Trucost
ESG Analysis

S&P Global

Core Laboratories FY 2018

Science Based Targets Setting

CREDITS
Brian Werner Account Director
Caroline Bartlett/ Grace Kao Project Manager
Vandana Gaur Analyst

About Trucost
Trucost is part of S&P Global. A leader in carbon and environmental data and risk analysis, Trucost assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance factors. Companies and financial institutions use Trucost intelligence to understand their ESG exposure to these factors, inform resilience and identify transformative solutions for a more sustainable global economy. S&P Global's commitment to environmental analysis and product innovation allows us to deliver essential ESG investment-related information to the global marketplace. For more information, visit www.trucost.com.

About S&P Global
S&P Global (NYSE: SPGI) is a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide. For more information, visit www.spglobal.com.

CONTACT
E: Trucostinfo@spglobal.com

E: Trucostnorthamerica@spglobal.com

E: TrucostEMEA@spglobal.com

E: Trucostasiapacific@spglobal.com

E: Trucostsouthamerica@spglobal.com

T: +44(0)20 7160 9800

T: +1 800 402 8774

www.trucost.com

Table of Contents

Key Terms

Assessment report	A series of reports published by the IPCC providing a full scientific and technical assessment of climate change. Often referred to by the acronym AR and version number – for example AR5 being the Fifth Assessment Report published in 2014, and the latest of the ARs. .
Baseline year	The period in history against which a company tracks performance over time.
CO_2e	A unit used to express greenhouse gases in standard units of global warming potential, namely the equivalent volume of carbon dioxide that would create the same warming impact.
IPCC	Intergovernmental Panel on Climate Change
Representative Concentration pathway (RCP) 2.6 Subcategory	A GHG concentration trajectory developed in the IPCC 5th Assessment Report (AR5) for climate modeling and research. RCP 2.6 assumes that global annual GHG emissions peak by 2020, with emissions declining substantially thereafter.
SBT's	Science based targets. Greenhouse gas emission reduction targets set in line with climate science.
SBTi	Science Based Target Initiative
Target year	The year by which a company intends to meet the emissions reduction committed to in a target
1.5C	Targets set to align with limiting global warming to 1.5°C above pre-industrial levels
WB2C	Targets set to align with limiting global warming to well-below 2°C above pre-industrial levels

Introduction

Core Laboratories commissioned Trucost help calculate appropriate greenhouse gas (GHG) emissions reduction targets in line with the latest Science Based Target Initiative (SBTi) methodologies.

As of February 2019 the SBTi updated its recommendations regarding science-based target setting to update the previous recommendations to achieve 2°C limits in global climate change. It now encourages companies to set GHG emissions reduction targets consistent with the most ambitious aim of the Paris Agreement, to limit average global warming to 1.5°C. SBTi communicated[1] the new targets submitted for validation will only be accepted if they are consistent with limiting warming to well-below 2°C (WB2C) or 1.5°C (1.5C) above pre-industrial levels. These are consistent with the context of strengthening global response to the threat of climate change. Based on this communication, targets consistent with limiting warming to 2°C will no longer be approved by the SBTi. Core Laboratories has previously set an SBT for its six ATCs, and these are updated within this report to take into consideration latest recommendations and the expansion of scope to include 12 mid-level ATCs and two manufacturing sites. It should be noted that Singapore is included as a 13th ATC within footprint analysis, but this is excluded in the SBTs as the site has been sold and is no longer a part of the Core Laboratories operations.

Core Laboratories has been tracking its GHG emissions for several years, expanding from six sites in 2015 to 21 sites in 2019 (for FY2018 data). Based on the emissions profile of Core Laboratories wherein Scope 3 emissions account for majority (over 40%) of the company-wide emissions Trucost recommended the inclusion of Scope 3 emissions in the setting of a science-based target, in line with SBTi recommended practice. It should be noted that while the recommendations within the report relate to SBTi guidance, it is unlikely that the scope of the target (covering only 20 sites and not the full range of operating practices) would be accepted for a formal endorsement from SBTi at this stage.

Science-based target methodologies

There are generally many methodologies to calculate science-based targets (SBTs). The basic components of a SBT are the base year and target year–covering the timeframe over which the target is to be achieved, the boundary–covering the types of emissions, and the metric–covering the setting of either an absolute or intensity based target. For more information and recommendations on setting SBTs please refer to the SBT manual.

The three main publically available agreed approaches are:

- Sector-based
- Economic-based
- Absolute-based

Each of these have variation to methodologies within them, with a range of tools and resources available to support them. Different methodologies have varying suitability for different organizations –depending on sector, type of business model and output/activity, metric, and ambition. Overall the

[1] Science Based Targets initiative announces major updates following IPCC Special Report on 1.5°C: https://sciencebasedtargets.org/2019/02/20/science-based-targets-initiative-announces-major-updates-following-ipcc-special-report-on-1-5c/

methods can be grouped into two main approaches to allocate emissions at a company level - convergence and contraction. Briefly, the convergence approach attributes companies within a given sector to reduce their emissions intensity to a common value by 2050 as dictated by a global emission reduction pathway. The reduction responsibilities allocated to a company vary depending on its initial carbon intensity and growth rate relative to those of the sector. The contraction approach attributes companies to collectively reduce their absolute emissions or economic emissions intensity at the same rate, irrespective of initial emissions performance, and do not have to converge upon a common emissions value.

SBTi recommends companies to screen several of the methods and choose the method and target that best drives emissions reductions to demonstrate sector leadership. In 2016, Core Laboratories set an internal economic-based SBT, however the SBTi has since updated its guidelines and recommendations. Following a review of appropriateness of all public approaches, Trucost considered two methods, Absolute-based and Economic-based, to set updated and expanded Core Laboratories science-based targets. Though the economic-based GEVA approach is included for reference, this no longer conforms to best available practice.

The following methods were used to calculate potential science-based targets for Core Laboratories:

1. **Absolute-based**: The absolute emission based approach sets targets based on tons of carbon equivalents (tCO_2e). When referring to this method at a global level, the SBTi suggests using the scenarios outlined in climate reports such as the IPCC Assessment Reports.

   For FY2018, Core Laboratories has a GHG footprint of 50,748 tCO_2e, based on market-based scope 2 emissions. This is considered to be the base year against which to set targets as it is the latest available data. Two potential target dates were considered, 2023 (the shortest possible date for an SBT, with 5 -15 years recommended for SBT setting) and 2025 (simply as a milestone year).

2. **Economic-based**: The economy based approach sets targets based on tCO_2e normalized by a financial or production figure (for example tCO_2e per $m value added or per number of units sold).
   The GHG Emissions per Unit of Value-Added (GEVA) target setting method equates a carbon budget to total global GDP and a company's share of emissions is determined by its gross profit, since the sum of all companies' gross profits worldwide equate to global GDP. In 2016, Core Laboratories set a GEVA based target across its six ATCs, with a 5% year-on-year reduction of emissions per value added unit. This actually equated to an absolute increase in emissions, due to predicted increase in gross profit over the timeframe.

   Since its introduction by Jorgen Randers in 2012, the GEVA method of SBT setting has been questioned as to whether it would constrain global emissions to a specified budget in its current formulation. As such, SBTi currently accepts GEVA based SBTs for Scope 3 only, and to achieve the required updated reduction (for WB2C scenario, a minimum of 7% reduction per unit of value added is required (SBTi, 2019)).

   For reference, Trucost has calculate Core Laboratories' WB2C GEVA SBT, but would only be endorsed by SBTi if scope 1 and 2 targets are at least as aggressive as the absolute based approach.

Science-based target results

1. Absolute-based targets

The absolute method requires all companies to reduce their own emissions by the same percentage of absolute emission reductions as required for a given scenario (e.g. globally or for a sector).

To achieve the recommended reduction levels, Core Labs would need to set a target requiring a 45% reduction by 2030 from 2010 levels to stay under 1.5°C and reach net zero by 2050, using the IPCC special report published in October 2018. In comparison to 2018 emissions, Core Laboratories latest baseline year assessment, this equates to 12.5% reduction by 2023 for a 'well below 2 degree' scenario (WB2C) and 21% for a 1.5 degree scenario (1.5C). Emissions for the 21 sites would need to decrease from 50,748 tCO_2e to 44,405 tCO_2e by 2023 under the WB2C scenarios and or to 40,091 tCO_2e under the 1.5C scenario.

EXHIBIT 1: ABSOLUTE SCIENCE BASED TARGETS (SCENARIO: IPCC SPECIAL REPORT, 2018)

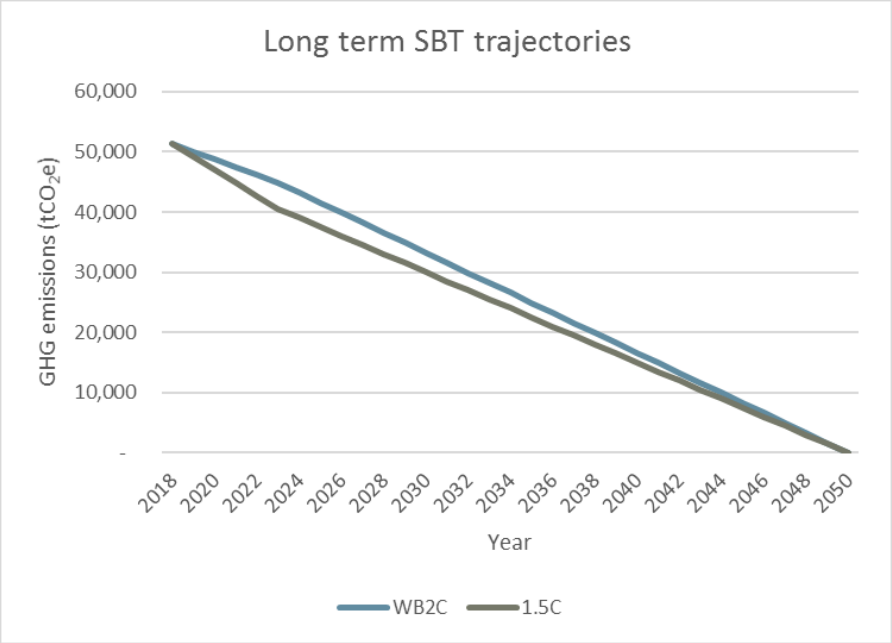


EXHIBIT 2: ABSOLUTE BASED TARGET, 2023

	Base year 2018	WB2C		1.5C	
		Target year 2023	Percentage reduction	Target year 2023	Percentage reduction
Scope 1 emissions (tCO_2e)	4,541	3,973	12.5%	3,587	21%
Scope 2 emissions (tCO_2e)	12,490	10,929	12.5%	9,867	21%
Scope 1 & 2 emissions (tCO_2e)	17,031	14,902	12.5%	13,455	21%
Scope 3	33,717	29,502	12.5%	26,636	21%
Total	50,748	44,405	12.5%	40,091	21%

By 2025, reductions of 19% and 27% are required under the WB2C and 1.5C scenarios respectively from the baseline year of 2018.

EXHIBIT 3: ABSOLUTE BASED TARGET, 2025

	Base year 2018	WB2C		1.5C	
		Target year 2025	Percentage reduction	Target year 2025	Percentage reduction
Scope 1 emissions (tCO_2e)	4,541	3,679	19%	3,322	27%
Scope 2 emissions (tCO_2e)	12,490	10,119	19%	9,136	27%
Scope 1 & 2 emissions (tCO_2e)	17,031	13,798	19%	12,458	27%
Scope 3	33,717	27,317	19%	24,458	27%
Total	50,748	41,115	19%	37,121	27%

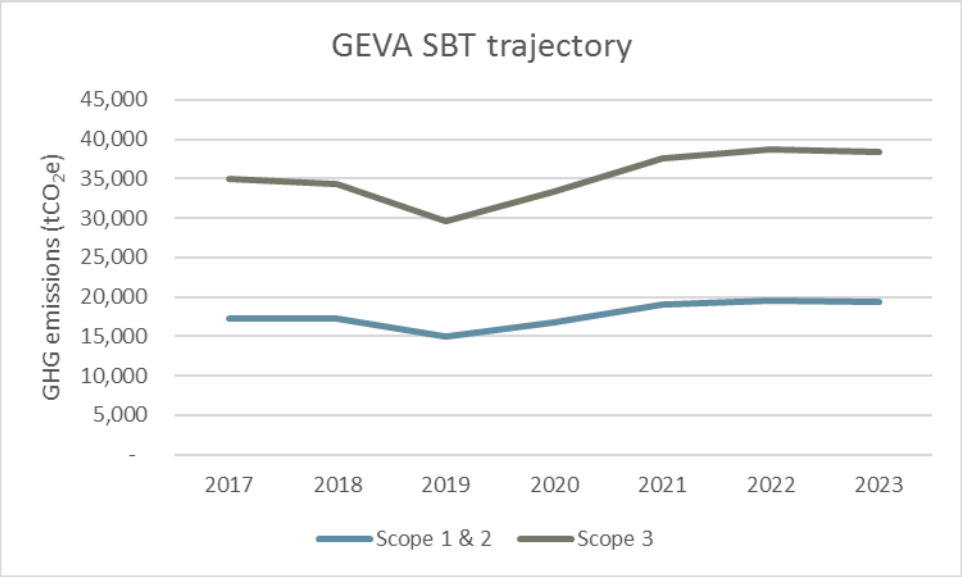
2. Economic based targets: GEVA

The GEVA target setting method equates a carbon budget to total global GDP and a company's share of emissions is determined by its gross profit, since the sum of all companies' gross profits worldwide equate to global GDP. Against a baseline year of 2018, Trucost calculated Core Laboratories GEVA SBT based on a 7% decrease in emissions per unit of Value Added – in terms of tCO_2e/ $m gross profit.

EXHIBIT 4: FINANCIAL DATA INPUTS

Financial Item (unit)	2018	2023
Gross Profit (FY 18)	$59,514,380 (excluding Singapore)	$97,195,512 (excluding Singapore)
Total Emissions	50,748	57,847
GEVA Absolute Emission Change	-	14% (increase)
Emissions per Value Added	856 (tCO2e/ $m gross profit)	595 (tCO2e/ $m gross profit)
GEVA Emission Intensity Change	-	-30% (decrease)

EXHIBIT 5: ECONOMIC BASED TARGETS (SCENARIO: IPCC FIFTH ASSESSMENT REPORT, 2014)



While the GEVA method calls for a 30% decrease in emissions intensity by 2023 compared to the 2018 baseline period, it allows for a 14% increase in absolute emissions over the same time period due to Core Laboratories' projected increase in profit. This illustrates that the GEVA methodology would not be accepted as a robust enough approach for setting SBTs for Core Laboratories because it allows for an increase in absolute emissions. In addition, the GEVA method is not appropriate when firms have negative profits (if not adjusted for) which results in negative emissions intensities. While the overall gross profits of Core Laboratories is positive, there are two sites in which current profits are negative. This leads to misleading results at the site level and hence the GEVA method should be applied with caution.

The way forward

Given revised guidance from the SBTi, Trucost recommends that Core Laboratories use the absolute-based approach going forward, and select a target year based on own preferences. The general recommendation is to set the most aggressive target of those reviewed, and therefore it would be preferable to set a 1.5C target rather than the WB2C as this pushes the reduction and helps move more quickly towards decarbonization.

The absolute based approaches produce valid science-based targets, though at the current level, Core Laboratories' do not meet the full criteria of the SBTi and as such, the targets are unlikely to be accepted by the SBTi for public commitment. Trucost recommends the following actions to help achieve this level of commitment and which will help define Core Laboratories as sector leaders.

1. Expand on number of sites included within GHG emission analysis to cover the appropriate proportion of operational activities. This can include using proxies to extrapolate over some of the less intensive sites within Core Laboratories operations, such as offices and warehouses.
2. Recalculate and expand on previous supply chain expenditure analysis to better understand impacts of newly incorporated sites. This is particularly important for the manufacturing sites as these have the highest intensity scope 3 emissions, yet are based solely on modelled data. Mid-level ATCs have similar purchasing practices to ATCs, and as such ATC spend analysis is used as a proxy for to extrapolate scope 3 purchased goods and services and capital goods

associated emissions. However, manufacturing sites are not comparable, and therefore are fully modelled based on the Trucost proprietary environmentally extended input-output (EEI-O) model.

3. Focus on immediate steps to reduce GHG emissions through operational activities and wider engagement, procurement and service offerings.

It is expected that the approach of setting science-based targets for carbon management will continue to gain prominence in order to achieve the level of decarbonization required to stay well within the two degree Celsius global warming limit. Setting and committing to a science-based target will help Core Laboratories achieve the ambition for sustainability leadership.

REFERENCES:

1. Nicole Labutong, Pedro Faria, Heidi Huusko, Bryan Jacob, Cynthia Cummis, Jessica McGlyn, Nate Aden, Renee Morin, Stephen Russell, Alberto Carrillo Pineda, Carole Tornay, Paola Delgado Luna, 2017. *Science-based Target Setting Manual,* Accessed July 2019. <http://sciencebasedtargets.org/wpcontent/uploads/2015/09/SBTManual_PubComDraft_22Sep15.pdf>
2. IPCC Special Report: Summary For Policy Makers, 2018. Accessed July 2019. <https://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf>