SCHILLING

HARD CIDER

SCHILLING CIDER PRODUCT SUSTAINABILITY DECLARATION

EXCELSIOR IMPERIAL APPLE CARBON NEUTRAL DOCUMENTATION

ABSTRACT

Schilling Cider has completed significant work voluntarily to account for carbon emissions of its business and in purchasing high quality carbon offset credits to offer 12oz cans of Excelsior Imperial Apple to its consumer carbon neutral.

TABLE OF CONTENTS

1. INTRODUCTION

Schilling Hard Cider takes a holistic three-pronged approach to sustainability and corporate social responsibility. The company embraces technological innovation to reduce its energy consumption and carbon emissions at every step in the supply chain, building this into the production process from day one. As a pioneering leader in the cider industry, Schilling has become a guiding North Star amongst other cideries, encouraging corporate responsibility and planet-friendly sourcing and production practices, prompting a shift in the industry overall. Lastly, Schilling aims to create a working environment in which employees are empowered, menial jobs are machine-automated, and health and wellness are prioritized.

Knowing that creating a sustainable business model is the key to inspiring change within the industry, the company is constantly looking for new and innovative ways to build the business around sustainability to have the broadest impact. The company is committed to running Schilling – from apple to can - as sustainably as possible. This document serves as a public disclosure of Schilling Cider's Carbon Neutrality for its Excelsior Imperial Apple product. While we have made every effort to align our data collection and emission factors with official standards, there may be some discrepancies. This work has been done in good faith, and we are committed to improving accuracy in future years. We have an iterative process in place to enhance our methods and move towards formal verification. This document will be updated annually to reflect these improvements.

2. SCHILLING CIDER EXCELSIOR IMPERIAL APPLE CARBON LIFECYCLE ANALYSIS

2.1 INTRODUCTION

This section of the document details the carbon footprint of Schilling Cider's Excelsior Imperial Apple for the 12oz cans in the calendar year 2023. This data will serve as the foundation for our carbon offsetting strategy to achieve carbon neutrality for the product.

2.2 METHODOLOGY

The methodology used was based on the World Resource Institute (WRI) GHG Protocol Product Standard. This includes GHG emissions from raw materials, production and packaging, distribution, retail and end of life use. These calculations will be the basis of the future purchase of carbon offsets based on monthly sales. Emissions are reported in metric tons CO2e and include the emissions of carbon dioxide, methane, nitrous oxide and refrigerants using AR5 GWPs.

2.2.1 THE PRODUCT

Excelsior Imperial Apple is the flagship product of Schilling Cider, renowned for its exceptional quality and bold flavor. Like all Schilling Cider products, Excelsior Imperial Apple is crafted and produced in Auburn, Washington.

Primary data for the carbon lifecycle analysis calculations was provided by Schilling Cider including:

- Purchased inputs to Excelsior Imperial Apple
- Amount of primary and secondary packaging
- Upstream & downstream transportation
- Primary operational data of production facilities, including energy usage
- Primary data on sales and distribution

2.2.2 ALLOCATION USED

Since Schilling Cider produces multiple products at the same facility, resource use, energy consumption, and emissions were allocated among these products where necessary. A mass-based allocation method was employed for the Excelsior Imperial Apple, given that most products have similar compositions, with cider and water comprising over 90% of their mass. This approach was considered appropriate.

In this method, the allocation considered the volume of the products (12oz cans), and the quantity of cans produced relative to the total volume (oz) of all products produced at the Schilling Cider facility.

2.3 TOTAL CARBON FOOTPRINT

Table 1. Total Carbon Footprint for Excelsior Imperial Apple 12oz

PRODUCT	CRADLE-GRAVE EMISSIONS PER CAN (GRAMS CO2e)
12oz Can Excelsior Imperial Apple	269.09

Table 2. Carbon Footprint by lifecycle stage

LIFECYCLE STAGE	12OZ EXCELSIOR IMPERIAL APPLE (G CO2e)
Upstream	160.91
Production	30.67
Downstream T&D	76.22
EOL (Packaging)	1.30
TOTAL	269.09

2.3.1 UPSTREAM EMISSIONS

Upstream emissions include emissions from the production, and transportation to Schilling's facilities, of:

- Apple cultivation
- Juice Production
- Aluminum*
- Carbon Dioxide
- Paperboard Packaging
- Pallets
- Water

** Note: The emissions for aluminum include the end-of-life recycling of the can, as this is incorporated into the emission factor used.*

2.3.2 PRODUCTION EMISSIONS

Included in the Production emissions are mass based allocation of the energy, waste and fugitive emissions used by Schilling Cider in the production of the products

- Natural Gas
- Propane (Forklift)
- Fugitive Emissions (Refrigerants)
- Purchased Electricity
- Wastewater

2.3.3 DISTRIBUTION EMISSIONS

Schilling Cider is produced in Auburn, Washington and shipped across the continental United States by truck. Primary distribution data by state was used in these calculations.

2.3.4 RETAIL AND PRODUCT USE EMISSIONS

Products are distributed to stores and supermarkets, where they are assumed to be cooled for 6 days. Emissions were calculated using retail emission factors for cooling and lighting, weighted by each distribution state's eGRID data and the quantity of product transported to each state.

Once purchased, it is assumed that the product is taken to the customer's home and refrigerated for two days. Emissions were calculated based on the space each product occupies in the fridge relative to the average fridge size, the average kWh of electricity used per fridge, and weighted by state distribution and eGRID data.

2.3.5 END OF LIFE EMISSIONS

End-of-life emissions were estimated for the paperboard packaging of the product. Using EPA emission factors, it was assumed that the paperboard packaging is 50% landfilled and 50% recycled.

3. SCHILLING EMISSION REDUCTION PLAN

Schilling Cider has grown substantially since its inception in 2013, becoming an industry leader in the quality and popularity of the ciders created, and the process of producing them. At every opportunity for growth, Schilling has built energy efficiency into its processes. One of the earliest examples is the industry-defining decision to package in cans rather than glass bottles, reducing not only Schilling's carbon footprint but the footprint of an entire industry that has shifted away from glass.

As the company expanded to new markets and outgrew their initial canning line, Schilling installed variable frequency drive motors – an expensive upgrade and a first in the cider industry. This technology isolates control of varying parts of the canning process, allowing it

to operate at variable speeds, making the entire process much more energy efficient when compared to typical machines that are “all-off or all-on.” Along with efficient canning and production, Schilling also only uses printed cans rather than wraps or stickers. Wrapped or stickered cans shift the burden of recyclability to the consumer, as they are only recyclable when the stickers are removed by hand.

Recently, as Schilling has experienced continued growth into new areas of the United States, there have been additional measures implemented to decrease emissions even further. In 2023 Schilling acquired eight GM Bolt electric vehicles for their Pacific Northwest sales team. In 2024, Schilling grew its electric sales fleet with the purchase of 10 Tesla Model 3’s, making them the first alcohol company in the industry to adopt a 100% EV-powered sales fleet. This transition has prevented the burning of an estimated 6,521.88 gallons of fuel through August 2024, equivalent to roughly 58 MT CO2, which we hope encourages others in the industry to follow suit.

Schilling’s marketing team is working towards sourcing 100% of merchandise from manufacturers that use sustainably sourced materials and production processes. Along with sourcing sustainable items whenever possible, they reduce the amount of LTL shipping of point-of-sale materials by adding items to nearly full product-delivery trucks. This increases the efficiency of their shipping process by lowering the number of times a 3rd party shipper travels to and from Schilling headquarters.

Along with supplying EV’s for the sales and marketing teams, they also continue to install charging stations for personal vehicles which employees can use free of charge. Through this, they foster an environment which encourages the adoption of electric vehicles while contributing to the overall wellbeing of employees.

Schilling is also in the RFQ phase for some major hardware installation projects at its production facility, which are aimed at substantially reducing CO2 emissions, water, and energy use.

4. PRODUCT OFFSET PLAN

Schilling Cider is working with Tradewater for Carbon offsets which are high quality US based projects, verified by a certified third party. These projects are critical in meeting global climate goals, as they focus on highly potent greenhouse gases which acutely contribute to environmental disruption.

To satisfy the requirements for carbon neutral certification, each month Schilling will calculate emissions associated with Excelsior Imperial Apple 12oz cans, and purchase credits for the prior month from Tradewater with a 5% buffer added to calculated credits. The number of offsets purchased, and project details, will be publicly available via the Schilling Cider website sustainability page, updated monthly when new offsets are purchased. Offsets and associated project details will be provided by The American Carbon Registry via Tradewater.

Tradewater is focused on highly potent greenhouse gases that have an outsized effect on global warming and environmental disruption. Tradewater is known for halocarbon destruction, which includes the permanent destruction of ozone-depleting substances, and methane abatement, which is achieved through the plugging of orphaned oil and gas wells.

Tradewater's carbon offset projects achieve excellent results, meaning that they can significantly curb the climate catastrophe. The projects are additional and permanent, meaning that they provide a verified environmental benefit and proven emission reduction. Without Tradewater's work, no one would be destroying halocarbon gases and permanently preventing methane emissions at this scale, which is why Schilling Cider is thrilled to consider them a partner.