



KVS CARBON FOOTPRINT

Leading climate action

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2021

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A word from our CEO, Nachi Brodt

We live in an unstable and unpredictable world which demands the most from each of us individually and collectively. At KVS we are committed to transforming this challenging condition through the adoption of the highest standards, reflective of our sense of responsibility in how we do business as a whole. This is why we are deeply focused on decarbonizing our company and accepting the immense challenge that this initiative requires.

In 2021, we achieved our goal of reducing our carbon footprint, while experiencing both successes and failures. During that year emissions increased as a result of our business growth and employee expansion, as well as our return to the office after the COVID-19 pandemic. As a growing organization concerned with carbon emissions reductions, we feel it is important to add an additional parameter to our footprint measurements:

Carbon Intensity - the amount of carbon released relative to our number of employees. Our ultimate objective is not only to reduce our footprint as a whole, but also to lower our carbon intensity.

In 2021, we signed **The Climate Pledge**, an Amazon program, and have committed to achieving the goal of net-zero carbon by 2040. As a result, we pledge to measure and report our greenhouse gas emissions regularly, and to reduce and remove them with the most credible and reliable carbon offsets.

Today we are immensely proud of having achieved our second consecutive year of being a certified Net-Zero Carbon Company taking responsibility for our full carbon footprint (scope 1, 2, and 3), and feel privileged and proud to lead by demonstrating our engagement in climate action.

Our **offset strategy** involves the issue of carbon removals:

- 80% of our footprint will be removed by local, natural-based solutions in order to increase climate and environmental value, such as expanded biodiversity, and water and air quality improvement;
- 20% of our footprint will be removed by investing in promising removal technologies presently in their R&D stage.

The country of Israel is characterized by its resiliency and its ability to adapt. Although we still have a long way to go, we believe that these characteristics will support our advance toward decarbonization more quickly. There is an immense need for additional companies to commit to similar environmental goals, and we strongly encourage organizations to adopt the short-term burden of accounting for their emissions, and to reap the long-term rewards of being a front-runner aligned with the environmental needs of this age.

tvcv,

Nachi Brodt

Summary

KVS is pleased to present the 2021 Carbon Footprint Report.

Our mission at KVS is to reduce greenhouse gas emissions while improving the future. As a company, we truly believe that measuring emissions and developing sustainability strategies is the most reliable and transparent way to reduce emissions.

2021 was an important milestone year since in the beginning of 2021 KVS initiated the second department of the company after a research and development of more than two years and now the company has two departments:

- The green building and construction department which provides energy modeling services that reduce the carbon footprint of construction projects, and
- The industry and companies department, which provides measurement and strategy consulting services to a variety of industries in the processes of measuring, reducing and offsetting GHG emissions

This report has been prepared in full accordance with the widely accepted Greenhouse Gas Protocol as well as ISO 14064-1:2018 standards. The relevant emitting activities covered in this carbon footprint report for KVS include indirect scope 2 and 3 emissions.

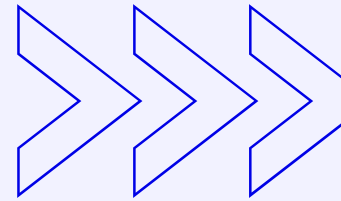
A significant aspect of our consulting activities is that we helped our clients avoid emissions. More than 747 tonne of CO₂eq of greenhouse gases were avoided due to energy reduction done by the consulting of KVS in 2021, while 16.18 tonne of CO₂eq of greenhouse gases were emitted during the activities.

KVS emissions will be offset with our portfolio of 80% verified carbon credits and 20% carbon credits supporting local start-ups and projects - equivalent to 17 tonne of CO₂eq.

General Information

Company	KVS
Responsible at KVS	Nachi Brodt - CEO Shai Ben Aharon - Head of industrial department
Scope	Scopes 1, 2, and 3 (Greenhouse Gas Protocol)
System boundary	All activities relevant and necessary for the performance of KVS consulting services, including purchased goods, waste generated, business travel, employee commuting, electricity, and water consumption
Description of company	We are a group of consultants, architects, and engineers with expertise in the environmental, climate science, engineering, project management and business fields. KVS was founded in 2015 by Noam Nachmani and Nachi Brodt, members of the first graduating class, School of Sustainability, IDC-Interdisciplinary Center Herzliya (now known as Reichman University)
Standard for calculation	<ul style="list-style-type: none">• ISO 14064-1:2018 specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals.• GHG Protocol - A Corporate Accounting and Reporting Standard• GHG Protocol Scope 2 Guidance• The Avoided Emissions Framework (2020)
Methodology for validation	Internal validation by an experienced consultant
Accounting period	January 1, 2021 - December 31, 2021
Internal quality control	Shai Ben Aharon - Head of industrial department
KVS carbon footprint	16.18 tonne of CO ₂ eq

Definitions



01 Carbon footprint

According to ISO 14067:2018 the carbon footprint of a product is the sum of GHG (greenhouse gas) emissions and GHG removals in a product system expressed as CO₂ equivalents (CO₂eq) and based on a life cycle assessment using the single impact category of climate change.

02 Carbon neutral

Carbon neutrality describes a state in which the GHG emissions released to the atmosphere by a stakeholder (individual, organization, company, country, etc.) have been reduced or avoided and the remaining ones are compensated with carbon credits.

03 Greenhouse gas

A gaseous constituent of the atmosphere, both natural and anthropogenic, which absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds.

04 Avoided emissions

Reductions in emissions caused indirectly by a product. Specifically, use of a product that provides the same or similar function as an existing product in the marketplace, but with significantly less GHG emissions.

Introduction

Company description

KVS provides **sustainability consultancy services**. We founded KVS on the principle that **Sustainability leads to Prosperity**, and prosperity of all sorts - **financial, social, and environmental**.

KVS specializes in green building, environmental consulting, thermal planning, energy modeling, microclimate planning (e.g., shading, wind simulations), carbon management and calculation such as EPDs and LCAs, climate resilience and net zero carbon strategies.

Constant learning/improvement, collaboration, and support are the cornerstones of our sustainability experts, who work with care, love, joy, and a determination to provide **value to our customers**.

We love studying the latest scientific findings and turning them into **practical sustainability solutions**.

Our goal is to provide our clients with the **most up-to-date efficient service** to achieve desired results.

Objective

KVS's objective is to declare **carbon neutrality** for the **2021 fiscal year** and to establish a precedent for calculating carbon removal for the environmental consulting and modeling services industry. As a company that preaches sustainability, KVS aims to act as an example for other businesses in the environmental consulting field and **inspire companies within Israel and around the globe** to declare carbon neutrality.

Time period

The time period for this collection was January 1st through December 31st, 2021.

Methodology

This accounting and reporting have been conducted in accordance with ISO 14064-1:2018, The GHG Protocol Corporate Accounting and Reporting Standard, and The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

These standards detail the principles and requirements for reporting greenhouse gas inventories and provide guidance on quantifying an organization's GHG emissions and removals in order to ensure proper reporting and management.

Functional unit

Tonne carbon dioxide equivalents, CO₂eq, is the unit of comparison for the radiative forcing of a GHG to carbon dioxide. It is calculated by using the mass of a given greenhouse gas and multiplying it by its 100-year global warming potential. All KVS's emissions will be reported in tonne of CO₂eq (1000 kg).

Data

Collection and Quality

The data on the emissions that accounted to each category were calculated based on the best practice available, meaning - the most representative, accurate and up-to-date data.

Data was collected using company invoices that provided the measure of company expenditures, from which quantities of emission related to the activities were derived, in order to accurately quantify GHG emissions from indirect emissions.

To calculate the emissions from electricity, the electricity consumption was converted to tonne of CO₂ based on updated data from the Ministry of Environmental Protection (MoEP) of Israel released in 2022.

All business travel calculations were made using emissions coefficient factors from the U.S. Environmental Protection Agency.

To calculate the emissions from employees commuting to work, each KVS employee self-reported the distance travelled, the method they use to arrive at work and the number of times, on average, they travel to and from the office.

Part of the data collection in terms of goods and services purchased, were measured by using the company invoices and via research from other companies' greenhouse gas reports. For example, the emissions of a laptop were taken from cradle to gate analysis of one the most common models, a Microsoft surface.

Uncertainty Margin and Sensitivity Analysis

The emission calculations for transportation (commuting and rental vehicles) were based on vehicle averages. Because we cannot entirely rely on the fact that a trip did not encounter traffic or a specific vehicle had more emissions per kilometer, some approximations for the common car and bus ride and emissions coefficients from the Israel Ministry of Environmental Protection were used. For employee commuting, it is important to note that the calculation was made based on an employee survey and with the labor weeks accordingly to the information provided by each employee. It is important to take into account that the calculations do not reflect holidays and/or sick days ostensibly taken. Another important assumption in terms of employee commuting is that bicycles emit 0 KgCO₂eq/Km. This assumption was made as the manufacturing and distribution of these bicycles is outside the scope of this report.

Internet use was also calculated based on ecoinvent database 3.8, assuming that each workday is 9 hours and includes one hour of video streaming and eight hours of regular internet use. The calculation was made with the assumption that the 14 employees use internet services five days a week.

An important source of uncertainty is the environmental impact of teleworking namely, the energy consumption by employees while working remotely from home. This factor was taken into account in a limited extent.

The data concerning the GHG load due to water usage is based on water supply system data from 2015 (Meron et al., 2020) and it is expected that the electricity mix and the water mix were slightly different in 2021 but the water usage of KVS is relatively small (estimated 90 cubic meter/year) and thus the environmental effect is also small.

This section presents the quality of the data used for the calculation. The data for the consumed electricity and fuels is based on invoices and has high certainty.

The uncertainty of the data derived from the Ecoinvent database is described comprehensively on the website (see references).

Avoided emissions

As part of our consulting activities, we helped our clients avoid emissions due to our activities and services. The total amount of avoided emissions in 2021 was 747 tonne of CO₂eq.

The avoided emissions are calculated as a comparison of the greenhouse gas (GHG) emissions from a business-as-usual (BAU) baseline scenario with those from a solution-enabled scenario to demonstrate the contribution of the solution to reducing overall system-level GHG emissions.

It is difficult to quantify some of the consulting services KVS provides to its clients, and therefore the calculations take into account the most certain and complete emission reductions. Each environmental strategy that KVS provides reduces the client's environmental footprint by a particular amount unique to the company. In the construction and planning department, the process of consulting on a project is typically divided into four stages: planning, construction, use and end of life (EoL). There is no quantitative carbon reduction in the planning stage. In the construction stage, there are many emission reductions attributable to KVS intervention but they are nonetheless difficult to assess as the data is not yet complete since LCAs, EPDs and whole-building LCAs have not been conducted to a sufficient number of materials that will allow a preference. It is expected that in the coming years this will change and as more manufacturers will publish their declarations more environmental choices could be made. In the use stage however, KVS provides sustainable alternatives for construction materials, insulation, thermal and energetic efficiency that are measurable and will be taken into account as avoided emissions which KVS helped to reduce. At the EoL stage, similar to the construction stage - the data and choices are limited currently and expected to exceed in the future.

Boundaries

Due to the nature of its business and the emissions reduction produced by it, KVS' footprint analysis is very unique. As a result, defining what activities are included, is extremely important.

Included Processes			
SCOPE	CATEGORY	SUB-CATEGORY	INCLUDED ACTIVITIES
Scope 2	Indirect Emissions	Energy purchased as electricity	Generation of purchased electricity to the organization's office
		Purchased goods	Internet services, computing equipment
Scope 3	Upstream	Waste generated in operations	
		Business travel	Rental cars, personal cars
		Employee commuting	Foot, bikes, cars, rail, buses
		Transportation and distribution	
(Scope 4)	Avoided Emissions	Reductions in emissions caused indirectly by a service provider	Emissions reduced due to KVS environmental consulting

Figure 1: Table of Included Processes

Excluded Processes			
SCOPE	CATEGORY	SUB-CATEGORY	MOTIVATION
Scope 1	Direct Emissions	Fuel consumed for heating	Not applicable
		Fuel consumed for transportation	Not applicable
		Process emissions	Not applicable
		Fugitive emissions	Not applicable
Scope 3	Upstream	Capital goods	Not applicable
		Fuel and energy related activities	Not applicable
		Upstream leased assets	Not applicable
Scope 3	Downstream	Transportation and distribution	Not applicable
		Processing of sold products	Not applicable
		Use of sold products	Not applicable
		End-of-life treatment of sold products	Not applicable
		Leased assets	Not applicable
		Franchises	Not applicable
		Investments	Not applicable
		Events	Not applicable

Figure 2: Table of Excluded Processes

KVS organizational boundary

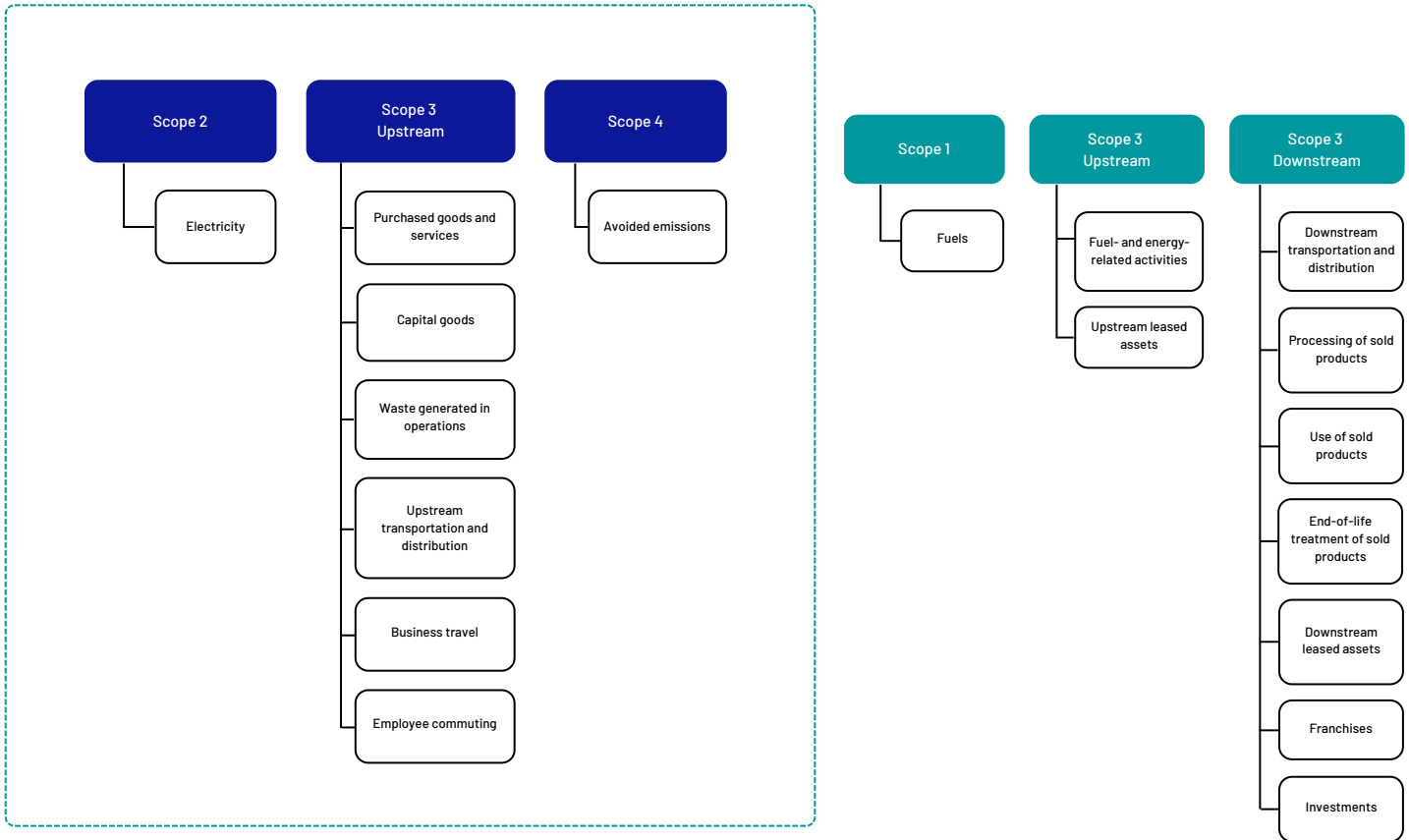


Figure 3: Company Organizational Boundary

The figure above shows the system boundaries used for the analysis. As can be seen in the figure, the main activities included under scope 2 is the electricity used at the office.

CFC's and other coolants were included in the boundary, but there was no use or replacment to include in the calculations.

KVS use Scope 1, Scope 2, and Scope 3 emissions definitions that are consistent with the Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)(2015)(available at <https://ghgprotocol.org/>).

This standard defines Scope 1 greenhouse gas (GHG) emissions as direct GHG emissions from facilities owned or controlled by an operator, including fuel use, onsite electricity generation, process emissions, and land management. GHG emissions from the generation of electricity, heat, or steam brought in from third parties are defined as Scope 2 (indirect emissions). Scope 3 is defined as an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

Results

The total GHG emissions produced by KVS was 16.18 tonne of CO₂eq, where 0 tonne of CO₂eq are from Scope 1, 4.78 tonne of CO₂eq from Scope 2, and 11.39 tonne of CO₂eq from Scope 3.

The company was also able to offset the emissions more than 47 times only through the provision of services and consulting – which resulted in energy saved due to completed building projects where residents are saving electricity consumption with a more efficient buildings.

Emissions by Scope			
Scope	Category	Emissions source	tonne CO ₂ eq
Scope 1	Direct emissions	Company facilities	-
		Company vehicles	-
Scope 2	Indirect emissions	Electricity	4.78
Scope 3	Upstream	Purchased goods	4.71
		Capital goods	-
		Fuel and energy related activities	-
		Waste generated in operations	1.01
		Business travel	2.16
		Employee commuting	3.51
		Upstream leased assets	-
	Downstream	Transportation and distribution	-
		Processing of sold products	-
		Use of sold products	-
		End-of-life treatment of sold products	-
		Leased assets	-
		Franchises	-
		Investments	-
(Scope 4)	Avoided emissions	KVS activities and services	(-747)
TOTAL EMISSIONS			16.18

Figure 4: Total Emissions by Scope

KVS GHG emissions % by scope

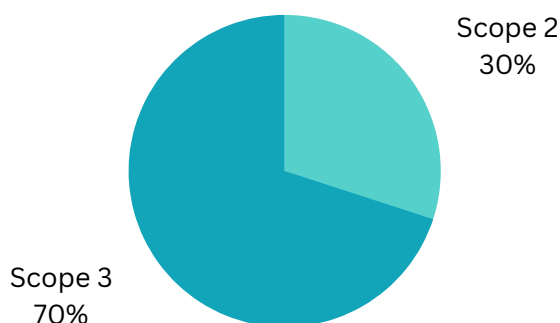
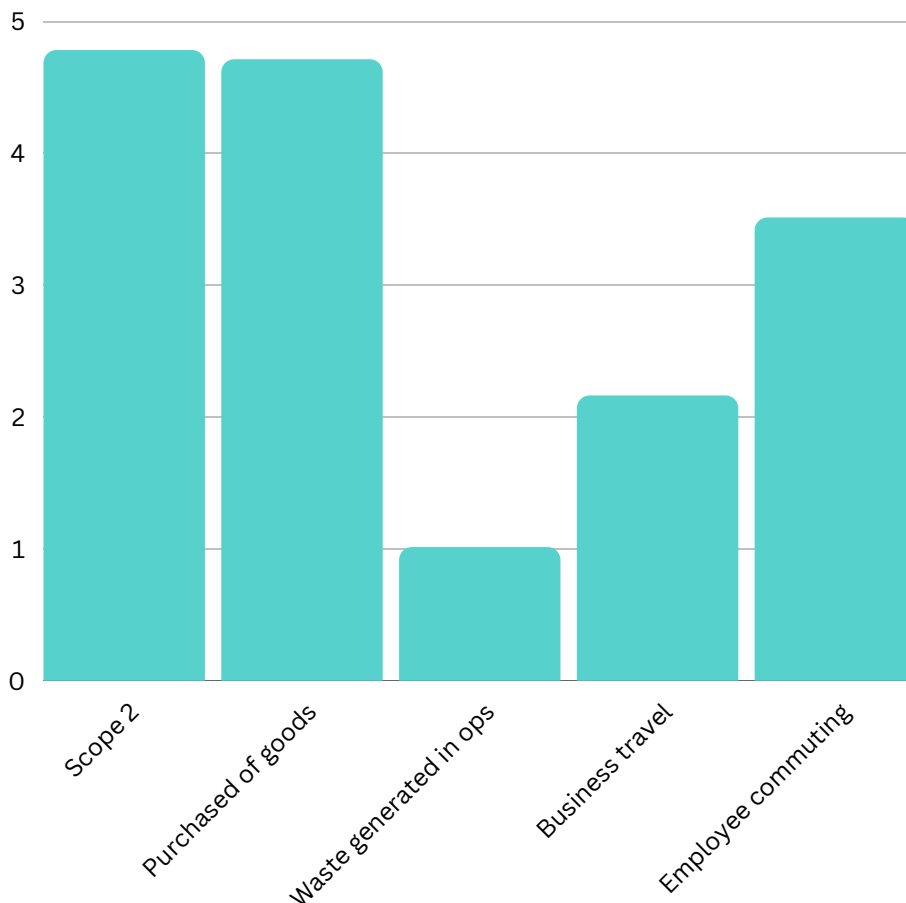


Figure 5: KVS' GHG Emissions by Scope

Results



As predicted, the largest source of emissions for KVS is due to the electricity consumption, this number is expected to increase in the coming years as a result of our business growth and employee expansions as well as the return to the office after the COVID-19 pandemic.

Figure 6: KVS GHG Emissions by category

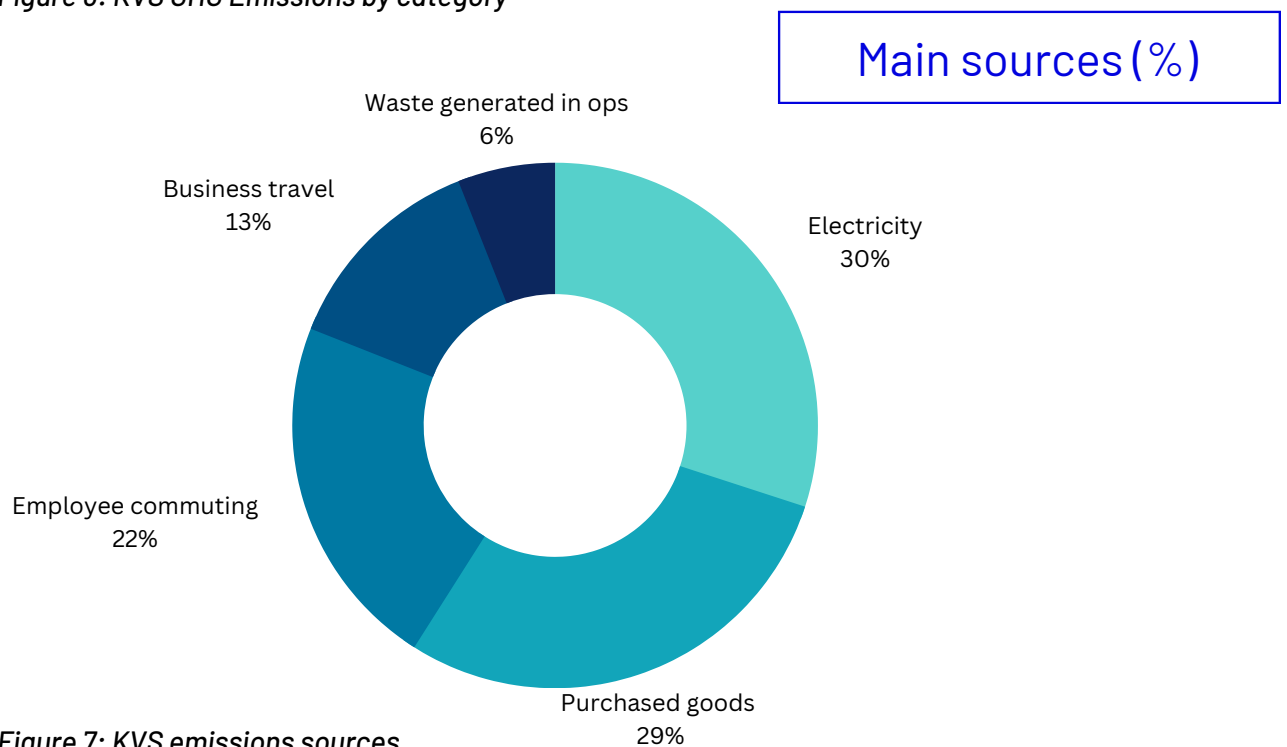


Figure 7: KVS emissions sources

Results

Electricity consumption (kWh)

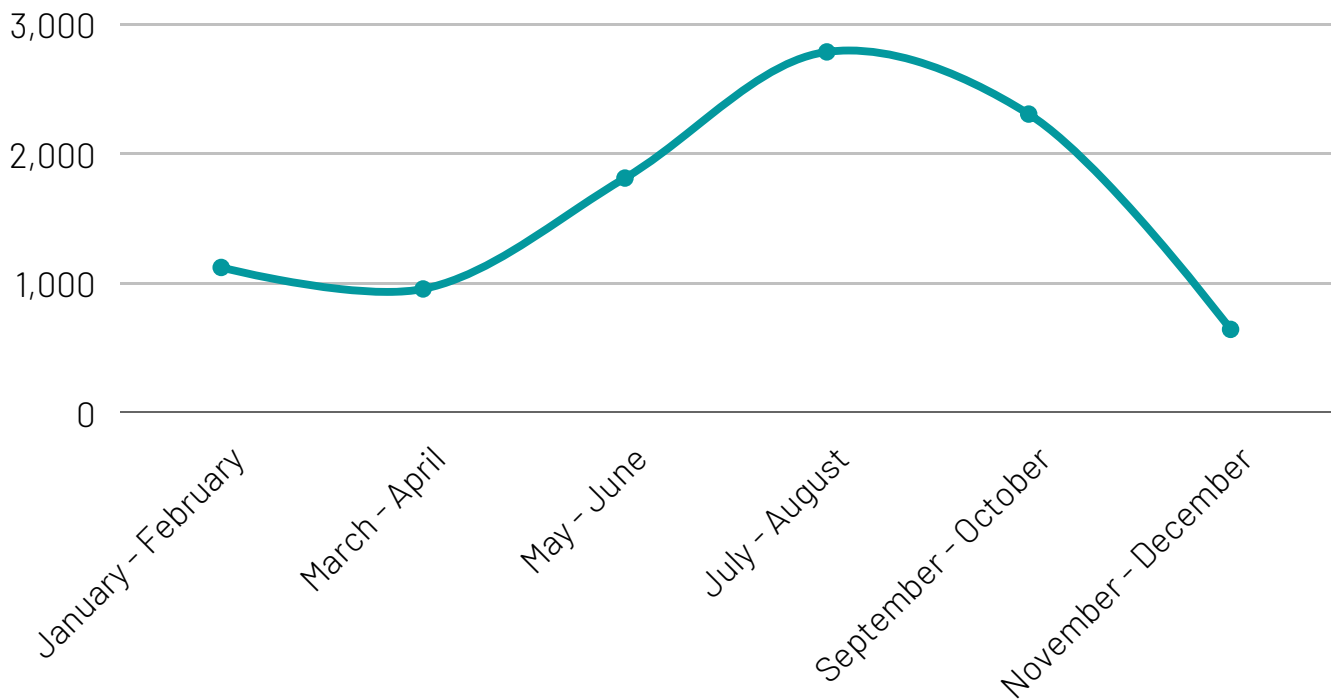


Figure 8: KVS electricity consumption in 2021

In Israel, high temperatures in July and August cause air conditioner usage to increase significantly, which results in high electricity consumption and, as a consequence, increased greenhouse gas emissions.

Avoided emissions

As can be seen in Figure 4, KVS contributes to reducing a significant amount of GHG emissions solely by the impact of energy efficiency and savings in the use stage of several projects that were completed and accommodated in 2021, and before. This number is expected to grow exponentially in the next few years since every project completed is added to the previous projects and thus, the cumulative GHG reduction will continue to increase every year. In the years to come, KVS will provide more emission reduction tools and hopefully, carbon sequestration solutions as well, to organizations, companies, and municipalities.

Carbon offset strategy

Background

Companies face major challenges when it comes to eliminating their carbon dioxide emissions by purchasing offsets due to several reasons:

1. Knowledge and information about key aspects related to carbon credits that determine the quality of the credits, such as:
 - a. Duration of the credits - 10, 100, 1000 years storage of CO₂ out of the atmosphere.
 - b. Type of credits - Carbon removal, avoided emissions, or other.
 - c. Future projects vs. past projects.
 - d. Verified and non-verified carbon credits - in the case of verified carbon credits by which registry is the verification process conducted.
 - e. Additional benefits - such as biodiversity, supporting local communities, contributing to other SDG's and more.
2. Avoiding greenwashing or getting fraud - considering the aspects above will decrease the possibility of purchasing credits of low-quality projects and supporting greenwashing.
3. Lack of knowledge about the procurement process:
 - a. How much to purchase? - one carbon credit represents one tonne of CO₂ that is removed or avoided from the atmosphere.
 - b. Which marketplaces are available?

KVS strategy

Our offset strategy involves the purchase of carbon removals:

- 80% of our footprint has been removed by natural-based and technological-based solutions in order to increase climate and environmental value, such as expanded biodiversity, water and air quality improvement;
- 20% of our footprint will be removed by investing in promising removal technologies in Israel, presently in their R&D stage.

All are equivalent to 17 tonne of CO₂eq.

Carbon offset strategy

80% - Removal Projects

80% of our footprint has been removed by investing in the Pledge-io portfolio, which is based in both natural-based and technological removal solutions.

With the portfolio, we support only carbon removal projects, which means that every tonne of our footprint is equal to a tonne removed from the atmosphere.

The projects are located worldwide. They are aligned with the most reliable industry guidances, such as the science-based targets initiative, and the Oxford Principles for Net Zero Aligned Offsetting.

The allocation of our investment is composed of:

- 90% consists of natural-based solutions, specifically Afforestation/Reforestation, and Improved Forest Management projects.
- 10% consists of technological-based solutions, specifically engineered removals, such as biochar and mineralization projects.



20% - Removal Technologies in Israel

Since supporting the local climate tech community is important to KVS, 20% of our portfolio will be purchased from Israeli start-ups. KVS is still in search of suitable credits and the process is expected to be completed in the next following weeks/months.

In case there will not be enough credits available of projects that comply with our quality requirement KVS will purchase the additional 20% from Pledge.io portfolio above.

Key indicators

We define the following four key indicators:

Carbon Intensity
(tonne CO₂eq/employee)
1.16

Annual GHG emissions per sq.m. of office
(tonne CO₂eq/m²)
0.16

Electricity Consumption
(kWh/m²)
96.26

Avg. annual employee commuting
(tonne CO₂eq employee commuting / employee)
0.25

The current study can be used as a standardized baseline for the GHG emissions of KVS and any reduction in the following years will be measured according to the 2021 report.

Conclusions

01

By conducting a carbon footprint for scopes 1, 2 and 3 of KVS activities, the main sources of carbon emissions have been clarified, and KVS will be able to manage and reduce them in the future.

02

The activities and work of KVS in sustainability services for green building have proven to be highly effective in reducing emissions relative to the company's size and resources.

03

As KVS is expected to grow in the following years together with the goal of achieving emission reductions according to 'Zero Hour' mechanism, it is highly important to set carbon intensity indicators such as emissions per employee.

04

In 2021, KVS emissions will be offset by:
80% - Pledge.io carbon removal portfolio and,
20% - Other Israeli carbon removal start-ups
All are equivalent to 17 tonne of CO₂e.

05

The activity with the highest impact is the electricity consumption under scope 2, which is caused as a result of our business growth and employee expansions. The activity has a share of 30% of the total emissions in 2021 (see figure 4).

Resources

- Ecoinvent 3.8 - Database
<https://www.ecoinvent.org/home.html>
- GHG Protocol. "Corporate Accounting and Reporting Standard." 2015,
<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.
- Electricity Mix
<https://ourworldindata.org/electricity-mix>
- Alon Municipality Waste
<https://www.alon-group.com/en/department/waste-bins>
- Carbon footprint of internet
https://corporate.delltechnologies.com/content/dam/digitalassets/active/en/unauth/data-sheets/products/laptops/lca-latitude_7300_25th_anniv_notebook.pdf
- GHG emissions registry in Israel
https://www.gov.il/he/departments/publications/reports/reports_reducing_ghg_emissions_in_israel
- The Avoided Emissions Framework (2020)
[https://www.misolutionframework.net/pdf/Net-Zero_Innovation_Module_2-The_Avoided_Emissions_Framework_\(AEF\)-v2.pdf](https://www.misolutionframework.net/pdf/Net-Zero_Innovation_Module_2-The_Avoided_Emissions_Framework_(AEF)-v2.pdf)
- Greenhouse Gas Protocol. "Technical Guidance for Calculating Scope 3 Emissions."
https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf.
- Greenhouse gas reporting: conversion factors 2021
<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>

Verification

The report has been sent for peer reviews for improvement and correction but was not verified by a third party.

*Improving the future by
leading climate action*

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