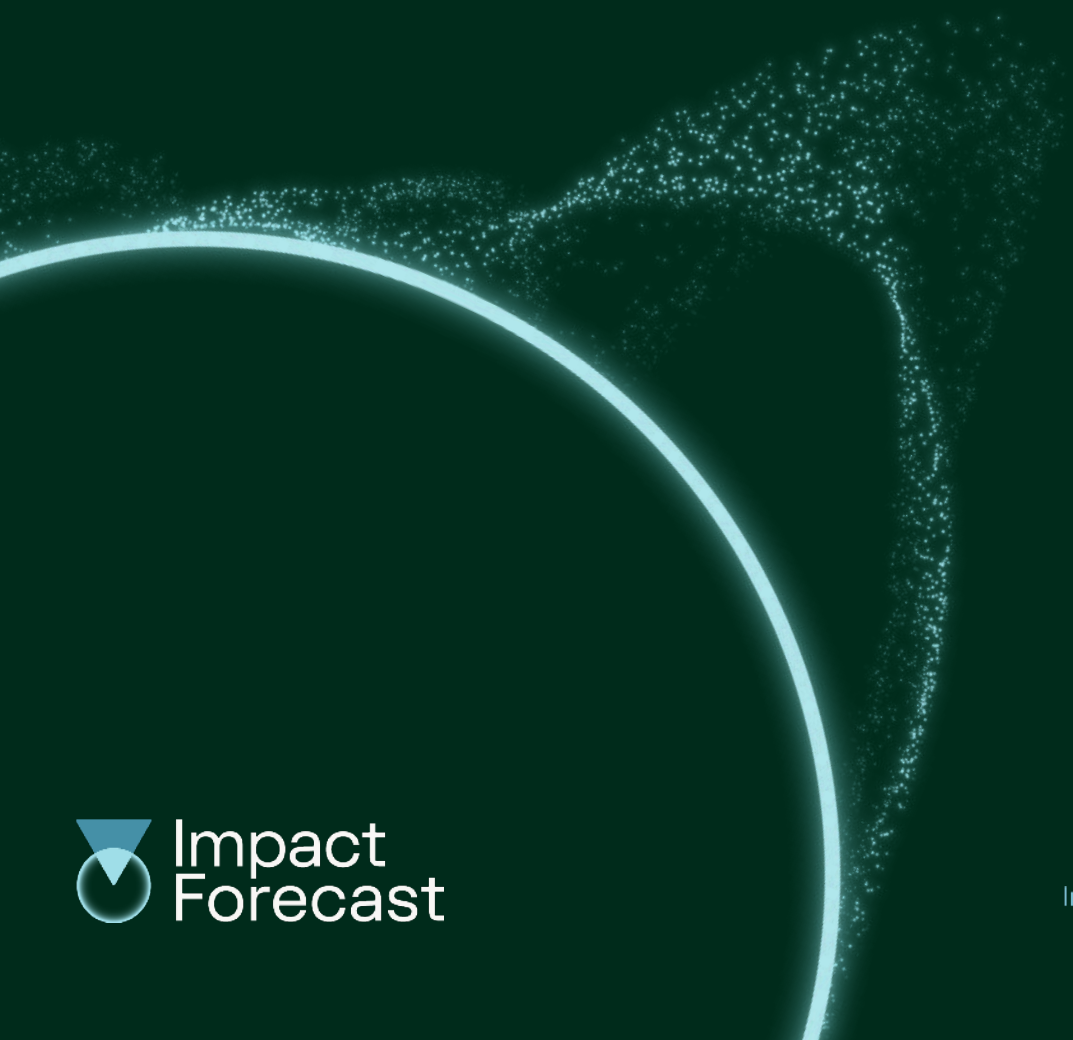
Validation report

EBar Initiatives Ltd.

January 2024

Validation ID: MS0018



Impact Forecast

Impact Insights & additionality

Contents

Details of the validation process

Timestamps and results:
The validation documented in this report was delivered with the following time stamps and results:

EBar Initiatives Ltd	Validation request	First review	Feedback call	Hand-in revisions	Final review	Wrap-up call
Date	21/12/2023 13h00	10/01/2024 15h00	12/01/2024 13h00	16/01/2024 14h50	19/01/2024 09h00	
Result	Invalid, unclear and significant			Valid, positive and significant		

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Introduction to CIF Validation

To determine the validity of self-assessed climate impact forecasts we provide CIF Validation, which is a third party verification of the calculation of the climate and environmental impact of an innovation, in order to conclude if the Climate Impact Forecast is valid, positive and significant.

Problem solved

There are areas of LCA expertise that can not be covered in the Climate Impact Forecast workshops or CIF Training, for example where domain knowledge and experience are required. With self-assessments there is also a risk of optimism bias. Validation assures that forecasts do not contain gaps, scoping errors, unsupported assumptions or inappropriate data sources. CIF Validations are made on the request of the project team, and possibly commissioned by an impact organisation. The results are used by teams and organisations to compare and communicate the climate impact of projects.

A validation process performed by an impartial impact expert, who has read about the innovation, seen the forecast and used a checklist to assess its validity. The validator provides detailed written feedback and offers the opportunity for a revision. The goal of this process is twofold: increase the quality of a forecast and to conclude if the forecast is suitable to draw conclusions about the positive climate impact of the innovation. This Validation report documents the results of that process.

Definitions of key terminology

Climate Impact Forecast (CIF)	A Climate Impact Forecast or CIF is an LCA based calculation of the GHG reduction or climate adaptation potential of a project. Using our CIF tool, the project team found the net climate impact of the key differences between business as usual and their innovative solution.
CIF Validation process	A review process delivered by a validator and guided by a structured check of the information entered into a CIF, a sensitivity analysis and the write-up of an Impact story. This process usually takes two weeks and includes a first review, a first feedback call between the team and validator, time for revisions if needed, a final review and a final results call.
Validator	Validations are delivered by Validators; CIF trainers with LCA expertise who are trained to perform this process in a uniform and objective way. Other than providing this service, Validators have no relationship with or obligations to the company or supporting organisation requesting the validation, assuring an impartial third party review.
Validation result	The CIF Validation result consists of three independent outcomes, which in the best case are valid, positive and significant. These qualifications and the alternative outcomes are explained on the next page.

The CIF Validation result consists of three independent outcomes

Validity of the forecast

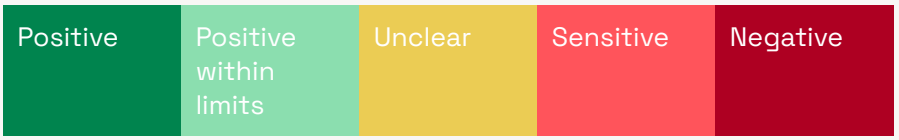
A CIF is valid if it is representative of the project, using appropriate data and well-justified assumptions. Therefore, the CIF and its results are representative of the potential for the project to mitigate, enable or adapt to climate change.

Detailed requirements for validity are specified on www.impact-forecast.com/ CIF-validations. A CIF can be:

Reduction potential

A CIF is positive when it shows that the project has a lower climate impact than business as usual, or improved climate resilience in the case of adaptation. A positive mitigation or enabler CIF file shows the avoided GHG emissions in -tCO_2eq.

This outcome depends on a sensitivity assessment. CIF results can be:



Impact threshold

A CIF is significant when the project has a climate impact (positive or negative) greater than 5 tonnes of CO_2eq per year. This is roughly the global average annual CO_2 emissions per person and the mass of a male African Elephant.

The threshold for significant impact can be set to a higher amount for a particular organisation or occasion. The result can be:

EBar Initatives Ltd name CIF Validation

This validation consists of the following sections

Impact story	An impact story is a summary of how a project makes a positive climate impact. It is written by the validating impact expert and contains the key impact data from the Climate Impact Forecast.
Climate Impact Forecast and Validation result	The Climate Impact Forecast shows the scope and parameters of the impact calculation. This includes the resources used and saved by the innovation, their amount and climate impact, the climate impact per unit of user, and the total climate and environmental impact for all units or users in the timeframe. Validator feedback is included on strong and weak points of the forecast as a whole, as well as the conclusion from the sensitivity assessment and the approval status of individual parameters. The conclusion of the validation process is noted in the Validation result.
Sources and assumptions	The differences (resources used and reduced by the innovation, compared to the baseline solution) and quantities (of materials, energy etc.) in the forecast are based on sources and assumptions specified in this section.

Impact story

A mobile self-serve drinks kiosk saves emissions

EBar Initiatives Ltd. has developed a self-serving drinks kiosk that is pouring pints in just a few seconds and is saving material and waste treatment of cans. The EBar is designed to transform the bar experience at big events and venues with a simple and quick solution.

How does this make a positive climate impact? Compared to which baseline?

The baseline is a can bar with people handing out beer or other drinks. The EBar is mitigating the cans and also saving waste management and waste treatment.

This calculation is done in the Cif file for a specific event and supported by scientific data from a LCA study of different ways of producing and packaging beer. Savin Aluminium is therefore the main driver of the impact potential of EBar.

How much of a climate impact, and what does the impact depend on?

The main positive impact is coming from less waste treatment and saved emissions by less can production in comparison to the use of the Ebar solution. On the other side, the production of the EBar machine is adding emissions that are smaller than the saving potential. Per Functional Unit, a 50L pouring event, the impact potential is in the range of -60 kg CO_2eq and for 2026 it is planned to handle this unit times 20,000 and therefore, save -1.3 tonnes CO_2eq. This would be equivalent to the annual electricity demand of more than 540 average EU households.

Validity

The forecast is valid, positive and significant. All assumptions are made clear and well explained and calculations are transparent, even if the case is very specific. Although the impact per Functional Unit is small, the impact potential overall is significant.

Climate Impact Forecast and Validation result

EBar Initiatives Ltd. provides a high volume fast pour drinks dispense kiosk with a design that drastically reduces the waste incurred at events instead of Canned or bottled dispense bars. The difference in impact is calculated per year and the total impact of EBar Initiatives Ltd. per year is calculated 21,220 times (as the projected figure for 2026) for 50L of product (a keg).

Validation	By: Martin Schott, Started: Fri Jan 19 2024 08:39:52 GMT+0100 (Mitteleuropäische Normalzeit), Completed: Fri Jan 19 2024 08:44:32 GMT+0100 (Mitteleuropäische Normalzeit)
Strong points	assumptions made clear, transparent calculation
Weak points	calculation of impact potential very specific
Sensitivity	even though the impact potential per FU is small, the impact stays positive if ranges of negative indicators change drastically

Production

+	Steel (secondary), beams, sheet	0.6472 per kg	0,143 kg	0.09255
−	GHG Emissions of a pint of beer produced into	0,25 per Pint (56	88 Pint (	-22
−	AlMn1.2Mg1 (3004)	11.67 per kg	1,606 kg	-18.75
+	PE (Polyethylene) expanded	2.397 per kg	0,0006 kg	0.00144
+	PVC (Polyvinylchloride, trade mix)	2.104 per kg	0,0008 kg	0.00168
+	PE (HDPE, High density Polyethylene)	1.8 per kg	0,000066 kg	0.00012

Waste

−	AlMn1.2Mg1 (3004)	11.67 per kg	1,606 kg	-18.75
−	Carbon footprint of pale lager packaged in diffe	0,1412 per Pint	10 Pint	-1.412
+	Electricity UK	0.07887 per MJ	00,06864 kWh	0.01949

EBar Initiatives Ltd.'s total impact per year

eco-costs of human health euro	unknown
eco-costs of eco-toxicity euro	unknown
eco-costs of resource depletion euro	unknown
eco-costs of carbon footprint euro	unknown

	Carbon footprint CO_2eq.
Impact per (as the projected figure for 2026) for 50L of product (a keg)	-60.79 kg
Impact of 21220 times (as the projected figure for 2026) for 50L of product (a keg)	-1.3Kt
Impact validation	Valid, positive and significant All data and assumptions are approved

Equivalent to

58638 trees

186 average World citizens

160	1302	2506	542	258	233
times driving a car around the world	passengers flying London-New York	barrels of oil burnt	EU households annual electricity	elephants mass (5t) of CO_2	hot air balloons (2800 m^3) of CO_2

Sources and assumptions

Production

For the sake of the exercise we are comparing one EBar kiosk to the equivalent sized typical concourse can bar, consisting of a table and people handing out beer poured into cups when paid for.

Assuming that we are operating at a max capacity of 200 pints/hr leads to an operation time for a keg to be poured at 0.44hr.

In order to fairly compare the 2 types of system (EBar Mobile Unit vs. a Can Dispense Concourse Bar) we have to acknowledge that an element of the unit, however small, will be classed as used. For the purpose of this we are taking into accounts the figures we have currently obtained from one of our units. This has poured ~8,000 pints per year over its 3 years within the business. Based on the lifetime of components and major refurbishment of the units we estimate that the units should last 10 years.

Taking these assumptions we can say that one unit pouring 50L worth of product (1 Keg) we can then calculate the amount of kegs poured over the 10 year period. If one unit pours ~8,000 pints per year this will pour ~80,000 pints over the 10 years. This can then be divisible by 88 to account for just over 909 Kegs in a year. Using the masses of the 'Key Different' components within the unit we can divide the mass by the number of kegs poured to provide the mass of degradation from the unit's components that is 'used' over the course of 50L of product poured (1 Keg).

I have calculated the equivalent mass of degradation of the steel frame which we have in the unit over the course of the functional units. This can be seen to be 0.143 kg. This is also calculated for the mass of the beer lines being used in the units which are a key point of difference compared to the other bar. This can be seen through the different masses of the types of plastic used in the beer lines or tubing. The equivalent degradation masses that can be seen below combine to a total of 0.001466 kg of 3 different types of plastic (PE, HDPE & PVC).

The equivalent mass of 50L worth of product in a standard 330ml aluminium cans is 1.606kg (http://www.kadealu.com/8-1-aluminium-beverage-can.html)

Waste

Assuming that we are operating at a max capacity of 200 pints/hr leads to an operation time for a keg to be poured at 0.44hr
The equivalent mass of 50L worth of product in a standard 330ml aluminium cans is 1.606kg (http://www.kadealu.com/8-1-aluminium-beverage-can.html)

The electricity used by our units is greater than that of the opposing bar which has been calculated and can be seen below to be the difference between our units usage over the course of a functional unit.

More information

For more information about this validation, and Climate Impact Forecast Validation in general, reach out to Impact Forecast.

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