

Partners in Sustainability

Carbon Neutral Manufacturing: 4 Seasons

Four Season Company has been committed to animal health and nutrition for near 30 years; researching and manufacturing feed supplements that respond to the needs of rural communities throughout Australia and south-east Asia-Pacific.

Being part of the Australian rural community for so many years and experiencing first-hand the impact of climate change on our environment, Four Season Company endeavours to explore methods to create a positive environmental contribution, such as our:

- investment in carbon emission reduction research
- investment in carbon emission reduction projects
- research into alternative carbon-reducing animal feed sources for use in dietary supplements that reduce methane production
- implementation of carbon sequestration strategies at farm
- ongoing commitment to the reduction of actual carbon emissions at our manufacturing facility; and
- achieving accreditation of ***Certified Carbon-Neutral !***



Certified Carbon Neutral

Four Season's journey toward becoming Carbon-Neutral has been possible with the successful collaboration with our strategic partners, Ternes Scientific and Data Farming.

Ternes Scientific and **Four Season Company** have been working with **Data Farming** to develop a full set of carbon accounts for the stockfeed manufacturing business and identify pathways where carbon insets can be delivered to manufacturing through the integration of carbon reserves from farms.

Over a period of 2021 to 2024, Scope 1, 2 and 3 emissions profiles for Four Season's sheep farm at Goulburn - a fine wool producing property – and feed block manufacturing operation based in Crestmead QLD were calculated. The analysis took data series for soil carbon vegetation and farm systems emissions to determine the overall footprint of the business supply chain.

Critical to the success of the project was the work by Data Farming on vegetation mapping. Calculating the amount of woody vegetation over large properties in fine detail can be a daunting task for a landholder and carbon companies. Drones can be used, but scale beats them; and using an ecologist to walk a whole property is time consuming, inefficient, and costly. Data Farming has developed a process to use ultra-high resolution satellite imagery to automatically calculate foliage projected cover

(FPC) in grazing lands. Using a recent 50cm pixel resolution capture, we were able to accurately and quickly map the whole of Goulburn property and provide the results in an easy to use format for carbon accounting.

Certification Summary

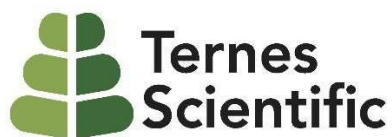
Emissions of greenhouse gases from the farm at Goulburn amounts to 988 t CO₂e per annum. The total sequestration of carbon at the farm was 1533 t CO₂e. The emissions balance was 545 t CO₂e that could be re-distributed to the feed manufacturing business at Crestmead as carbon insets. Carbon insets are critical to achieving low emissions manufacturing and securing in the medium term a pathway to net zero for Australian livestock feed products.

The emissions (Scope 1, 2 and 3) associated with manufacturing of feed blocks averages as 325 t CO₂e per annum. The majority of greenhouse gas emissions were associated with electricity and waste management (more than 55%)

The greenhouse gas emissions embedded within feed blocks manufactured were determined using life cycle analysis and ISO 14040. The analysis represented more than 6500 tons of salt and molasses feed blocks being manufactured each year. For individual product categories, the embedded emissions for molasses was 216 kg CO₂e per ton whereas salt urea blocks had embedded greenhouse gas emissions of 320 kg CO₂e per tonne.

Embedded emissions in feed blocks represent the pathway to net zero and are important in accounting for emissions on farms where animals consume the feed product. Emissions from the manufacturing processes were offset by insets derived from carbon stocks held at the Goulburn farm.

Further work at Goulburn is planned to build carbon stocks on areas of the farm that are low productivity or degraded, thereby building a sustainable carbon negative wool and feed manufacturing operations through increasing soil and vegetation carbon stocks (the process of sustainable intensification).





Four Season farm's new perennial pastures that increase carbon sequestration rates and boost feed quality.