Wine Australia

Carbon accounting tools for the Australian grape and wine sector

August 2023



As detailed in the Emissions Reduction Guide, determining the carbon footprint of your business is an important first step in managing greenhouse gas emissions.

A variety of carbon footprinting tools are available that can help wine businesses measure and manage their emissions, and many of them are freely available. Tools range in complexity from free basic calculators to more sophisticated systems which can be purchased.



The first question to ask is why you are measuring your carbon footprint and who the information is for. Maybe you are taking the first step in emissions reduction, to understand what your starting point is and where the opportunities are for action. Maybe you have ambitions to leverage your activity in carbon analysis and management to drive increased engagement with your supply chain. Or maybe emissions management is part of accelerating impact in other sustainability focus areas that you control. Whatever the drivers, there is a tool to get you started.

Smaller businesses or businesses that are yet to measure the key sources of emissions within their supply chain will benefit from using the <u>Australian</u> <u>Wine Carbon Calculator</u>.

The Australian Wine Carbon Calculator is available as a stand-alone tool and is also embedded in the Sustainable Winegrowing Australia (SWA) program. Members of the program that provide data into the SWA platform have their Scope 1 and 2 emissions footprint calculated annually. For businesses that are seeking a carbon-focused,

For businesses that are seeking a carbon-focused, no-expense solution and are familiar with GHG emissions accounting, you will benefit from accessing and using the <u>International Wineries for Climate Action</u> <u>Australia GHG Calculator</u>.

For medium-sized and larger business, consider a more complete solution such as that offered by <u>SupplyShift</u>. SupplyShift offers a comprehensive tool that allows you to collect supplier data to calculate your Scope 3 emissions, and engage your supply chain in a meaningful way to advance your sustainability goals across social, environmental, and governance practices.

Data required for calculating your business emissions

The emissions from your business operations are divided into three distinct categories known as Scope 1, Scope 2 and Scope 3.

You will need a variety of business operational data to calculate your Scope 1 and Scope 2 emissions and an even greater level of data to calculate your Scope 3 emissions.

Here is a list of some of the data you will require to calculate the direct (Scope 1 and 2) emissions from the operation of your business, usually within a financial year time period:



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Scope 1 and 2: Vineyard

Fuel usage data, organised by fuel type and use, e.g., 8,000 litres of diesel for tractors and frost fans, 300 litres of unleaded petrol for quad bikes.

Electricity usage data, sourced from electricity bills, e.g., 300 kilowatt-hours per year.

The quantity and type of refrigerants used in onsite, such as heating, venting and air-conditioning (HVAC) systems of vineyard sheds and offices. Note: the refrigerant type used in your HVAC system is listed on the asset.

The quantity and type of nitrogenous fertiliser applied to the vineyard over the financial year period.

The area of your vineyard, e.g., 42 hectares.



→ Fuel usage data, organised by fuel type and use, e.g., 20,000 litres of diesel for forklifts, 5000 litres of LPG for forklifts, water heating and HVAC systems.

- → The quantity of wastewater produced and treated and the treatment method.
- → Electricity usage data, sourced from electricity bills, e.g., 300 kilowatt-hours per year.
- → The quantity and type of refrigerants used in winemaking and HVAC systems, Note: the refrigerant type used in your HVAC and cooling systems is listed on the asset. Ammonia does not need to be factored into calculations.



Data required for calculating your business emissions

Calculating the emissions associated with your business extends beyond the emissions that you directly generate through your operations.

The decisions you make in terms of how you manage waste materials, the goods and services you purchase, consumer disposal of packaging, transport from your business and even how your employees commute to and from your workplace are all attributed in some way to your business. These emissions are known as indirect or Scope 3 emissions. As outlined in the Guide, this data will become easier to collect as our supply chain partners address their Scope 1 and 2 emissions. In the meantime, a collective industry approach which includes data sharing is recommended. In general terms, calculating supply chain emissions will include an understanding of:



Scope 3: All organisations

- → The goods and services purchased within a one year period and the dollar amount spent with each supplier.
- → How your waste is disposed of or recycled and the quantity of waste disposed of and recycled within a 12-month period.
- → The distance of your sold product from market(s) and the quantity of sold product sent to market.
- → The type of packaging used to package your product and the destination markets.

- → Total quantity of goods sold and the number of each product sent to each destination market.
- → Flights, taxis, ride-share and other transport distances or costs associated with business travel.
- → The number of full-time equivalent employees in your business.
- → Information related to investments and any franchises you operate, leased assets and assets you lease.



Recommended carbon accounting tools

We have developed a decision tree to act as a guide for those seeking to use tools to either commence or progress their emissions reduction journey.

It is important to understand that each tool on the market provides some level of assistance. However, following the decision tree opposite will suggest one of three recommended tools that is most likely to suit an individual business, based on:

- business maturity
- experience with carbon/emissions calculator tools
- understanding of your own business operations
- understanding of carbon/emissions accounting
- willingness, support and finances to act to reduce emissions.

For those who either do not know the emissions generated from their direct business operations or who are new to calculating GHG emissions, the <u>Australian Wine Carbon Calculator</u> is a great place to start.

If you already know your direct emissions and are seeking to calculate your indirect emissions arising from the purchase of goods and services and other areas of your business, such as waste generation, it is recommended you try the free <u>IWCA GHG Calculator for Australia</u>.

For larger businesses and/or those needing comprehensive sustainability reporting, <u>SupplyShift</u> is a useful tool to improve overall environmental and ethical performance of your business and will help you to better understand and manage the main sources of emissions in your supply chain.



Have you calculated the emissions from your business operations before?

Yes

Australian Wine Carbon Calculator

Are you willing to pay for supply chain specific information?

Yes

SupplyShift

No, I just want to calculate all of my business emissions

International Wineries for Climate Action GHG Calculator

Figure 1. The recommended pathways for grape and wine businesses seeking to calculate business GHG emissions



Assessment criteria of carbon accounting tools

A range of tools and resources are available to assist business operators conduct a carbon footprint analysis. Each tool requires the user to input data to calculate emissions for particular emissions categories. The complexity of the tools varies, with some simple Excel tools providing a great starting point for businesses, whilst more comprehensive software packages can help drive supplier performance and provide insights across broader sustainability focus areas. In developing the decision tree, we reviewed eight solutions for their applicability to the Australian wine sector against the following criteria:

Methodology

It's important to choose a carbon calculator that uses a reputable and widely accepted methodology to calculate emissions.

What this means for you

All tools assessed as part of this review utilise the Greenhouse Gas Protocol and/or international standard ISO14064.

Suitability

Consider how far along you are on your emissions measurement and reduction journey and the size of your business.

What this means for you

It is recommended that you understand the emissions directly associated with your business operations (Scope 1 and 2) before investigating emissions indirectly generated by your business (Scope 3).

Emission sources tracked

The calculator should track the relevant emission sources for your business, including direct emissions (Scope 1), purchased electricity (Scope 2), and indirect emissions (Scope 3).

What this means for you

Choose a calculator that suits your business. Use the decision support tree to choose the right tool.

Supplier management capability

Consider the ability of the tool to support your broader sustainability ambitions including how it could support your engagement with your supply chain partners.

What this means for you

Most of your business's emissions are likely to sit in your supply chain (Scope 3). Once you understand your own emissions, it will be helpful to use the tool to communicate with your supply chain about how their emissions impact your footprint. Eventually suppliers can be prioritised based on their emissions footprint.

User friendliness

The calculator should be easy to use and understand, with clear instructions and guidance.

What this means for you

Choose a tool that is right for your level of experience and knowledge. Use the decision support tree to select the right tool for you.

Technical support and training

Some providers offer technical support and training to ensure successful implementation and usage of the calculator.

What this means for you

Use a tool that can help you to understand sources of emissions and ways of managing emissions.

Data-privacy and security

Consider the privacy and security of the data entered into the calculator, as well as the protection of sensitive information.

What this means for you

All the recommended tools contain a high level of security and data privacy.

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Reporting capabilities

The calculator should provide comprehensive and accurate reports that can be easily shared with stakeholders.

What this means for you

Understand the reporting requirements of your organisation, your customers and certification schemes you would like to comply with.

Costs

Consider the cost of the calculator, as well as any ongoing fees for updates or maintenance.

What this means for you

Depending on the needs of your business, a free tool may be sufficient to capture and record your business emissions.

GHG emissions footprinting tools analysis

The following table summarises an analysis of readily available carbon footprinting tools. The analysis has been designed to consider a range of considerations relevant to owners and operators of grape and wine production businesses.

The following pages contain some notes on our assessment, as well as further details on each tool and a link to help you find them.

	Methodology	Emission sources tracked	User-friendliness	Data privacy and security	Reporting capabilities	Suitability	Supplier management capability	Technical support and training	Supplier niche	Cost
Australian Wine Carbon Calculator	GHG Protocol	Direct emissions, purchased electricity	Low	Low risk	Limited	Small business or beginners	Nil	Nil	Australian wine industry	Free
International Wineries for Climate Action GHG Calculator	ISO14064	Direct emissions, purchased electricity and indirect emissions	Low	Low risk	Limited	Businesses who are seeking to better understand Scope 3	Nil	Nil	Australian wine industry	Free
SME Climate Hub Calculator	GHG Protocol	Direct emissions, purchased electricity and some indirect emissions	Medium	Higher risk	Limited	Small business or beginners	Nil	Nil	SMEs	Free
GHG Protocol Emissions Tool	GHG Protocol	Direct emissions, purchased electricity and some indirect emissions	Low	Low risk	Limited	Small business or beginners	Nil	Nil	Individual businesses	Free
SupplyShift	GHG Protocol + ISO14064	Direct emissions, purchased electricity and some indirect emissions	High	Low risk	Yes	Businesses who are seeking to better understand Scope 3	Good: a range of sustainability focus areas	Great	Complex supply chains	\$\$ (Free for a GHG starter assessment)
Carbon Trust SME Calculator	GHG Protocol	Direct emissions, purchased electricity and some indirect emissions	Medium	Low risk	Yes	Businesses who are seeking to better understand Scope 3	Not directly	Good	Complex supply chains	\$\$
SEDEX	GHG Protocol + ISO14064	Direct emissions, purchased electricity and some indirect emissions	Medium	Low risk	Yes	Businesses who are seeking to better understand Scope 3	Good: ethical focus areas	Good	Complex supply chains	\$\$\$
EcoVadis	GHG Protocol	Direct emissions, purchased electricity and some indirect emissions	Medium	Low risk	Yes	Businesses who are seeking to better understand Scope 3	Good: Ethical focus areas	Good	Complex supply chains	\$\$

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JEA

Key: \$\$: \$5000 - \$15 000 per annum | \$\$\$: \$15 000+ per annum



Australian Wine Carbon Calculator

AWR Australian Wine Research

RESEARCH & DEVELOPMENT SERVICES TO INDUSTRY AFFINITY LABS ABOUT THE AWRI



THE AUSTRALIAN WINE RESEARCH INSTITUTE > SERVICES TO INDUSTRY > SUSTAINABLE WINEGROWING AUSTRALIA > CARBON CALCULATOR

CARBON CALCULATOR

Summary of the tool: Excel based emissions calculator

- \rightarrow Vineyard electricity, fuel use and fertiliser use.
- → Winery electricity use, refrigeration use, wastewater production and use of dry ice (Scopes 1 and 2).
- → Note that this is the same tool that is available to members of Sustainable Winegrowing Australia (SWA).

Access: Via the AWRI website.

Applicability: Growers and winemakers beginning their emissions quantification journey.

Pros: Freely available and a great starting point for those wanting to better understand the sources of their emissions. The tool includes information on Scope 1 and 2 emissions for both vineyard and winery operations. The tool has been developed in Microsoft Excel, is easy to understand and follow and provides information in kg of carbon dioxide equivalent per hectare of vineyard area, per tonne of grapes produced or per litre of wine produced.

Cons: Limited availability to include areas of Scope 1 and 2 that are considered relevant and material to decarbonisation efforts. Scope 3 emissions cannot be calculated within the tool and the inclusion of some Scope 1 and 2 categories and not others is not well justified. Although the Excel version is updated alongside the SWA version, benchmarking and data tracking is only available in the tool embedded in the SWA platform.

International Wineries for Climate Action GHG Australia Calculator



Summary of the tool: Excel based emissions calculator

This calculator includes all GHG emissions categories required to be considered in alignment to ISO14064 and some additional optional categories.

Access: <u>Via the International Wineries for Climate</u> Action website - a username, email address and organisation name is required to access the link to download the Microsoft Excel based tool.

Applicability: Those with an intermediate to advanced understanding of emissions footprint analysis.

Pros: This tool allows the user to gain an accurate account of all the material and relevant grape and wine production emissions sources. The boundary extends from grape production to the end of life of the product (packaging). The tool allows for benchmarking against an IWCA average, and is a great tool for those seeking to update their footprint.

Cons: This tool assumes at least some understanding and knowledge of calculating GHG emissions. A basic understanding of Microsoft Excel is required. The time and labour associated with gathering and sorting the data required for this tool is likely be over 40 hours.



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SME Climate Hub Calculator



Summary of the tool: Web-based emissions calculator

This website-based tool requires the user to create a business profile and input data from your business into the calculator. The data is then provided in tabulated and chart format, allowing for an understanding of key emissions production areas within your business, including some Scope 3 emissions.

Access: Via the SME Climate Hub website.

Applicability: Winemakers starting their journey or in the intermediate steps of taking action.

Pros: This tool allows those who are early in their emissions quantification journey to gain an understanding of their Scope 1, 2 and select Scope 3 emissions. This tool is more suitable for use by wineries or vertically integrated businesses, as it will help wineries to quantify and better understand the major source of emissions from the supply chain. The tool is easy to use, guiding the user via a step-by-step website. The outputs are visually appealing and easy to follow. The website also provides resources to assist the user to reduce their footprint through taking a free online course.

Cons: This tool is applicable to all businesses but is probably not the best tool for growers. Before you start using the tool, ensure you have the data required to answer the questions accurately.

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Carbon Trust SME Calculator



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Home | Our work and impact | Guides, reports and tools | SME Carbon Footprint Calculator

SME Carbon Footprint Calculator

Calculate your organisation's emissions - for small and medium-sized businesses.



Summary of the tool: Web-based emissions calculator

A website-based tool, designed for SMEs. This tool allows for the calculation of a range of Scope 1 and 2 emissions only.

Access: Via the Carbon Trust website.

Applicability: Useful for those starting their journey who would like to know more about their Scope 1 and 2 emissions, but not recommended over other tools assessed here. **Pros:** This tool is similar to other online tools, allowing the user to quickly identify emissions from key emissions sources, such as electricity usage, select refrigerant usage and fossil fuel use.

Cons: This tool is simplistic in design and not specifically designed for use in the wine industry. Furthermore, the emissions information provided is not tailored to Australia. The functionality of the tool is not as user-friendly as the SME Climate Hub tool or as applicable to the Australian wine sector as the Australian Wine Carbon Calculator.



GHG Protocol Emissions Tool



Summary of the tool: Excel based carbon calculator

An Excel based tool designed to provide a high-level overview of direct emissions (fuel combustion, refrigerants), purchased electricity and select indirect emissions, such as employee commuting and business travel.

Access: The tool is available for download on the GHG Protocol website.

Applicability: Useful for those starting their journey who would like to know more about their Scope 1 and 2 emissions.

Pros: This Excel based tool is useful for those wanting to better understand the emissions sources which they have greater control over. It is a beneficial tool for those wishing to better understand emissions related to onfarm or winery fuel, refrigerant and electricity use. More relevant for grapegrowers than winemakers. The tool can be used by Australian businesses.

Cons: For most grape and wine businesses, the majority of emissions are attributed to the supply chain. As such, this tool does little to upskill and inform businesses of ways in which to reduce emissions from the supply chain.

SupplyShift



Summary of the tool: Web-based supplier management system

SupplyShift is a cloud-based platform that provides tools to manage and improve sustainability performance. It includes a carbon calculator that enables companies to assess their carbon emissions across their entire supply chain and identify areas for improvement.

Access: <u>Via the SupplyShift website</u>.

Applicability: This platform would be well-suited for larger organisations with complex supply chains that require detailed risk assessments and comprehensive sustainability reporting.

Pros: SupplyShift offers a comprehensive supplier management platform that includes sustainability, traceability and risk management. It allows for customised assessments and data collection and provides real-time analytics and dashboards for tracking progress. Scalable support is offered in both set-up and supplier management.

Cons: Some users have reported that the platform can be difficult to set up and configure for the host organisation. In targeting ease of reporting for the supply chain and transparency, the tool has created additional management requirements on the host organisation to ensure suppliers' self-reported data is accurate.



SEDEX

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ESG made easy	Get ahead of risks	Comply with ease	Seamless reporting	
Save time and money efficiently managing supply chain sustainability from one platform	Proactively uncover, manage, assess and mitigate business and supply chain risks	Protect your business and stay one step ahead of current and upcoming legislation	Quickly and easily track and share relevant data with business stakeholders	

Summary of the tool: web-based supply management system

SEDEX is a global platform for managing ethical and responsible business practices in supply chains.

Access: Via the SEDEX website.

Applicability: This platform would be well-suited for organisations with complex supply chains that require detailed risk assessments and supplier collaboration, however may need to be supplemented with other carbon-specific tools.

Pros: SEDEX is a leading supplier management platform that includes a range of sustainability and ethical auditing tools. It allows for collaboration and data sharing among suppliers and provides detailed reporting and analytics.

Cons: The platform is less focused on carbon emissions than others and may require some customisation to meet your specific needs.

EcoVadis



Summary of the tool:

EcoVadis is a platform that provides sustainability ratings and performance improvement tools for companies in supply chains. Its carbon calculator tool enables companies to assess and manage their carbon emissions and provides guidance on how to reduce their carbon footprint.

Access: <u>Via the EcoVadis website</u>.

Applicability: This platform would be well-suited for organisations with complex supply chains that require detailed risk assessments and supplier collaboration across a range of sustainability factors. However, it may need to be supplemented with other carbon-specific tools. **Pros:** EcoVadis is a leading provider of sustainability ratings and assessments and provides a range of tools for managing supplier risks and sustainability performance. The platform includes a detailed scorecard that measures performance across a range of sustainability factors within environment, social and governance (ESG).

Cons: The platform is more focused on social and governance factors than environment and may require additional tools to manage carbon emissions specifically.

Wine Australia

