrial-allocation-guide-to-data-collection-2023/>

COVID-19 impacts

Four firms nominated the 2020/2021 year to be disregarded from the allocative baseline calculations; these were Castle Rock Orchard Ltd, T&G Global Ltd, Vege Fresh Growers Ltd and Hanna Hothouse Ltd. These firms noted that they were considered essential businesses during the COVID-19 pandemic and provided the following reasons regarding COVID-19 impacts:

s 9(2)(b)(ii)

Activity's trade exposure

In Q4 2023, New Zealand's total exports of tomatoes to the rest of the world totalled \$2.21 million NZD and imports totalled \$1.99 million NZD. The top five export destinations were Japan, Hong Kong, French Polynesia, Fiji and the USA. The top import origin country was Australia. Of these countries, none currently have a national emissions scheme covering the Production of Fresh Tomatoes.^{161 162 163}

Areas of risk and limitation

The 2023 data collection period had 26 companies submit data which is lower than the 62 firms that submitted during the 2010 data collection exercise and covers less production than the total production in New Zealand. However, the number of firms which submitted data aligns with the number of firms that received allocations in 2022. It is noted that during the 2023 data collection period, Tomatoes NZ communicated that other firms may be unable to meet the data requirements specified in the Gazette notice.

The data provided by the firms met the defined validation and completeness parameters. The percentage change in the allocative baseline (-42.61%) is materially different to the baseline in regulations. It is noted that highly emitting firms (Nortonta and Gar-Sun) from the 2010 data collection exercise did not submit data in 2023. The level of detail within the Basis of Preparation also differs across firms including measurement and apportionment methods.

¹⁶¹ The World Bank. 2024. Carbon Pricing Dashboard. Accessed via: <https://carbonpricingdashboard.worldbank.org/>

¹⁶² International Carbon Action Partnership. 2024. ETS Map. Accessed via: <https://icapcarbonaction.com/en/ets>

¹⁶³ International Energy Agency. 2024. Policies database: Tomatoes. Accessed via: <https://www.iea.org/policies?sa=D&source=docs&ust=1712005530284042&q=tomatoes>