Future-Fit
Business Benchmark

Part 2
Indicators

Release 1

A Free to Use Tool

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Whatever you use the Benchmark for, please let us know if you find it useful and how we might improve it!

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Introduction

Getting started with the Key Fitness Indicators.

About this document

Have you read Future-Fit Business Benchmark, Part 1: Concepts, Principles and Goals?

This document's sister publication, *Future-Fit Business Benchmark, Part 1: Concepts, Principles and Goals* introduces the Benchmark: who and what it is for, why it is needed, and how it is being developed. If you have not yet read Part 1 it is strongly recommended that you do so. You can download it from futurefitbusiness.org.

The current document provides the next level of detail, and is specifically aimed at sustainability managers, accountants and others who wish to know exactly what criteria must be met if a company is to be considered future-fit.

To recap:

*A **Future-Fit Business** is one that creates value while in no way undermining – and ideally increasing – the possibility that humans and other life will flourish on Earth forever.*

To become future-fit, a company must strive to reach the 21 **Future-Fit Goals** introduced in Part 1. Taken together, these goals mark the transition point beyond which a business starts helping – rather than hindering – society's transition to a prosperous future for all.

Introducing the Key Fitness Indicators.

The Future-Fit Goals give a company a clear destination to aim for, but don't tell it how far it still has to go. That brings us to the second question: *how can we tell how far away a business is today from becoming truly future-fit?* This document offers a first set of **Key Fitness Indicators** (KFIs) that aim to help any company assess the gap between where it is now and where it needs to be.

The purpose of this first release.

The intention for this first release is to deliver a "minimum viable product": a set of indicators complete and robust enough for interested companies to pilot, both to assess their own progress toward future-fitness, and to feed back their experiences to the development team so that the usability and utility of future releases can be improved.

The Key Fitness Indicators described herein do not constitute the perfect – or indeed only – way to quantify whether a business is fit for the future, but they offer a meaningful start.

In preparing each KFI, the intention has been to equip practitioners with enough detail to get going, while not overwhelming them with minutiae. Striking the right balance is a challenge, not least because the aim is to produce a tool that can be used across all business models, sectors and sizes.

A call for feedback...

The Future-Fit Foundation team invites you, the reader, to help us finish what we've started: to tell us about any ambiguities or omissions you find, and – wherever possible – to suggest ideas as to how we might tackle them.

As you explore specific goals you may well have questions and concerns about how they apply to your business. To improve the Benchmark, we need to hear them. So please help us by sharing any and all queries, constructive criticism and suggestions for improvement by emailing info@futurefitbusiness.org.

Would you like to work more closely with us?

Throughout 2016 we are working closely with a small group of companies to pilot the use of the Benchmark across a range of different sectors. Please contact us if you would like to discuss participation in this pilot phase.

Quick Start

Taken together, the Future-Fit Goals span a company's entire value chain. A number of these goals relate to *Customers* or *Society as a Whole*. In both cases, a single **KFI** is provided, which seeks to measure the extent to which a company's goods, services and other societal contributions are future-fit.

The remaining goals – which relate to a company's *Physical Resources*, *Operational Presence*, *Employees* and *Communities* – each have two KFIs. The first of these is an **Internal Operations KFI**, which assesses the fitness of the company's own operations. The second is a **Supply Chain KFI**, which assesses those operational impacts within its supply chain for which it is deemed to be mutually accountable. A summary of goals and KFIs is shown below.

Stakeholder	Future-Fit Goals	Company	Supply Chain
Environment: Physical Resources	Energy is from renewable sources	✓	✓
	Water is used in an environmentally responsible and socially equitable way	✓	✓
	Materials derive from sources that respect the welfare of ecosystems, people and animals	✓	
Environment: Operational Presence	Operational emissions do not harm people or the environment	✓	✓
	Operations emit no greenhouse gases	✓	✓
	Operational by-products are repurposed	✓	✓
	Operations do not encroach on ecosystems or communities	✓	✓
Customers	Products do not harm people or the environment	✓	
	Products emit no greenhouse gases	✓	
	Products can be repurposed	✓	
	Customers are informed about any aspect of products that may cause harm	✓	
	Customer concerns are actively solicited, impartially judged and transparently addressed	✓	
Employees	Employee health is safeguarded	✓	✓
	Employees are paid at least a living wage	✓	✓
	Employees are subject to fair employment terms	✓	✓
	Employees are not subject to discrimination	✓	✓
	Employee concerns are actively solicited, impartially judged and transparently addressed	✓	✓
Communities	Community concerns are actively solicited, impartially judged and transparently addressed	✓	✓
Society as a Whole	Business is conducted ethically	✓	
	The right tax is paid in the right place at the right time	✓	
	Lobbying does not undermine the pursuit of future-fitness	✓	

Approach

The thinking and concepts upon which the Key Fitness Indicators are built.

Guiding Principles

In *Future-Fit Business Benchmark, Part 1: Concepts, Principles and Goals* it was noted that for the benchmark to be both useful *and* usable we must consider three things:

- **The requirement for society**
  What is the minimum society must do, from a systems perspective, to protect the possibility that humanity and other life can flourish forever?
- **The responsibility of business**
  What can – and must – every company do to play its part in meeting this societal requirement?
- **The reality for business leaders**
  What do companies need to enable them to pursue future-fitness?

These considerations underpinned the creation of the KFIs presented in this document.

KFI Design Criteria

To help ensure that each KFI is both useful and usable, we have aspired to meet five design criteria, as follows:

- **Calculable:**
  - All data required to compute a KFI's value should be within the company's power to obtain, even if some companies may not be capturing it already.
  - Each KFI should be calculable even if a company does not know everything about its impacts (e.g. it may not know the source of a purchased material, or the impact of a particular site). Thus each KFI should accommodate knowledge gaps.

  - Each KFI should encourage a company to close its knowledge gaps. Thus each KFI should never penalize increased knowledge (e.g. finding out that a particular product has a negative impact should not improve the company's score, but neither should it be reduced).
- **Comparable:**
  - Each KFI should measure performance consistently across any company, no matter what its size, sector or location.[1]
- **Complete**
  - The KFI(s) for each goal should reflect the company's full scope of responsibility, encompassing all relevant activities undertaken by or on behalf of the business, throughout the value chain.
- **Concise**
  - Each KFI should measure performance in the context of whichever entity is most relevant to the goal (e.g. by product, supplier or employee). This ensures that the company is able to identify where action is most needed.
  - Each KFI should also offer a way to aggregate per-entity scores into a high-level indicator representing the company's overall fitness, where each entity's score is weighted in accordance with its overall contribution to the business.
  - At both the micro (per-entity) and macro (company-wide) levels, fitness should be expressible as a percentage, where 100% is equivalent to being fully future-fit.
- **Credible**
  - Each KFI should build on leading science and accurately capture the 'spirit' of the goal it seeks to measure progress toward.
  - Each KFI should draw on best-available third party resources, such as independent industry standards, insofar as they exist and align with the Future-Fit approach.

Future-Fit or Not?

For some goals, it makes sense to judge fitness in either/or terms, at the most fine-grained level (i.e. the smallest meaningful unit) of analysis. For example, either a company pays an individual employee at least a living wage or it does not. When aggregated across all employees, such binary values translate into an overall indicator of fitness as a percentage.

[1] Note that the relative difficulty of reaching a future-fit goal will vary across sectors, depending on the nature of each company's business model. So care must be taken if attempting to compare progress across companies on a single goal.

For other goals, multiple factors contribute to whether future-fitness is achieved. For example, to safeguard employee health a company must address areas as diverse as workplace safety, mental wellbeing, physical activity and nutrition. In such cases, it seems reasonable for a company to get partial credit for strong performance in one area, even if performance elsewhere is lacking. But a more nuanced approach is not always as straightforward as it seems, because it requires value judgments to be made regarding the relative importance of each contributing factor. For example, when it comes to employee health, is mental wellbeing more important than a smoke-free environment? Is workplace safety even more important? If so, then to what extent?

Without supporting evidence, attempting to 'put numbers on' the relative importance of each factor could be criticized as arbitrary. This dilemma arose in the development of several KFIs, and we decided that for this first release every contributing factor must be addressed adequately if fitness is to be achieved. This may seem overly harsh, but it offers a starting point which we hope to refine – based on further research and expert input – to offer a more fine-grained analysis in later releases.

Fitness and Footprint

The concept of a *footprint* – the extent of a particular impact – is now widely understood by business. Many companies, for example, already report their "carbon footprint" (total greenhouse gas emissions) and "water footprint" (total water use). Footprint metrics can give a sense for the scale of a company's impact, but they don't tell the whole story.[2] By way of illustration, whose impact is higher: a company using 100,000 litres of freshwater, drawn from a rapidly-depleting aquifer in a desert region, or a company using ten times that amount, obtained by desalinating seawater in an area with high, year-round rainfall?

This is where *fitness* metrics come in, by putting a company's footprint in context. The amount of water used by a company is of course important, but it is at least as critical to know whether that usage is undermining the current or future wellbeing of humans and other species in the local watershed.

[2] It should be noted that cross-company comparison of footprint metrics can be difficult, due to differences in the way data is reported (e.g. different interpretations of what "water use" means). Organisations such as CDP and the Global Reporting Initiative have done much to standardize how data are reported, but inconsistencies remain.

Mutual Accountability

To capture a company's true progress toward future-fitness, it is necessary to identify the right scope of responsibility: for what impacts across a company's value chain can – and should – it be held accountable?

Few would take issue with the notion that a company is responsible and *wholly accountable* for impacts within its direct control, such as those caused by its own operations and the design of its products. But from a systems perspective a company is also *mutually accountable* for impacts outside its direct control, if:

(a) the impact is a consequence of the company's existence and its interaction with other actors in the broader economic system; and

(b) the company can influence those actors.

In particular, we consider three types of mutual accountability: between the company and its suppliers, its customers, and its employees.

Suppliers

Every company relies to some extent upon goods and services provided by other organisations, which we collectively refer to as suppliers. Common examples include: energy, water, computers, transport, manufacturing equipment, furniture, accounting services, and (in the case of manufacturing companies) materials required to make products.

A company's direct suppliers will almost certainly purchase third party goods and services to help them meet the company's needs. Those third parties will themselves rely on suppliers, and so on. Such interdependence leads to extremely complex supply chains. So where should mutual accountability for supply chain impacts end?

A company is deemed to be mutually accountable for impacts resulting from the provision of supplied goods or services if their absence would seriously affect its business. This encompasses what we term **core suppliers**, which break down into two categories:

1. **Outsourced functions:** A company is mutually accountable for the internal operational impacts of any direct supplier to whom it outsources core business functions (e.g. customer support, assembly plants, logistics).
2. **Product inputs:** A company that sells goods (or services whose delivery requires goods to be consumed) is mutually accountable for all *cradle-to-gate* operational impacts caused by the creation of its product inputs (see panel).

Cradle-to-gate accountability for product inputs

We consider a *product input* to be any material which is necessarily consumed in the delivery of a product or service. This includes:

- Ingredients or components required to manufacture a physical good, which either end up embedded in it or are used up (e.g. a catalyst) during its production.
- Consumable substances which are required to provide a service (e.g. detergents and paints used by a commercial decorator).

Supply chains for all but the simplest product inputs are complex and multi-layered, and a company may not even know much about them beyond its direct suppliers. But ignorance is no defence for impact: any company that relies on a product input is mutually accountable for identifying and mitigating whatever negative impacts result from their provision.

Whether a product input is a raw material or a more complex derivative, it must be traced back to source. This encompasses all mining, farming, fishing, hunting and harvesting of natural resources, through interim processing and transport, until the product input is delivered to the company.

Mutual accountability between company and supplier is both necessary and desirable, because of the extra attention and resources it can bring to bear on performance hotspots in overlapping supply chains. Actions taken to address such hotspots, by *any* mutually accountable party, will increase the future-fitness of *all* parties involved.

Customers

A company must do all it can to ensure that its products do not harm people or the environment. When a company sells a product to a customer, both parties are considered mutually accountable for any environmental or social impacts that result from the product's use and end of life processing.

Examples include:

- A company sells a car powered by an internal combustion engine: the company and its driver are both accountable for the greenhouse gases that the car emits during use.
- A company sells a cell phone, which cannot be readily disassembled into reusable components at the end of its life: the company and the customer are both accountable for ensuring that the product is repurposed, and for any failure to do so.[3]

[3] If the cell phone cannot be recovered through existing recycling infrastructure, the company should offer a take-back service and incent its use.

This definition of mutual accountability does not hold the company responsible for impacts that the customer can reasonably be expected to avoid. Examples include:

- A company sells a car powered by a rechargeable battery: the driver is free to use renewable sources of electricity to charge the battery, so the company is not deemed accountable for greenhouse gas emissions that occur if the customer instead uses a non-renewable source.
- A company sells a cell phone, and offers a readily available take-back service for when it is no longer needed: the customer alone is accountable for any waste that results from not using this service.

Mutual accountability between company and customer reflects the fact that a company cannot completely control the actions of its customers. A company can – and ideally should – do all it can to ensure that its products cause no harm. But a company cannot be reasonably expected to guarantee that none of its product will be used or disposed of in an unforeseen and inappropriate way.

Employees

A company is responsible for providing a safe and healthy work environment, and for empowering all employees to behave responsibly, but each individual employee also has an obligation to act in a socially and environmentally sound way. So both parties are considered mutually accountable for action at an individual level. Examples include:

- A company initiates a no-smoking ban at all company facilities: the company is responsible for ensuring no employee is exposed to second-hand smoke, but it cannot be reasonably expected to force all employees to give up smoking.
- A company provides a mechanism for employees to report complaints or concerns: the company is responsible for ensuring the mechanism is effective and accessible to everyone, but individual employees are responsible for choosing to use it.
- A company provides a car to an employee as a benefit: the company and the employee are mutually accountable for any greenhouse emissions that occur as a result of its use.

Mutual accountability between company and employee reflects the fact that a company cannot completely control the actions of individuals. A company can – and ideally should – incentivize employees to make future-fit choices, for example by rewarding employees for not smoking, or by ensuring that all company cars provided as a benefit cause no emissions. But a company cannot be reasonably expected to guarantee that all its employees will behave in an entirely future-fit way.

Measurement Methods

Our KFI design criteria led us to consider future-fitness in two ways: as a measure of progress toward a particular **outcome**, and as a measure of effectiveness of **policies and processes** whose purpose is to deliver a particular outcome.

Outcome Metrics

Where progress toward a future-fit outcome can be measured directly, we do so. We consider two types of outcome: *proportional* and *elimination*.

Proportional outcome metrics

Proportional outcome metrics simply capture the amount (or "proportion") of a company's results (or "outcomes") that are future-fit. An example would be paying employees a living wage, whereby performance can be expressed as a simple ratio: number of employees paid at least living wage relative to total number of employees.

Elimination outcome metrics

Elimination outcome metrics capture the degree to which a negative impact has been eliminated. But quantifying this as a simple percentage is not always straightforward. Consider net zero greenhouse gas emissions, for example. Defining what 100% fitness means is straightforward, but defining what 0% means is less clear-cut. What level of greenhouse gas emissions should this represent? In such cases we need a *reference point* to 'anchor' performance.

Where regulatory standards exist (e.g. GHG emissions from cars), the reference value can be set to match the minimum legal requirement.[4] The rationale here is that a company should receive no credit for merely doing what the law requires, but anything more should be rewarded.

If no such regulation exists, we permit the company itself – subject to following appropriate guidelines – to choose its own worst year as (an absolute) reference point, from which subsequent reductions are measured. We believe this to be a reasonable approach – and in fact a desirable one – for the following reasons:

[4] In cases where legislation is subsequently introduced or existing legislation is updated, the company can stick to its original chosen reference point. This ensures company fitness will fluctuate due to changes in company activity, not changes in the external environment.

- A company may only choose a reference year in which it has all of the data necessary to begin to measure progress. If a company is only just starting to collect such data, its fitness starts at 0%. Thus companies that have been measuring and managing their impacts for a while will see any performance gains during that period recognized.
- A company must follow up on its commitments with real action. If a company commits to becoming future-fit and chooses a reference year, its fitness will remain at 0% until it is able to decrease its impacts (e.g. reducing emissions) from that initial value.

Eliminating certain impacts entirely can be difficult, particularly for companies that are growing. But economic growth is no defence for increasing negative impacts. In the words of Mars Inc., discussing its absolute greenhouse gas emission reduction goal: *"If we choose to financially grow our business and do so in ways that require us to produce more tonnes of product, that's our responsibility to deal with, not the atmosphere's."*[5]

Policy and Process Metrics

In situations where progress toward a future-fit outcome cannot be meaningfully captured, or where year-to-year changes in fitness could potentially occur by chance (e.g. zero accidents), we instead measure how systematically and effectively the underlying issue is being managed across the company. To capture this, we consider a blend of one or more of the following, depending on the goal:

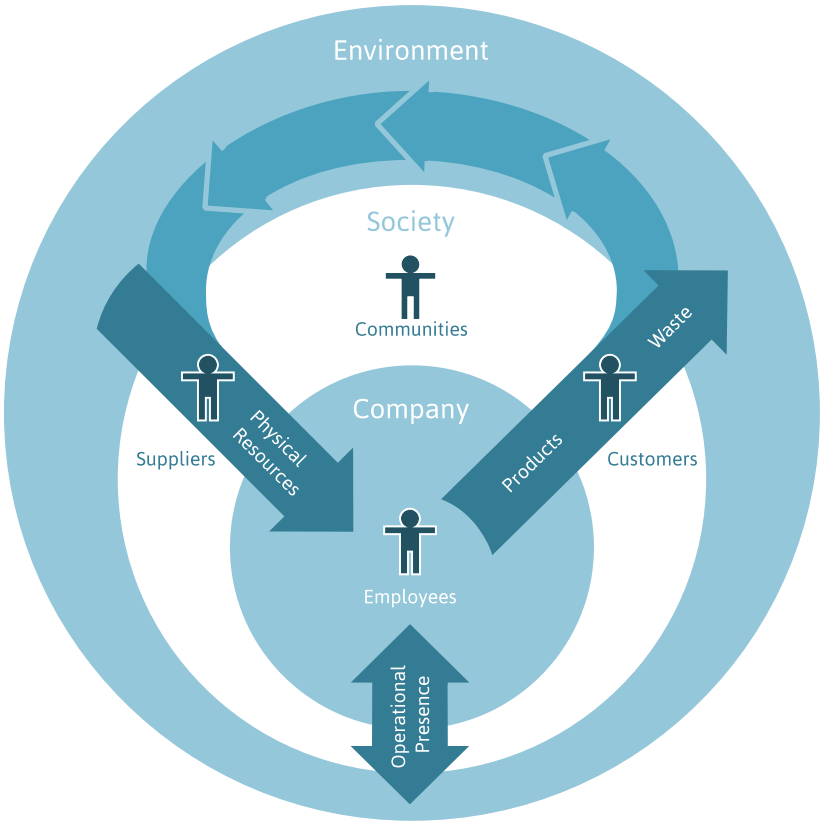
- **Commitment:** Several KFIs evaluate to what extent a company is willing to commit to ensuring future-fit practices.
- **Policies and programs:** For several goals, research and leading experts stress the need to have comprehensive policies and programs in place, if a required level of performance is to be both reached and sustained. Examples include effective mechanisms for employees and communities to report concerns, as well as comprehensive, site-level health programs to ensure employee health is fostered.
- **Transparency:** Companies need not publish all of the underlying data required to calculate a KFI, but for some goals (for example those related to tax and lobbying), transparency is critical because society at large should be able to judge a company's performance.

Note that a company's responsibility does not depend on its size, so future-fit policy and process requirements apply to small- and medium-sized enterprises (SMEs) as well as large companies. This should not place an undue burden on SMEs, because a business with relatively few employees should be able to meet such criteria without the need for expensive systems and audits.

[5] http://sciencebasedtargets.org/methods/

Key Fitness Indicators

Measuring progress toward future-fitness.



This chapter presents all Future-Fit Goals, together with an in-depth description of the Key Fitness Indicators (KFIs) used to calculate progress toward them. There are 21 Future-Fit Goals, grouped by the stakeholders for which they are most relevant.

Whatever its size or sector, every company has an *Operational Presence* (e.g. farms, offices, factories) in or near local *Communities*. It sells goods or services to *Customers* who use and – for many types of physical good – eventually dispose of them. Company operations rely on *Employees* and *Physical Resources*, which are often sourced from *Suppliers*. And how a company is run both depends upon and affects *Society as a Whole*.

Goals and KFIs by Stakeholder

Environment: Physical Resources

- Energy is from renewable sources
- Water is used in an environmentally responsible and socially equitable way
- Materials derive from sources that respect the welfare of ecosystems, people and animals

Environment: Operational Presence

- Operational emissions do not harm people or the environment
- Operations emit no greenhouse gases
- Operational by-products are repurposed
- Operations do not encroach on ecosystems or communities

Customers

- Products do not harm people or the environment
- Products emit no greenhouse gases
- Products can be repurposed
- Customers are informed about any aspect of products that may cause harm
- Customer concerns are actively solicited, impartially judged and transparently addressed

Employees

- Employee health is safeguarded
- Employees are paid at least a living wage
- Employees are subject to fair employment terms
- Employees are not subject to discrimination
- Employee concerns are actively solicited, impartially judged and transparently addressed

Communities

- Community concerns are actively solicited, impartially judged and transparently addressed

Society as a Whole

- Business is conducted ethically
- The right tax is paid in the right place at the right time
- Lobbying does not undermine the pursuit of future-fitness

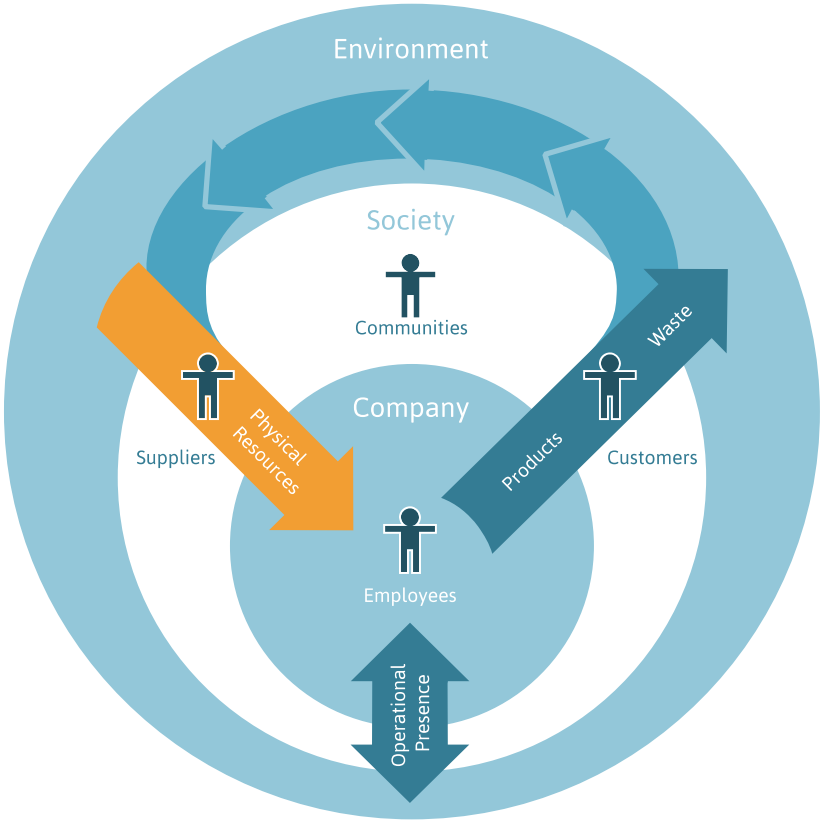
Suppliers

Goals relating to *Physical Resources*, *Operational Presence*, *Employees* and *Communities* extend beyond the company's own operations to its core suppliers.

Progress toward such goals is thus captured by an **Internal Operations KFI** and a **Supply Chain KFI**.

Environment: Physical Resources

All companies need energy and fresh water. Many require a range of renewable and non-renewable materials. Future-fit companies and their core suppliers use all such resources efficiently, and obtain them without adversely affecting people or the natural systems they depend on.



Future-fit goals.

The two goals relating to energy and water have both an Internal Operations KFI and a Supply Chain KFI. The third goal in this group is specifically focused on impacts that occur when natural resources are obtained from the environment – whether the company sources them itself or via its suppliers. It therefore employs a single KFI, which is neither specific to internal operations nor to suppliers, but rather is an amalgam of the two.

- Energy is from renewable sources
- Water is used in an environmentally responsible and socially equitable way
- Materials derive from sources that respect the welfare of ecosystems, people and animals

Energy is from renewable sources

Goal description

There is no longer any doubt that the systematically increasing concentration of greenhouse gases (GHGs) in the atmosphere is causing climate change and ocean acidification. Further, ever-riskier fossil fuel extraction methods are becoming increasingly disruptive to the environment. Examples include shale gas fracking and Arctic drilling.

By ensuring energy comes from renewable sources, companies do not contribute to the demand for fossil fuels and their associated emissions, nor to the over-harvesting of resources such as oil whose value to society extends far beyond combustion.

The goal is therefore to ensure that all energy consumed – as electricity, heat or fuel – is derived from renewable energy sources: solar, wind, ocean, hydropower, geothermal resources, and biomass.

Fitness criteria

Progress toward this goal is measured by looking at the proportion of energy used by a company that derives from renewable energy sources. This includes:

- Energy consumed in the creation of its physical products (e.g. chemical processes, powering manufacturing equipment).
- Energy consumed by buildings and equipment, whether owned or leased (e.g. lighting, heating and computers).
- Energy consumed by transport vehicles that the company owns or leases.
- Any other energy that the company consumes in order to conduct its business.

Determining requirements.

To reach future-fitness the company must meet the following requirements:

For energy consumed as electricity:

A company can purchase electricity through the market or it can generate some or all it needs for itself. For both it is required that:

- The electricity generation lives up to criteria put forth by the RE100 initiative.

- Total energy consumption is measured and converted into a consistent format to enable summation (e.g. Kilowatt hours (kWh)).[6]

For all other energy:

- Energy is verified to derive from a renewable source.[7]
- Total energy consumption is measured and converted into a consistent format to enable summation (and consistent with the method chosen above).

Key Fitness Indicator – Internal Operations

When all energy consumption has been identified and assessed fitness can be calculated as follows:

- Add up the amount of consumed energy that derives from renewable sources.
- Add up the total amount of consumed energy.
- Calculate fitness as the percentage of consumed energy that derives from renewable sources.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_R}{E_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_R	Is the amount of energy consumed that derives from renewable sources.
E_T	Is the total amount of energy consumed.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites, a bottling plant and an office space. The company powers its office with renewable energy (a total of

[6] For information on how to do this see the conversion tables at platts.com.

[7] Renewable energy does not necessarily imply *clean* energy. In particular, scientists have raised concerns about the use of energy from biomass. Facilities that convert biomass into energy can cause the emission of a range of harmful substances and may be relatively energy intensive, thus reducing net energy gains. Further, crops grown for biofuels may compete with food production for land and water. We have opted to align with well-established definitions of renewable energy which *do* include biomass, but recommend that companies *should* always choose for the cleanest and most efficient option available. Future releases of the benchmark may revisit this issue.

20,000kWh per annum), but its bottling plant is powered by fossil energy (a total of 180,000kWh per annum). It can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_R}{E_T} = \frac{20{,}000}{20{,}000 + 180{,}000} = 10\%.$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the energy fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the energy fitness of that one site need be considered. If that site uses only renewable energy then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the energy footprint**: An initial estimate of the amount of energy required to create the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:

- Its **energy contribution**: The actual amount of energy used by that supplier in the production of the product input (i.e. what it contributes to the total footprint).[8]
- Its **fitness contribution:** The amount of energy used by the supplier that derives from renewable sources.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Renewable Energy

A range of definitions for renewable energy exist, which do not differ significantly in substance.[9] In line with these we use the following definition:

Renewable energy *is energy derived from natural processes that are replenished constantly: solar, wind, ocean, hydropower, geothermal resources, and biomass.*

In contrast, non-renewable energy derives from sources that cannot be replenished, reproduced, grown or generated in a short time period through ecological cycles.[10] This includes:

- Fuel distilled from petroleum or crude oil, such as gasoline, diesel, jet fuel, heating oil.
- Natural gas, including compressed natural gas (CNG) and liquefied natural gas (LNG).
- Fuels extracted from natural gas processing and petroleum refining, such as butane, propane, liquefied petroleum gas (LPG).
- Coal.
- Nuclear power.

[8] Energy consumption needs to be converted into a consistent format to enable summation across suppliers.

[9] See for example the Glossary of the GRI in G4 Sustainability Reporting Guidelines: Implementation Manual, the US Energy Independence And Security Act of 2007, the RE100 definition of renewable energy, and the Impact Reporting and Investment Standards (IRIS) Glossary.

[10] See the Glossary of the GRI in G4 Sustainability Reporting Guidelines: Implementation Manual, p. 250.

Useful links

RE100

RE100 is a coalition of businesses that are committed to procure 100% of their electricity from renewable sources. According to RE100, companies can achieve 100% renewable electricity through:

- **Procurement of renewable electricity sourced from generators and suppliers in the market:** This can take the form of green electricity contracts with utilities, Power Purchase Agreements (PPAs) or renewable electricity certificates.
- **Production of renewable electricity from their own on-site and off-site facilities:** A company may produce its own renewable electricity from installations it owns or controls. These can be grid-connected or entirely off the grid.

See RE100 for further guidance and details on criteria.

Frequently asked questions

Should renewable energy only be from "responsible sources"?

While renewable energy offers carbon neutral solutions to electricity generation, other negative environmental and social impacts may occur. Biomass, in particular has been under scrutiny for being environmentally disruptive and for competing with food stocks for land.[11] If biomass is used as a source of fuel in production processes, whether or not it is from a responsible source will be captured by the goal *Materials derive from sources that respect the welfare of ecosystems, people and animals*.

However, other sources of renewable energy may have side-effects too. For example, run-of-the-river hydroelectric power is more responsible than that derived from mega-dams, which can cause significant environmental and social collateral damage. And solar arrays on rooftops or barren lands are more responsibly sited than solar farms on land which could otherwise be used to grow crops.

Given the complexity of interpreting what *responsibly sourced* means for every type of renewable energy – coupled with the practical difficulty of tracing whether every joule of purchased energy derives from such a source – this question is deferred to a later release.

Why is all energy from waste not considered a renewable energy source?

Residual waste often contains a mix of biogenic materials like food waste and scrap wood, as well as materials from fossil sources such as plastics. Energy recovered from such waste is only considered to be *partially* renewable.

[11] See for example The Union for Concerned Scientists' reflections on biomass as energy.

Water is used in an environmentally responsible and socially equitable way

Goal description

Fresh water is critical to people's health, for drinking, cooking and sanitation. Further, by over-harvesting water, or taking too much water from one source and returning it to another, a company may undermine the balance, quality, and availability of water that flora and fauna rely upon, resulting in the degradation of ecosystems.

Companies must ensure that their water use in no way undermines the availability of water for people and ecosystems that depend on the watershed from which the water is withdrawn.

Water use is a complex issue. Impacts vary at a local catchment level, depend on where water is withdrawn from (e.g. aquifers, rivers) and returned to, and can also arise from changes in water quality (e.g. by introducing or removing impurities).

This goal focuses on localised impacts stemming from water withdrawal. Water quality issues are covered by the goal Operational emissions do not harm people or the environment.

Fitness criteria

Fresh water is a finite resource whose availability varies significantly by region – as does the demand of other people and organizations within the same watershed. There is no universally agreed and scientifically rigorous way to determine what any user's fair share of the available supply should be. So a company's performance against this goal cannot be measured simply by looking at the total amount of water used.

For this reason, progress toward this goal is measured by looking at the proportion of a company's total water use that does not impact water stressed regions. This will require companies to reduce and eventually eliminate its reliance of water from such sources.[12]

[12] This does not mean that a company should simply 'leave the taps on' if located in an area of water abundance. A company *should* strive to maximize water efficiency whenever possible.

Determining requirements for water management.

A range of criteria must be assessed at a per-site level: that is, any company-controlled office, factory or other location at which water is used. For every such site, the following requirements must be met:

Assess the state of all local freshwater sources that the company depends upon:

- Identify which local freshwater water source(s) the company uses.[13]
- Identify whether each source is currently considered to be water stressed[14] or if it is projected to become so in the future. Several tools are available to assess local water context.[15] A company is free to use whichever tools are deemed most appropriate in each location, but must track which method it uses, and why.
- Measure total water withdrawal volumes.

For any water stressed source (or any source projected to become so in the future), the company must eliminate its contribution to that stress:

- The following approaches are acceptable:
  - Eliminate all water withdrawal from that water source.
  - Become water neutral by offsetting all water use from that source with *local* offsetting projects.[16]

Key Fitness Indicator – Internal Operations

When all freshwater sources have been identified and assessed fitness can be calculated as follows:

- Add up the amount of water withdrawn from sources that are not currently – and not projected to be – suffering from water-stress.
- Add up the total amount of water withdrawal.
- Calculate fitness as the percentage of water that has not been withdrawn from water-stressed sources.

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[13] For example, in some regions water is obtained primarily from groundwater, and in others from lakes or rivers.

[14] Definitions and terminology may vary across organizations. We use the term *water stress* as opposed to *water scarcity* on the grounds that it is defined as a broader and more inclusive concept by several leading organizations.

[15] See for example CEO Water Mandate's Water Stewardship Toolbox.

[16] Offsetting should generally be considered a last resort, and offsetting projects must affect the same water source as the site is drawing water from.

This can be expressed mathematically as:

$$F^{Int} = \frac{W_F}{W_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
W_F	Is the amount of water withdrawn from sources that are not currently – and not projected to be – suffering from water-stress.
W_T	Is the total amount of water withdrawal.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The office uses a total of 100,000 litres of water per annum, supplied by a company that withdraws water from a nearby water-abundant river. Its bottling plant on the other hand withdraws a total of 1,000,000 litres of water per annum, most of which ends up in its bottles. The water is withdrawn in equal amounts from two different sources, one of which is suffering from water stress.

The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{W_F}{W_T} = \frac{100{,}000 + 500{,}000}{1{,}100{,}000} \approx 55\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the water fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site only uses water

sourced from a water-abundant source then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the water footprint**: An initial estimate of the amount of water required to create the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:
  - Its **water contribution**: The actual amount of water used by that supplier in the production of the product input (i.e. what it contributes to the total footprint).
  - Its **fitness contribution:** The amount of water used by the supplier that comes from sources which do not suffer from water stress.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Catchment (or Watershed)

The following definition is provided by The Alliance for Water Stewardship:

*The area of land from which all surface runoff and subsurface waters flow through a sequence of streams, rivers, aquifers and lakes into the sea or another outlet at a single river mouth, estuary or delta; and the area of water downstream affected by the site's discharge. **Catchments**, as defined here, include associated groundwater areas and may include portions of water bodies (such as lakes or rivers).*

Water withdrawal

The following definition is provided by The Water Footprint Network:

***Water withdrawal** means the volume of freshwater abstraction from surface or groundwater. Part of the freshwater withdrawal will evaporate, another part will return to the catchment where it was withdrawn and yet another part may return to another catchment or the sea.*

Water consumption

The following definition is provided by The Water Footprint Network:

Water consumption *means the volume of freshwater used and then evaporated or incorporated into a product. It also includes water abstracted from surface or groundwater in a catchment and returned to another catchment or the sea.*

Water stress

Definitions of water stress and terminology vary across organizations. We use the definition provided by the CEO Water Mandate's Corporate Water Disclosure Guidelines:

Water stress *refers to the ability, or lack thereof, to meet human and ecological demand for freshwater. Compared to scarcity, water stress is a more inclusive and broader concept. It considers several physical aspects related to water resources, including water availability, water quality, and the accessibility of water (i.e., whether people are able to make use of physically available water supplies), which is often a function of the sufficiency of infrastructure and the affordability of water, among other things. Both water consumption and water withdrawals provide useful information that offers insight into relative water stress.*

There are a variety of physical pressures related to water, such as flooding and drought that are not included in the notion of water stress.

Water stress has subjective elements and is assessed differently depending on societal values. For example, societies may have different thresholds for what constitutes sufficiently clean drinking water or the appropriate level of environmental water requirements to be afforded to freshwater ecosystems, and thus assess stress differently.

Water neutral

The following definition is provided by The Water Footprint Network:

A process, product, consumer, community or business is ***water neutral*** *when:*

(i) its water footprint has been reduced where possible, particularly in places with a high degree of water scarcity or pollution; and

(ii) when the negative environmental, social and economic externalities of the remaining water footprint have been offset (compensated).

In some particular cases, when interference with the water cycle can be completely avoided – for example, by full water recycling and zero waste – 'water neutral' means that the water footprint is nullified; in other cases, such as in the case of crop growth, the water footprint cannot be nullified. Therefore 'water neutral' does not necessarily mean that the water footprint is brought down to zero, but that it is reduced as much as possible and that the negative economic, social and environmental externalities of the remaining water footprint are fully compensated.

Frequently asked questions

Why are the fitness criteria focused only on usage in water-stressed areas?

The KFI requires a company to eliminate its negative impacts in any area that is currently water-stressed or which is projected to be so in the future, in order to ensure a company does nothing to hinder progress towards a future where no one is suffering from a lack of such a vital resource. This does not mean that a company should simply 'leave the taps on' if located in an area of water abundance, and a company should strive to maximize water efficiency whenever possible. Whether a more nuanced approach can be taken, to also judge the quality of management of water from non-stressed sources, will be a subject of future work.

Useful links

The Water Stewardship Toolbox

CEO Water Mandate has created a toolbox, which is a collection of guidance documents, discussion papers and online tools to help companies identify water-stressed and high-risk catchments.

Alliance for Water Stewardship

The Alliance for Water Stewardship Standard is a globally consistent framework that defines a set of water stewardship criteria, indicators and steps for continual improvement at the catchment level.

The Water Footprint Network

The Water Footprint Network has developed The Global Water Footprint Standard, an internationally accepted methodology for conducting a Water Footprint Assessment.

Materials derive from sources that respect the welfare of ecosystems, people and animals

Goal description

As demand for natural resources increases, so does the pressure placed on the ecosystems, people and animals that contribute to their delivery. Many issues related to responsible sourcing – from reducing emissions to paying people a living wage – are covered by other future-fit goals.

The emphasis of this goal is on a specific issue not covered elsewhere: causing no harm as a result of physical sourcing activities (harvesting, fishing, hunting, rearing and mining).

This goal applies to all natural resources that contribute to the company's product inputs, – including any it produces itself, any sourced directly from suppliers, and any embedded into purchased materials. Thus this KFI is not specific to Internal Operations nor to Supply Chains, but rather an amalgam of the two.

Fitness criteria

It can be argued that natural resources embedded in *all* of a company's purchases – furniture, computers, cleaning supplies and so on – must be produced with zero negative impact, right down to the way metal is mined to make the paper clips on the CEO's desk. But stretching the concept of mutual accountability to such a level would be as unreasonable as it would be impractical.

The focus here is on what matters most to a company's ability to generate value: namely, natural resources that end up embedded in – or are consumed in the production of – physical goods, or which are necessarily consumed in the delivery of a service.[17] We refer to these collectively as product inputs.

Companies must preserve the health and future availability of all natural resources they depend upon for their product inputs. Examples include but are not limited to:

- Harvesting renewable resources at rates that do not reduce nature's capacity to regenerate them.
- Keeping non-renewable materials in closed loops to reduce demand for further extraction.

[17] For example, a cleaning company may necessarily consume detergents in the delivery of its services.

- Respecting the welfare of animals.
- Avoiding conflict and human rights violations when mining valuable minerals.

There is no one-size-fits-all set of criteria that span every possible natural resource. For each product input, the company must therefore identify the natural resources embedded within it, and make use of available expertise to pinpoint areas of concern for each type.

In particular, the company must meet the following requirements:

Requirements for managing natural resources.

A natural resource is future-fit if it (or a material it is part of) is from a reused or recycled source. Examples include:

- Recycled post-consumer plastic and paper.
- Repurposed by-products of other companies' production processes.
- Metals extracted from post-use electronic components.

A natural resource from a virgin source is future-fit if the following requirements are fulfilled:

For a renewable natural resource, it is required that:

- The rate of harvesting does not undermine natural recovery and regeneration rates.
- The structure, productivity, function and diversity of affected ecosystems are maintained.
- If relevant, appropriate barriers are in place to protect aquatic ecosystems from production impacts, and in particular fertilizer run-off.
- Activities do not cause the introduction of invasive alien species into the wild.
- Destructive farming and harvesting techniques are eliminated (e.g. bottom trawling fish-nets, monoculture crops, erosion, topsoil and sediment loss).
- Sourcing is in line with requirements set by relevant, leading industry standards.[18]

[18] As guidance, ISEAL Alliance has created a Standard-Setting Code that any good sourcing standard should adhere to. Examples of ISEAL members include Marine Stewardship Council certified seafood, The Ethical BioTrade Standard, Forest Stewardship Council and Rainforest Alliance

In addition, for resources derived from animals, it is required that:

- The physical and emotional welfare of reared animals is maintained, and the approach lives up to the internationally recognized Five Freedoms[19] or an equivalent.
- The hunting of endangered animals is eliminated.
- Sourcing is in line with requirements set by relevant, leading industry standards.[20]

For non-renewable, mined resources, it is required that:

- The sourcing of valuable minerals does not contribute to conflict and human rights violations, by explicitly addressing all issues relating to conflict-free mining.[21]
- The use of destructive extraction techniques is eliminated (e.g. open-cut mining).
- The structure, productivity, function and diversity of affected ecosystems are maintained.
- If relevant, appropriate barriers are in place to protect ecosystems from production impacts (e.g. mercury run-off).
- Sourcing is in line with requirements set by relevant, leading industry standards.

Key Fitness Indicator

To calculate fitness a company must take the following steps:

- Assess the fitness of a natural resource.
- Assess fitness across all natural resources.

Assessing the fitness of a natural resource.

The company must assess each natural resource as follows:

- A natural resource is 100% fit if it is sourced in accordance with the above criteria.
- Otherwise, the natural resource is considered 0% fit.

This is expressed as follows: Fitness of natural resource $n = f_n = \mathrm{X}\%$, where X= {0,100}.

[19] The Five Freedoms offer a set of fundamental principles in animal welfare that have been adopted by organizations such as The World Organisation for Animal Health (OIE), The British Veterinary Association (BVA) and The Royal Society for the Prevention of Cruelty to Animals (RSPCA).

[20] Examples include RSPCA's welfare standards and Soil Association's Organic Animals Standard.

[21] Examples of relevant standards include The Responsible Jewellery Council, Fairmined and The Conflict-Free Sourcing Initiative.

Assessing fitness across all natural resources.

When at least one natural resource has been assessed and identified as future-fit, the company's aggregate future-fit score can be calculated as follows:

- Add up the weight of all product inputs to get the total weight.
- Add up the weight of all natural resources contributing to those product inputs that have been identified as future-fit.
- Calculate fitness as the percentage of natural resource inputs which live up to the future-fit criteria (by weight).

This can be expressed mathematically as:

$$F^{All} = \frac{W_F}{W_T}$$

Where:

F^{All}	Is the company's future-fitness across all natural resources that contribute to its product inputs.
W_F	Is the total weight of all natural resources identified as future-fit.
W_T	Is the total weight of all product inputs.

Example

ACME Inc. sells lemonade products in two markets (A and B): traditional lemonade and sugar-free lemonade. Both products contain water and lemons, but whereas the first contains sugar, the latter contains an artificial sweetener.

ACME sources all lemons from farmers who live up to the stated future-fit criteria. However, it buys its sugar on commodity markets and has no idea where it comes from or how it was sourced. The artificial sweetener comes from a supplier who will not disclose which natural resources it uses.

The company can identify the fitness of each natural resource as:[22]

$$f_{Lemon} = 100\%$$
$$f_{Sugar} = f_{Sweetener} = 0\%$$

The company requires a total of 500kg of lemons, 150kg of sugar and 50kg of artificial sweetener to produce both products. It can now calculate its future-fitness as:

[22] Note that water is covered separately by the goal Water is used in an environmentally responsible and socially equitable way, and is therefore not included in this calculation.

$$F^{All} = \frac{W_F}{W_T} = \frac{500}{500 + 150 + 50} \approx 71\%$$

Definitions

Natural resources

We use the OECD definition:

Natural resources are natural assets (raw materials) occurring in nature that can be used for economic production or consumption.

Useful links

The Five Freedoms

The Farm Animal Welfare Committee (FAWC), a UK government initiative, proposes that good animal welfare implies both physical fitness *and* a sense of wellbeing for the animal. As guiding principles, FAWC formulated the following five freedoms:

- Animals must have freedom from thirst, hunger and malnutrition.
- Animals must have freedom from discomfort.
- Animals must have freedom from pain, injury and disease.
- Animals must have freedom to express normal behaviour.
- Animals must have freedom from fear and distress.

Frequently asked questions

What about materials used as fuels to produce energy?

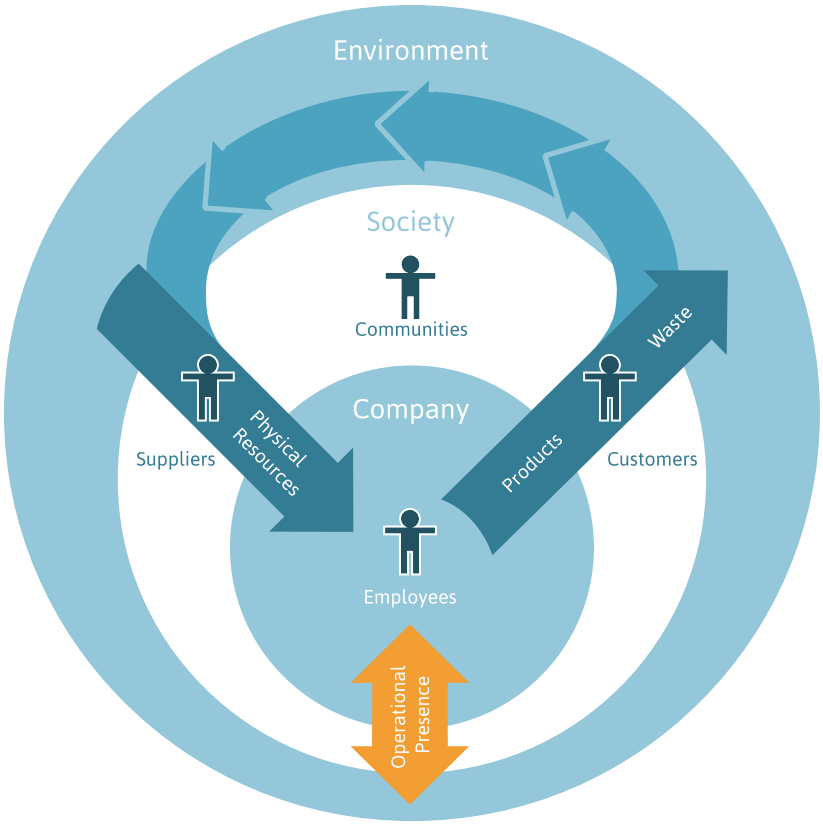
If the company itself or a supplier of a core outsourced function uses a material directly as a fuel as a necessary part of its production (e.g. coal or biomass burned in blast furnaces), then this material is considered to be a product input and should therefore be included.

What about water used in production?

Impacts related to water are captured by the goal Water is used in an environmentally responsible and socially equitable way, and thus are not covered by this goal.

Environment: Operational Presence

The health of ecosystems – and the rich biodiversity that sustains them – underpin many natural processes that business and society as a whole rely upon. Future-fit companies and their core suppliers ensure that their activities do not adversely affect such ecosystems.



Future-fit goals.

Each goal below has an Internal Operations KFI, and – to assess supply chain impacts for which the company is mutually accountable – a Supply Chain KFI.

- Operational emissions do not harm people or the environment
- Operations emit no greenhouse gases
- Operational by-products are repurposed
- Operations do not encroach on ecosystems or communities

Operational emissions do not harm people or the environment

Goal description

Company operations can cause the release of a range of chemicals and particles. The emission of substances that are already abundant in nature, and of substances that nature can break down rapidly and without consequence, are not a concern.

Some substances are known to be toxic to people and organisms. Other substances may not seem immediately harmful, but if nature cannot break them down rapidly they may – through emission into air, land or water – systematically build up in the environment to dangerous levels.

Substances that have a higher potential to systematically build up in nature, and thus are of greatest concern, include those that are scarce in nature (e.g. trace metals such as cadmium), those that are persistent (e.g. CFCs), and those that are emitted in large volumes (e.g. NOx). All such potentially harmful substances must be kept in tight closed loops, or not used in the first place.

The context of this goal may vary from local (e.g. soil, rivers) to global (e.g. air, oceans) depending on the substance and mode of emission.

Note that greenhouse gas emissions and waste disposal are covered separately by the goals Operations emit no greenhouse gases and Operational by-products are repurposed.

Fitness criteria

The requirement is for zero operational emissions that cause harm. This covers:

- Emissions into the atmosphere (air pollutants, leaks).
- Emissions into the ground (spills, and intentional emissions such as hazardous pesticides).
- Emissions into watersheds (water quality, spills).

A substance can cause harm if it has inherent characteristics that are classified as toxic, but it can also result from the interaction between substances or by any substance systematically increasing in concentration in nature. Substances that have a higher potential to systematically increase in concentration in nature, and therefore are of higher concern, include those that are scarce in nature (e.g. trace metals such as cadmium), those that are persistent because nature hasn't evolved the means to break them down quickly (e.g. CFCs), and those that are emitted in large volumes (e.g. NOx). For further guidance see this frequently asked question.

Identifying harmful emissions.

The company must identify all substances that are likely to be emitted as a result of its operational activities and which *could* cause harm. For the purposes of this goal, a substance is considered harmful if one or more of the following is true:

1. The substance is likely to build up in nature as a result of operational emissions.[23]
2. The substance is already considered harmful, according to one of the following sources:
    - Credible industry bodies relevant to the industry in question, who recommend the phasing out of the substance. [24]
    - Lists of substances which are legally banned in one or more of the company's areas of operations. [25]
    - Credible peer-reviewed research, which strongly suggests evidence of harm.
3. The substance is likely to interact with other substances, as a result of its emission, in ways that cause 1 or 2 to be true.

Key Fitness Indicator – Internal Operations

To calculate fitness a company must take the following steps:

- Identify emissions for each mode (air, land, water).
- Assess the fitness for each mode of emissions.
- Assess fitness across all three emission modes.

Identifying emissions into air, land and water.

Emissions into the atmosphere (Air):

- Identify all substances emitted into the air as a result of operational activities.
- Determine whether the identified substances are considered harmful. In particular, any substance classified as a criteria pollutant or as toxic by regulatory bodies or credible third parties should be considered harmful. [26]

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[23] For further explanation see this frequently asked question.

[24] For example, the Zero Discharge of Hazardous Chemicals (ZDHC) initiative, led by a group of leading apparel and footwear companies, has created a list of restricted or problematic substances relevant to the footwear and apparel industry. This should serve as credible guidance for any company in that industry, even if that company is not actively involved in ZDHC.

[25] In this case the substance should be banned from production across all company operations.

[26] See the Useful links section for potential starting points.

- Measure emissions of each harmful substance and aggregate up to a single total by weight.[27]

Emissions into the ground (Land):

- Identify all substances emitted on/into the ground as a result of operational activities. Examples include: accidental spills, some types of pesticides used in agricultural production, and chemicals used in fracking for oil/gas extraction.
- Determine whether the identified substances are considered harmful. In particular, any substance classified as hazardous (or potentially so) within the context in which it is being used by regulatory bodies or credible third parties shall be included.[28]
- Measure emissions of each harmful substance and aggregate up to a single total by weight.[29]

Emissions into watersheds (Water):

- Identify total water discharge by volume, quality and destination. At some sites discharged water may go to water treatment plants, and – depending on their effectiveness – may be returned to the watershed at equal or higher quality than before. Other sites may discharge some or all of their water (including effluents) directly into local waterways.
- Identify all substances emitted into watersheds, either directly or indirectly via insufficiently effective water treatment plants. Any substance so discharged which degrades the quality of the receiving water body shall be considered harmful.
- Measure emissions of each harmful substance, and aggregate up to a single total by volume.

Assessing the fitness of each mode of emission.

For each mode of emission (air, land and water) where harmful emissions have been identified, future-fitness is assessed as follows:

- The company chooses a reference year for which complete emission data is available (This will be the first year of measurement if no historic data exists). The reference

[27] Ideally, aggregation would be weighted according to some kind of toxicity equivalence, to reflect the seriousness of each substance's effects. However, authoritative tools to support this are not yet available for general use.

[28] For example, WHO has classified pesticides according to their hazardous properties, which act as authoritative guidance for companies using pesticides in production.

[29] Ideally, aggregation would be weighted according to some kind of toxicity equivalence, to reflect the seriousness of each substance's effects. However, authoritative tools to support this are not yet available for general use.

year is considered to be the company's worst year, and is assigned a future-fit score of 0%.[30]

- The company's fitness in a given year is then the annual reduction in emissions toward zero, relative to the reference level.

The calculation can then be expressed as follows for a given mode of emission:

- If the company's current emissions are higher than or equal to its reference year emissions, then its future-fit score remains at 0%.
- If the company's current emissions are lower than its reference year emissions, its future-fit score is calculated as the percentage reduction in emissions relative to the reference year.

For each mode of emission M, the calculation can be expressed mathematically as:

$$f^M = \begin{cases} \frac{E_R^M}{E_0^M} & for\ E_R \geq 0 \\ 0 & for\ E_R < 0 \end{cases}$$

Where:

M	Is the mode of emission: Air, Land, Water
f^M	Is the future-fitness of the company with respect to mode M.
E_0^M	Is the reference level of harmful emissions of mode M.
E_R^M	Is the **reduction** in total harmful emissions of mode M (i.e. reference emissions minus current emissions).

Note that future-fitness is considered to be 0% for any mode M if the company has not yet identified all harmful emissions of that type, or if emissions exceed regulatory thresholds. On the other hand, future-fitness is 100% if a full assessment has been undertaken and it has been found that no harmful substances are released.

Assess fitness across all three emission modes.

A company can choose to report emissions for each mode as three separate indicators (f^A, f^L, f^W) as described above – as long as all three indicators are reported.

[30] This step rewards companies that have a long history of gathering emissions data. Once a reference point has been chosen, it should not be changed.

Alternatively it can aggregate the three figures into a combined *average* Internal Operations KFI as follows:[31]

$$F^{Int} = \frac{1}{3}(f^A + f^L + f^W)$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
f^A	Is future-fitness with respect to *Air emissions*.
f^L	Is future-fitness with respect to *Land emissions*.
f^W	Is future-fitness with respect to *Water emissions*.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. It decides to begin its fitness assessment by looking at its water emissions. All waste water generated in its office is taken to a treatment plant where it is cleaned and returned to a river at the same quality as the river water. Its office therefore causes no harmful water emissions.

Its bottling plant on the other hand, has had a bad history of discharging its wastewater straight into a nearby river. The discharge peaked in 2006 with a total of 100,000 litres of discharged waste water, but has since been reduced by 80,000 litres following pressure from local communities. To calculate its fitness, the company chooses 2006 as its reference year and can now calculate fitness with respect to water as:

$$f^W = \frac{E_R}{E_0} = \frac{80{,}000}{100{,}000} = 80\%$$

The company has not yet assessed emissions into air or land. Therefore:

$$f^A = f^L = 0\%$$

The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{1}{3}(0\% + 0\% + 80\%) \approx 27\%$$

[31] This indicator is simplistic in the sense that it weighs equally the importance of emissions to air, land and water. However, this is felt to be an acceptable approach for this first release, in the absence of credible guidance on how to weigh each mode of emission according to its relative degree of impact.

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the emissions fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has eliminated all harmful emissions then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input for each mode of emission (air, land and water):

- **Estimate the emissions footprint**: An initial estimate of the amount of emissions – for the particular mode – that result from the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:
    - Its **emissions contribution**: The actual amount of harmful emissions caused by that supplier in the production of the product input (i.e. what it contributes to the total footprint). If a supplier has complete emissions data available for several years, it can choose its worst year as its reference year and use that as its emission contribution.
    - Its **fitness contribution:** The absolute reduction of harmful emissions achieved by that supplier relative to its chosen reference year.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Water discharge

We use the Alliance for Water Stewardship's definition:

***Water discharge**: The volume rate of abstracted water, including suspended solids (e.g., sediment), dissolved chemicals (e.g., CaCO3[aq]), and/or biologic material (e.g. diatoms), that is returned back to either a water service provider or directly into the catchment's freshwater resources. Discharge is typically expressed in the unit of m^3/s (cubic meters per second). Discharge may or may not include effluent.*

Effluent

We use the Alliance for Water Stewardship's definition:

*A subset of discharge, **effluent** is the wastewater (treated or untreated) from a production process that is discharged.*

Wastewater

We use the Alliance for Water Stewardship's definition:

***Wastewater**: Water that is of no further immediate value to the purpose for which it was used or in the pursuit of which it was produced because of its quality, quantity or time of occurrence. However, wastewater from one user can be a potential supply to a user elsewhere. Cooling water is not considered to be wastewater.*

Water quality

We use the Alliance for Water Stewardship's definition:

***Water quality**: A term used to describe the chemical, physical and biological characteristics of water, usually with respect to its suitability for a particular purpose. It is a measure of the condition of water relative to the requirements of one or more biotic species and/or to any human need or purpose.*

Useful links

See also Useful links for the goal Products do not harm people or the environment.

The Natural Step

The Natural Step is an international not-for-profit organization which pioneered the development and use of the Framework for Strategic Sustainable Development (upon

which the Future-Fit Business Benchmark is based). For more than two decades The Natural Step has worked with a wide range of companies, industry bodies and others to understand how substances can cause harm to society and the environment by assessing life cycle management practices against system conditions for a sustainable future. Various tools, guides and case studies are available on its website.

The US Environmental Protection Agency (EPA)

The EPA has a list of six criteria pollutants, which when emitted into the air can cause harm to people and the environment. These are particle pollution (often referred to as particulate matter), ground-level ozone (volatile organic compounds and nitrogen oxides), carbon monoxide, sulphur oxides, nitrogen oxides, and lead.

The EPA further maintains a list of 187 toxic air pollutants that are known or suspected to cause cancer or other serious health effects, or adverse environmental effects.

World Health Organization (WHO)

WHO has published a recommended classification of pesticides by hazards. The hazard level ranges from "unlikely to present acute hazard" to "extremely hazardous."

Frequently asked questions

See Why is a substance considered harmful if it can build up in the environment? under the goal Products do not harm people or the environment.

Operations emit no greenhouse gases

Goal description

There is no longer any doubt that the systematically increasing concentration of greenhouse gases (GHGs) in the atmosphere is causing climate change and ocean acidification. Companies should respond accordingly, to ensure that their operations cause no GHG emissions.

Nature can safely absorb some human-made GHGs every year, but the future-fit imperative is for companies to eliminate all operational GHG emissions. That's because we are dangerously close to reaching atmospheric GHG levels that will be catastrophic for society, and any attempt to divide up the remaining carbon budget across companies is too complex and contentious to be practical.

The requirement is for a company to emit net zero GHGs as a result of its operational activities and energy consumption. We consider net GHG emissions to be total GHG emissions less any emissions that are permanently sequestered or adequately offset.

Fitness criteria

The requirement is for a company to emit *net zero* GHGs as a result of its operational activities and energy consumption.

Identifying total GHG emissions and reduction activities.

A company must eliminate all GHG emissions that result from the following: [32]

- Direct GHG emissions that occur from sources that are owned or controlled by the company (Scope 1 emissions).
- GHG emissions from the generation of purchased or acquired energy (in the form of electricity, steam, heating, or cooling) consumed by the company (Scope 2 emissions).
- Emissions due to employee transportation that is paid for by the company (including employee commuting when paid for or reimbursed by the company).

Following the guidance of The Greenhouse Gas Protocol, a company must factor in emissions of the seven major GHGs covered by the Kyoto Protocol, and use 100-year Global Warming Potential (GWP) values from the IPCC as conversion factors.[33] Further, a company *should* report the emissions of any other identified GHG (if GWP values from

[32] Emissions that occur from supply chain activities are captured in the Supply Chain KFI, and emissions that necessarily result from customer use of the company's products are addressed by the goal Products emit no greenhouse gases. See this FAQ for further detail.

[33] A company *should* use GWP values from the most recent IPCC report.

IPCC exist). A total should then be determined, as a gross figure in tonnes of CO_2 equivalent ($C0_2e$).

Companies can engage in GHG reduction activities in order to cancel out emissions from elsewhere in their operations. This can take the form of sequestering projects or appropriate offsets, but any offsetting must live up to a set of Good Quality Criteria in order to qualify. All valid reductions should be subtracted from the total emissions figure to determine the company's net GHG emissions.

Key Fitness Indicator – Internal Operations

When all GHG emissions have been identified fitness can be calculated as follows:

- The company chooses a reference year for which complete emission data is available (This will be the first year of measurement if no historic data exists). The reference year is considered to be the company's worst year, and is assigned a future-fit score of 0%.[34]
- The company's future-fitness in a given year is then the annual reduction in emissions toward zero, relative to the reference year.

The calculation can then be expressed as follows:

- If the company's current emissions are higher than or equal to its reference year emissions, then its future-fit score remains at 0%.
- If the company's current emissions are lower than its reference year emissions, its future-fit score is calculated as the percentage reduction in emissions relative to the reference year.

This can be expressed mathematically as:

$$F^{Int} = \begin{cases} \frac{E_R}{E_0} & for \;\; E_R \geq 0 \\ 0 & for \;\; E_R < 0 \end{cases}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_0	Is the reference year emissions.
E_R	Is the **reduction** in total emissions relative to the reference year (i.e. reference year emissions minus current emissions).

[34] This step rewards companies that have a long history of gathering emission data. Once a reference point has been chosen, it should not be changed.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The office has always been powered by wind power and causes no GHG emissions. The company started measuring GHG emissions from its bottling plant from its first year of production, ten years ago. Since then its lemonade production has grown rapidly, resulting in steadily increasing emissions up until 2007 where annual emissions peaked at a total of 1000 tonnes CO_2e. The company therefore choses 2007 as its reference year.

Since then the company has managed to continue to increase production while lowering annual emissions to 800 tonnes of CO_2e – a total reduction of 200 CO_2e.

The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_R}{E_0} = \frac{200}{1000} = 20\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the GHG fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has eliminated its GHG emissions then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the

entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the GHG footprint**: An initial estimate of the amount of GHG emissions that result from the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:
  - Its **GHG contribution**: The actual amount of GHG emissions caused by that supplier in the production of the product input (i.e. what it contributes to the total footprint). If a supplier has complete GHG emissions data available for several years, it can choose its worst year as its reference year and use that as its GHG contribution.
  - Its **fitness contribution:** The absolute reduction of GHG emissions achieved by that supplier relative to its chosen reference year.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Major greenhouse gases.

The Kyoto Protocol covers the following seven major greenhouse gases: carbon dioxide (CO_2); methane (CH_4); hydrofluorocarbons (HFCs); nitrous oxide (N_2O); perfluorocarbons (PFCs); sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).

Carbon offset: good quality criteria.

We use the criteria put forth by the UK's Department for Environment, Food & Rural Affairs, which are the following:

- **Additionality** – Projects must demonstrate that they have produced a saving in carbon that would not have happened otherwise i.e. the project could not take place without the carbon finance from selling credits. The project must not be required by legislation or to demonstrate compliance against legally binding targets. This should be demonstrated via a project methodology developed by a recognised body.
- **Avoiding leakage** – The project must demonstrate that it has not caused an increase in carbon emissions elsewhere. Leakage is when the carbon saving made at a project/location/time increases emissions elsewhere. An assessment must be made of any effects from the project whether up stream or downstream. This must be taken into account in determining the total emissions that can be sold from that project.
- **Permanence** – If the project could be impermanent, (e.g. forestry projects are at risk of disease or fire) then this must be addressed by the project developer or offset

provider. To achieve this, impermanent projects must be periodically independently reviewed and, if necessary, credits must be replaced when they expire or cease to be valid.

- **Validation and verification** – The project must receive independent verification. The verifier must be an accredited and recognised independent third party. Purchasers of credits should also ensure that robust, independent validation and verification procedures were in place to check projects were implemented according to the methodology and subsequently monitored to ensure that emission reductions were properly measured.
- **Timing** – Carbon credits should be ex-poste, that is, they must only have been issued from the project after the emissions reduction has taken place.
- **Avoiding double counting** – A registry must be used to register, track and permanently cancel credits to avoid double counting or double selling. The project must not be double counted against another policy or mandatory targets.
- **Transparency** – Credits should be supported by publicly available project documentation on a registry to set out the underlying projects (when they were considered approved and implemented), the quantification methodology applied and independent validation and verification procedures and reports for project and credits.

Useful links

The Greenhouse Gas Protocol

The Greenhouse Gas Protocol is a widely recognized accounting tool for quantifying greenhouse gas emissions. See Required Greenhouse Gases in Inventories: Accounting and Reporting Standard Amendment for further guidance on Scope 1 and Scope 2 emissions.

Frequently asked questions

How does this relate to Greenhouse Gas (GHG) Protocol Scopes?

The Internal Operations KFI for this goal covers all Scope 1 and Scope 2 emissions. It also extends to include business travel and employee commuting when paid for or reimbursed by the company, which generally fall under Scope 3 of the GHG Protocol. Furthermore, the Supply Chain KFI holds a company mutually accountable for all cradle-to-gate GHG emissions associated with purchased product inputs, as well as emissions that occur as a result of suppliers of outsourced core functions delivering their services to the company.

For further details of how the Benchmark goals and KFIs relate to the GHG Protocol see see Appendix 1.

What about emissions from livestock?

This is a tricky question. Emissions that result as part of natural processes – such as animal digestion – is a natural part of the system and is not inherently unfit. However, given the scale of the impacts associated with the global meat industry we suggest treating cattle farmers as meat producing companies. That is, we consider them as companies that use cattle as 'equipment' to produce meat (the product) and therefore emissions from cattle fall under operational impacts.

Operational by-products are repurposed

Goal description

The world's resources are dwindling. Renewable resources are consumed faster than they can regenerate, and as society's most accessible finite resources are used up, extraction methods become increasingly disruptive. Demand for virgin resources can be mitigated if all of the materials society uses are repurposed, rather than discarded as waste. Doing so also eliminates the costs – financial, environmental and human – that waste disposal incurs.

Future-fit companies ensure that all of their operational by-products are repurposed. In particular, organic waste may be composted and returned to the soil, and materials that can be reused forever (e.g. certain metals) must be reclaimed.

Note that waste in the form of direct emissions into air, land or water is covered by the goal Operational emissions do not harm people or the environment.

Fitness criteria

A company must eliminate by-products wherever possible and – in descending order of preference – must repurpose any unavoidable by-product as follows:

- Refurbish, remanufacture or reuse: it is cleaned, repaired or otherwise processed to be used again.
- Recycle: it is turned into a new product input that the company itself or a third party can use.
- Recover: it is a *biogenic substance* (100% derived from animals/plants)[35] and it is recovered as energy after the options above have been exhausted.

That is, a company must eliminate all avoidable by-products and then repurpose unavoidable by-products in ways that minimize quality loss by prioritizing refurbishment, remanufacture or reuse before recycling and – for biogenic materials – prioritizing recycling before energy recovery.

[35] Biogenic substances are those produced by life processes (from plants or animals). For the purposes of future-fitness, repurposing does *not* extend to include by-products that contain *non-biogenic* substances if they are incinerated for their energy content (e.g. burning end-of-life tires to generate electricity). Energy from waste is generally classified as being only *partly* renewable if the waste contains non-biogenic substances.

Key Fitness Indicator – Internal Operations

A company must measure the total weight of all waste generated, across all company sites. Fitness can then be calculated as follows:

- The company chooses a reference year for which complete waste generation data is available (this will be the first year of measurement if no historic data exists). The reference year is considered to be the company's worst year, and is assigned a future-fit score of 0%.[36]
- The company's future-fitness in a given year is then the annual reduction in un-repurposed waste toward zero, relative to the reference year level.

Once a company starts to repurpose a particular by-product (in line with the aforementioned guidance) it is no longer considered to be waste. Thus the calculation can be expressed as follows:

- If the company's current waste generation is higher than or equal to that in its reference year, then its fitness score remains at 0%.
- If the company's current waste generation is lower than that in its reference year, its future-fit score is calculated as the percentage reduction in waste generation relative to the reference year.

This can be expressed mathematically as:

$$F^{Int} = \begin{cases} \frac{W_R}{W_0} & for \;\; E_R \geq 0 \\ 0 & for \;\; E_R < 0 \end{cases}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
W_0	Is the reference year level of waste generation.
W_R	Is the **reduction** in un-repurposed waste relative to the reference year (i.e. reference year waste minus current waste).

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company started measuring its total waste generation for both sites in 2010, at which point it produced a total of 50,000 tons of waste annually.

[36] This step rewards companies that have a long history of gathering waste data. Once a reference year has been chosen, it should not be changed.

Since then the company has taken several steps to reduce this figure. It has optimized its bottling process, eliminating 10,000 tons of waste, and it has introduced a recycling program at both sites which encourages recycling amongst employees, further eliminating 5,000 tons of un-repurposed waste.

The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_R}{E_0} = \frac{10{,}000 + 5{,}000}{50{,}000} = 30\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the repurposing fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has eliminated its generation of un-repurposed waste then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the waste footprint**: An initial estimate of the amount of waste generation that result from the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.

- Identify a supplier contributing to the production of the product input – and for that supplier:
  - Its **waste contribution**: The actual amount of waste generated by that supplier in the production of the product input (i.e. what it contributes to the total footprint). If a supplier has complete waste data available for several years, it can choose its worst year as its reference year and use that as its waste contribution.
  - Its **fitness contribution:** The absolute reduction in un-repurposed waste generation achieved by that supplier relative to its chosen reference year.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Refurbishment

We use the definition of The Ellen MacArthur Foundation:

A process of returning a product to good working condition by replacing or repairing major components that are faulty or close to failure, and making 'cosmetic' changes to update the appearance of a product, such as cleaning, changing fabric, painting or refinishing.

Remanufacture

We use the definition of The Ellen MacArthur Foundation:

Remanufacture denotes the process of disassembly and recovery at the sub-assembly or component level. Functioning, reusable parts are taken out of a used product and rebuilt into a new one. This process includes quality assurance and potential enhancements or changes to the components.

Reuse

We use the definition of The Ellen MacArthur Foundation:

The use of a product again for the same purpose in its original form or with little enhancement or change.

Recycling

We use the definition of The Ellen MacArthur Foundation:[37]

Recycling is the process of recovering materials for the original purpose or for other purposes. The materials recovered feed back into the process as crude feedstock. Recycling excludes energy recovery.

Energy recovery

We use the definition of The Ellen MacArthur Foundation:

The conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of so-called waste-to-energy processes, including combustion, gasification, pyrolysis, anaerobic digestion, and landfill gas recovery.

Frequently asked questions

Why isn't all energy from waste considered to be renewable?

Residual waste often contains a mix of biogenic materials like food waste and scrap wood, as well as materials from fossil sources such as plastics. Energy recovered from such waste is only considered to be *partially* renewable.

What about hazardous waste?

This goal encompasses all by-products generated from company operations, which includes hazardous waste. It may be particularly difficult for companies to repurpose hazardous waste, but a company should nonetheless work toward its elimination.

Useful links

The Ellen MacArthur foundation

The Ellen MacArthur foundation works with business, government and academia to build a framework for a Circular Economy: an economy that is restorative and regenerative by design.

[37] This definition describes recycling of technical materials only (as opposed to biological materials) which is why energy recovery is excluded.

Operations do not encroach on ecosystems or communities

Goal description

Growing demand for land is putting pressure on ecosystems, communities and plant and animal species. Companies that do not adequately consider the impacts of their physical presence may cause irreversible degradation to natural processes and resources that they and others rely on, and may undermine the wellbeing of local communities.

The requirement is to eliminate negative impacts in areas of high biological, ecological, social or cultural value. Companies must protect such areas where they are already present, and must refrain from expanding into new areas if degradation of some kind is possible.

Fitness criteria

All negative impacts in areas of high biological, ecological, social or cultural value must be eliminated. This includes but is not limited to:

- Protecting primary forest (e.g. no clearing of rainforest for farm land).
- Respecting the land rights of communities (e.g. zero tolerance on land grabbing).
- Not introducing invasive species that could affect local ecosystems.
- Protecting aquatic ecosystems from degradation (e.g. diverting sea traffic away from endangered coral reefs).
- Avoiding encroaching on areas of religious/sacred importance to local communities or indigenous peoples.[38]

Determining requirements.

The company must identify all company-controlled sites where it could conceivably impact ecosystems or communities.[39] Each of these must be assessed according to the following requirements:

[38] This includes interference caused by noise pollution.

[39] A "site" is here taken to mean any operational facility or activity with a physical presence.

Identify and assess local ecosystems:

- Identify all local natural ecosystems, aquatic and terrestrial, which may be affected by the site, and identify any and all ways the company's presence has, is, or may be likely to impact the ecosystem.[40]
- Determine whether each such ecosystem constitutes a High Conservation Value (HCV) area or a pristine ecosystem, and assess its state of preservation. The HCV Resource Network provides guidance for HCV identification.

Protect all HCV ecosystems:

- The characteristics, functions, diversity and state of preservation of each HCV area must be protected from any and all negative impacts arising from the company site. No activities whatsoever must occur in (or close enough to affect) pristine ecosystems, such as primary forests and wetlands.
- This requires effective monitoring and management. The company should follow the guidance provided by the HCV Resource Network or an alternative of equal credibility. In either case, the company must identify the methodology it uses.
- The company *is required to restore* any HCV area previously affected by the creation of a site that it later comes to control (e.g. if a third party clears primary forest to make way for a palm oil plantation, which the company then acquires). Halting such degradation is not enough: the company must neutralize the site's earlier impacts (e.g. through reforestation).[41]
- A company *is not required to restore* any HCV area degraded by factors *beyond its control and from which it does not benefit*. This includes areas affected by natural disasters, climate change, and the actions of third parties with whom the company has not got (and has never had) a commercial relationship (e.g. public infrastructure projects, indigenous settlements).

Key Fitness Indicator – Internal Operations

To calculate fitness a company must take the following steps:

- Assess fitness of each site.
- Assess fitness across all sites.

[40] By way of example, a shop in a mall is unlikely to impact local ecosystems, but an open cast mine may well do.

[41] Looking back far enough in time, all developed sites were once pristine ecosystems. The intention here is to hold companies accountable for previous degradation of areas that occurred in recent history, and only insofar as their conversion relates to business use.

Assessing the fitness of each site.

The company must assess each site as follows:

- A site is 100% fit with respect to this goal if all criteria have been met.
- Otherwise, it is 0% fit.

This is expressed as follows: Fitness of site $s = f_s = \mathrm{X}\%$, where X = {0,100}.

Assessing fitness across all sites.

When all sites have been identified and assessed fitness can be calculated as follows:

- Add up the area of every site which lives up to the stated requirements.
- Add up the area of every site with the potential to encroach on ecosystems or communities.[42]
- Calculate fitness as the percentage of company controlled areas that meet stated criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{A_F}{A_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
A_F	Is the total area controlled by the company which lives up to future-fit criteria.
A_T	Is the total area controlled by the company with the potential to encroach on ecosystems or communities.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The office is located in a shared building in the middle of a city centre, in a long established commercial district. The office therefore, does not have the potential to encroach on ecosystems or communities. The bottling plant on the other hand, which spans 10,000 m^2, is located in an area of high biodiversity and was originally built by the company as a greenfield investment.

[42] A consistent unit of area must be chosen (hectare, square meters etc.).

The company now undertakes a thorough assessment to understand how its activities have impacted and may still impact local biodiversity. It finds that the types of trees it cut down to make way for the factory supported a range of local wildlife. Therefore:

$$f_{Factory} = 0\%$$

and

$$F^{Int} = \frac{A_F}{A_T} = \frac{0}{10{,}000} = 0\%$$

The company then decides to eliminate this impact by working with local communities to replant the same types of trees near the site, to help recreate the greenfield environment it built upon. Independent biodiversity specialists are brought in to help reintroduce and monitor the return of native species to the area, and after five years the verdict is that the company's negative impact has been reversed.

The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{A_F}{A_T} = \frac{10{,}000}{10{,}000} = 100\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site lives up to all stated criteria then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the land footprint**: An initial estimate of the amount of land that is needed for the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identity a supplier contributing to the production of the product input – and for that supplier:
  - Its **land contribution**: The total area of the site(s) used by that supplier in the production of the product input (i.e. what it contributes to the total footprint).
  - Its **fitness contribution:** The total area of the site(s) used by that supplier which live up to stated criteria.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Ecosystem

We use the Forest Stewardship Council (FSC)'s definition:

Ecosystem: *A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.*

High Conservation Value (HCV) Area

We use the HCV Resource Network's definition:

HCVs are biological, ecological, social or cultural values which are considered outstandingly significant or critically important, at the national, regional or global level.

The HCV Resource Network lists six categories of HCVs:

HCV 1

- *Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.*

HCV 2

- *Intact forest landscapes and large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable*

populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 3

- *Rare, threatened, or endangered ecosystems, habitats or refugia.*

HCV 4

- *Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.*

HCV 5

- *Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or indigenous peoples.*

HCV 6

- *Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.*

For further guidance see Common Guidance for HCV Identification, Management and Monitoring.

Pristine ecosystem

We use the Union for Ethical BioTrade's definition:

Pristine ecosystem: *An ecosystem in its original condition, not disturbed by human beings.*

Primary forest

We use the Food and Agriculture Association (FAO)'s definition:

Primary forest: *Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.*

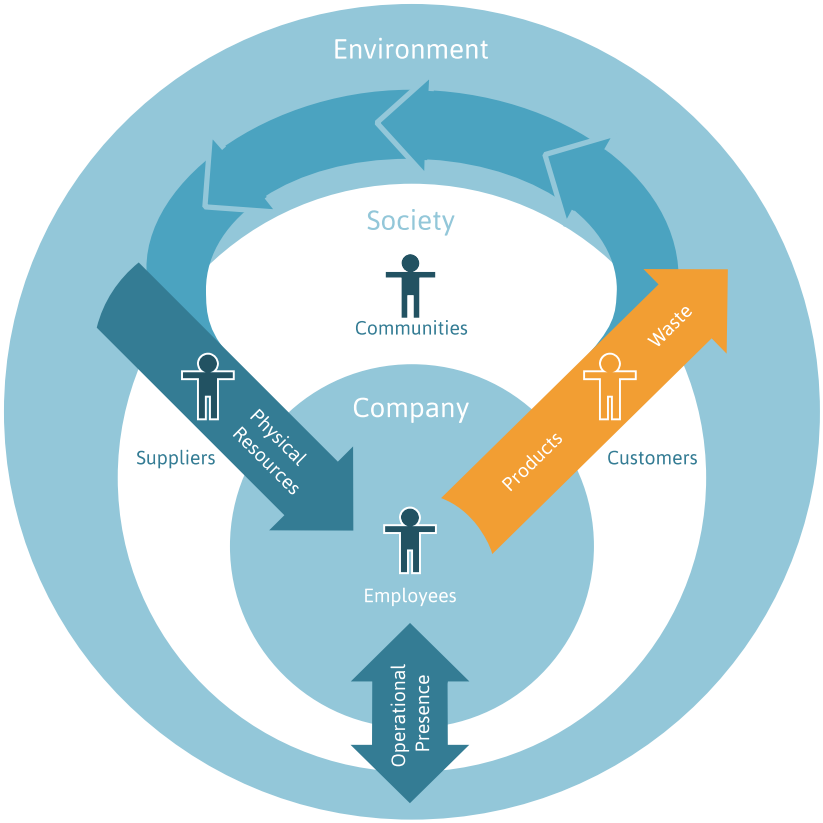
Useful links

The High Conservation Value (HCV) Resource Network

The HCV Resource Network is a member organization that promotes the use of the HCV approach as a natural resource management tool, giving guidance on how to identify HCV areas and monitor and manage them effectively. Members include World Resource Institute, World Wildlife Fund, Forest Stewardship Council and Greenpeace.

Customers

Historically, many companies have paid little attention to any adverse effects stemming from what they sell. Future-fit companies act as lifetime stewards for their products, and realize they have an obligation to actively engage customers and ensure their products cause no harm to people or the planet.



Future-fit goals.

Each goal below has a single KFI, which measures the extent to which a company's goods and services are future-fit.

- Products do not harm people or the environment
- Products emit no greenhouse gases
- Products can be repurposed
- Customers are informed about any aspect of products that may cause harm
- Customer concerns are actively solicited, impartially judged and transparently addressed

Products do not harm people or the environment

Goal description

Almost all products have the potential to cause harm, depending upon their inherent characteristics and the way in which they are used: even water is dangerous in the wrong quantity and at the wrong time. The emphasis here is on products whose intent – or likely consequence of use – is to cause physical degradation (e.g. bombs) or physical harm to people (e.g. landmines), as well as on products that contain substances that may physically or chemically disrupt the health of people, organisms and ecosystems when used as intended (e.g. cigarettes) or when processed at their end of life.

Some products contain substances which, when used or disposed of, directly impact people's health and/or lead to degradation of the environment. Other products cause the release of a range of chemicals and particles that systematically increase in concentration in nature and therefore will eventually undermine health and damage ecosystems. The environment cannot break down certain synthetic substances (e.g. persistent organic pollutants, many plastics). Such substances must be kept in closed loops or not used in the first place. Substances already present in nature (e.g. copper, phosphates) disrupt natural processes if their global or local concentration becomes too great.

Note that greenhouse gases are excluded as they are covered by the goal Products emit no greenhouse gases.

Fitness criteria

No product is future-fit if it is likely to harm people or the environment as a result of its use, whether intended or not. Examples include landmines, bottom-trawling fishing nets which damage aquatic ecosystems, and many plastics that leak persistent compounds foreign to nature.

A future-fit product can contain a problematic substance, as long as it is safely embedded in the product and kept in a 'closed loop' system so that it is safely retrieved and repurposed at the end of its useful life. However, today's infrastructure for handling end-of-life products is a long way from reaching this ideal. In fact – with few exceptions – many types of product end up in landfill, as litter on land or in oceans, or are incinerated in ways that cause dioxin emissions. So unless special steps are taken (for example, the provision of highly effective end-of-life take-back services and leasing models), it is reasonable to assume that any substance of concern present in a product may well eventually end up escaping into the environment.

The requirement is therefore that a product – and its packaging – does not contain any substance that is known to be harmful or that may increase in concentration in the environment, *unless* the company can show that the product or packaging is managed in an effective closed loop system, and that the risk from emissions and leakages has been eliminated.

A substance can cause harm if it has inherent characteristics that are classified as toxic, but it can also result from the interaction between substances or by any substance systematically increasing in concentration in nature. Substances that have a higher potential to systematically increase in concentration in nature, and therefore are of higher concern, include those that are scarce in nature (e.g. trace metals such as cadmium), those that are persistent because nature hasn't evolved the means to break them down quickly (e.g. CFCs), and those that are emitted in large volumes (e.g. NOx). For further guidance see this frequently asked question.

Identifying substances of concern.

For the purposes of this goal a substance is considered harmful if one or more of the following is true:

1. The substance is likely to build up in nature as a result of the product's use or end-of-life processing.[43]
2. The substance is already considered harmful, according to one of the following sources:[44]
    - The freely available SIN List, created by The International Chemical Secretariat, which identifies a range of substances known to be of very high concern to human or environmental health.[45]
    - Credible industry bodies relevant to the products in question, who recommend the phase out of the substance.[46]

[43] For guidance see this frequently asked question.

[44] For example, Bisphenol A (BPA) is a widely used chemical and a known endocrine disruptor. It is widely used to line food and beverage containers, where it can leach into the digested products, resulting in possible adverse health effects for the final consumer.

[45] The chemicals on the SIN List have been identified as 'Substances of Very High Concern' based on the criteria established by the EU chemicals regulation REACH.

[46] For example, the Zero Discharge of Hazardous Chemicals (ZDHC) initiative, led by a group of leading apparel and footwear companies, has created a list of restricted or problematic substances relevant to the footwear and apparel industry. This should serve as credible guidance for any company in that industry, even if that company is not actively involved in ZDHC.

- Lists of substances which are legally banned in one or more of the company's markets.[47]
- Recent peer-reviewed research that suggests the substance causes harm if relevant to the composition and/or use of the product.[48]

3. The substance is likely to interact with other substances, as a result of the product's use or end-of-life processing, in ways that cause 1 or 2 to be true.

Key Fitness Indicator

If a product is intended to cause harm, or if harm is a likely consequence of its use, then it is considered to be 0% fit.

For all other products, fitness is assessed based on the substance composition of every product component within it (i.e. anything on the product's bill of materials).

To calculate fitness a company must take the following steps:

- Assess the fitness of a product component.
- Assess the fitness of a product.
- Assess fitness across all products.

Assessing the fitness of a product component.

Each product component must be assessed as follows:

- Identify the composition of the component. Due to the complex ways in which products are created, it is conceivable that a substance is introduced unintentionally at some point in the supply chain. But ignorance of contaminants is no defence. Thus companies should investigate the composition of the component down to the level of 100 parts per million or 0.01% by product weight.
- Test the component for *any* trace level of substances that are of particularly high concern.[49]
- Assess substances. Identify whether the component contains any substances that are considered harmful based on the stated criteria.

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[47] For example, the European Union's *Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive* restricts certain chemical substances in products. As these substances are known to be harmful, electronics companies should phase out their use worldwide, and not just where current legislation requires.

[48] For example, cleaning detergents that through their intended use end up in wastewater should contain no metal or mineral whose natural concentration in the environment is low or zero.

[49] These thresholds are recommended by BizNGO, an initiative of Clean Production Action, a leading organization in the shift toward the elimination of hazardous chemicals in production. Here they have been adapted to apply at the material level – and not the product level.

A product component is considered to be 100% fit *if* it has been assessed and:

- No harmful substance is present; or
- The company can show that any such substance that is present can never adversely affect people or escape into the environment.

Otherwise the product component is considered to be 0% fit.

Note that if a company identifies a harmful substance, it must be substituted for an alternative that lives up to the stated criteria to become 100% fit. Substances of similar composition and structure to known harmful substances should be avoided, unless and until they are shown to comply.[50]

Assessing the fitness of a product.

When at least one component has been assessed and identified as future-fit, the fitness of a product *p* can be calculated as follows:

- Add up the weight of all product *p*'s components to get the total weight of product *p.*
- Add up the weight of all product *p*'s components identified as future-fit.
- Calculate product *p*'s fitness as the percentage of components which live up to the future-fit criteria (by weight).

This can be expressed mathematically as:

$$f_p = \frac{W_F}{W_T}$$

Where:

f_p	Is the future-fitness of product *p.*
W_F	Is the total weight of all components identified as future-fit.
W_T	Is the total weight of product *p.*

Assessing fitness across all products

The company's aggregated future-fit score can now be calculated as a revenue-weighted sum of the fitness of each product. Thus each product's fitness will be weighted according to how much it contributes to the company's overall revenue. This can be expressed mathematically as:

[50] ChemSec has developed the free, online software tool Sinimilarity, which identifies substances that are structurally similar to SIN List substances.

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{\sum_{p=1}^{P} R_p}$$

Where:

F^{Prod}	Is the company's cross-product fitness.
P	Is the total number of products in the company's portfolio.
f_p	Is the future-fitness of product *p*.
R_p	Is the revenue generated by product *p*.

Example

ACME Inc. sells two lemonade products. Traditional lemonade and sugar-free lemonade. Both products contain water and lemons, but whereas the first contains sugar, the latter contains an artificial sweetener. The company uses a total of 500kg of lemons (250kg for each product), 150kg of sugar and 50kg of artificial sweetener to create all of it products. Further, ACME Inc. uses 500kg worth of glass and 300kg worth of plastic for each of its two types of lemonade.

ACME Inc. has already worked closely with its lemon and sugar suppliers to make sure each input is free of trace elements of problematic pesticides, and has established that the glass it uses is completely harmless. However, it has not yet analysed the artificial sweetener, nor the plastic. It can now calculate the fitness of each product as:

$$f_{Trad} = \frac{W_F}{W_T} = \frac{250 + 150 + 500}{250 + 150 + 500 + 300} \approx 75\%$$

$$f_{SugFree} = \frac{W_F}{W_T} = \frac{250 + 500}{250 + 50 + 500 + 300} \approx 68\%$$

The traditional lemonade brings in $200,000 of revenue, and the sugar-free lemonade brings in $300,000. ACME's cross-product fitness is therefore:

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{\sum_{p=1}^{P} R_p} = \frac{75\% \times 200{,}000 + 68\% \times 300{,}000}{500{,}000} \approx 71\%.$$

Useful links

BizNGO

BizNGO is a collaborative initiative involving both companies and environmental groups, working to ensure safer chemicals and sustainable materials in products and production.

- See BizNGO's Guide to Safer Chemicals for detail on the level of granularity required when analysing product composition, and for information on residuals of high concern.

Clean Production Action

Clean Production Action's mission is to design and deliver green chemicals and sustainable materials. The group is the creator or co-creator of a range of programs and initiatives that aim to advance safe, green and sustainable materials in production. These include:

- Green Screen® for Safer Chemicals, a benchmarking tool for chemical hazard assessment that enables companies to identify chemicals of concern to human health and the environment and to select safer alternatives. This is fully transparent and available for anyone to use.
- The Chemical Footprint Project, which tracks, disseminates, and benchmarks corporate progress toward using safer chemicals in products, manufacturing, and supply chains.

The International Chemical Secretariat

The International Chemical Secretariat (ChemSec) is a non-profit organization, based in Sweden and founded by four environmental organizations: The Swedish Society for Nature Conservation; WWF Sweden; Nature and Youth; and Friends of the Earth Sweden. ChemSec maintains the following useful resources:

- The SIN (Substitute It Now!) List, a constantly evolving list of harmful substances that should be phased out of all products, regardless of the industry.
- Sinimilarity, a free online tool that identifies substances which are structurally similar to SIN List substances.

The Natural Step

The Natural Step is an international not-for-profit organization which pioneered the development and use of the Framework for Strategic Sustainable Development (upon which the Future-Fit Business Benchmark is based). For more than two decades The Natural Step has worked with a wide range of companies, industry bodies and others to understand how substances can cause harm to society and the environment by assessing life cycle management practices against system conditions for a sustainable future. Various tools, guides and case studies are available on its website.

Frequently asked questions

Why is a substance considered harmful if it can build up in the environment?

As our understanding of the effects of chemicals increases, international bodies, NGOs and regulators will continue to identify substances whose use should be eliminated. This is

typically due to their inherent characteristics, toxicity classification and resultant effects on people and the environment.

However, harm to the environment cannot always be known in advance. For example, substances such as CFCs were hailed as a modern wonder due to their stable state and long life. It was not understood that CFCs build up in the atmosphere, resulting in the destruction of the ozone layer. Allowing substances to systematically increase in concentration in the environment is fundamentally at odds with system principles for a sustainable society and will eventually lead to harm when thresholds are surpassed.

Many of the compounds on the SIN list went through the same stages. They were known to increase in concentration but were allowed to be used until damaging thresholds were exceeded, and correlations were effectively demonstrated. A future-fit company doesn't wait for evidence in such cases. Substances known to be of *immediate* concern include:

- Human-made synthetics that are novel or foreign to nature[51] (e.g. persistent organic pollutants (POPs)[52] including endocrine disrupting chemicals (EDCs),[53] radioactive materials,[54] and nanomaterials /micro-plastics[55]).
- Metals that are not naturally abundant in nature and their compounds (e.g. compounds of heavy metals like mercury, lead, zinc, and cadmium).[56]
- Stratospheric ozone-depleting chemical substances.[57]
- Aerosols.[58]

[51] "The nine planetary boundaries," Stockholm Resilience Centre. See "Chemical pollution and the release of novel entities."

[52] "Stockholm Convention: Facts and Figures," United Nations Industrial Development Organization.

[53] "Dirty Dozen Endocrine Disruptors," Environmental Working Group.

[54] "The nine planetary boundaries," Stockholm Resilience Centre. See "Chemical pollution and the release of novel entities."

[55] Will Steffen et al, "Planetary boundaries: Guiding human development on a changing planet," *Science* magazine, February 2015. See "Introduction of novel entities."

[56] Christian Azar, John Holmberg, and Kristian Lindgren, "Socio-ecological indicators for sustainability," *Ecological Economics 18 (89-112)*, Institute of Physical Resource Theory, Chalmers University, of Technology and University; of Goteborg, Sweden, 1996.

[57] "The nine planetary boundaries," Stockholm Resilience Centre. See "Stratospheric ozone depletion".

[58] "The nine planetary boundaries," Stockholm Resilience Centre. See "Atmospheric aerosol loading".

Products emit no greenhouse gases

Goal description

There is no longer any doubt that the systematically increasing concentration of greenhouse gases (GHGs) in the atmosphere is causing climate change and ocean acidification. Companies should respond accordingly, to ensure that their products cause no GHG emissions when used as intended.

Nature can safely absorb some human-made GHGs every year, but the future-fit imperative is for companies to eliminate *all* product-related GHG emissions. That's because we are dangerously close to reaching atmospheric GHG levels that will be catastrophic for society, and any attempt to divide up the remaining carbon budget across companies is too complex and contentious to be practical.

Products powered by electricity can be considered as indirectly causing GHG emissions if the electricity derives from fossil fuels, but the products are not themselves *forcing* that. The focus here is on products that emit GHGs as a *direct consequence* of their use or end of life processing.

Fitness criteria

Companies whose products rely on energy *should* strive to maximise energy efficiency to minimize potential emissions (e.g. from the use of electricity). But a company *must* ensure that its products do not emit GHGs as an unavoidable consequence of use.[59]

Therefore, a product is 100% fit only if it does not force the user to emit GHGs. Examples of products that force customers to emit GHGs include:

- Combustible fuels (e.g. diesel, coal, end-of-life tires when sold as fuel).
- Equipment powered by combustion (e.g. cars, ships and trains containing internal combustion engines, kerosene lanterns, diesel-powered generators).
- Transport services whose provision causes GHG emissions (e.g. taxi rides, commercial flights and courier services that employ GHG-emitting vehicles).
- Manufactured products that contain GHGs which may be emitted during use (e.g. refrigerators and air conditioners which contain hydrofluorocarbons).

[59] Note that if a product contains GHGs sequestered from natural cycles, which it later emits in equal amount, then it does not contribute to the build of GHGs in the environment.

All types of GHGs emitted by company operations must be factored in: the seven major GHGs covered by the Kyoto Protocol, plus any other gas known to contribute to global GHG emissions.[60] If a product releases more than one type of GHG the company must convert and add up to a CO_2 equivalent figure.[61]

Key Fitness Indicator

To calculate fitness a company must take the following steps:

- Assess the fitness of a product.
- Assess fitness across all products.

Assessing the fitness of a product.

The company must assess each product as follows:

- A product is 100% fit only if it does not force the user to emit GHGs, otherwise:
- For each relevant product, the company must identify an appropriate reference level of emissions from which to measure progress toward elimination. The reference level should be calculated as follows:
    - For product types that are subject to GHG emission regulations (e.g. cars), the reference level should be the current regulatory threshold for each product category. If the company sells a product in multiple regions, the reference level should be chosen to match the most progressive regulatory requirement of those regions.[62]
    - If a product type is not subject to GHG emission regulations, the company may choose a reference year for which it possesses accurate emissions data for its products.
    - If no regulation exists and the company has no historic data, the first year of data collection should be used to create the reference value.
- Whichever approach is taken, once a reference level has been identified it is considered to represent a future-fit score of 0%.[63]

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[60] This includes GHGs regulated by The Montreal Protocol on Substances that Deplete the Ozone Layer.

[61] For example, by using combustion emission factors of fuel/feedstock or IPCC values on Global Warming Potential (GWP).

[62] As an example of GHG emission regulations, every EU car manufacturer is subject to a maximum average permitted gCO_2/km, based on the average mass of its fleet of new passenger cars registered in the EU. If a car manufacturer commits to becoming future-fit it should use this legal threshold as its reference level, even if changes in its fleet average mass later cause its legal obligation to fluctuate.

[63] If legislation is updated, the company should continue to use its original reference value. This ensures that the indicator focuses on changes in company activity, not changes in the external market.

The calculation can then be expressed as follows for any given product *p:*

- If product *p's* current emissions are higher than or equal to its reference level emissions, then *p's* future-fit score remains at 0%.
- If product *p's* current emissions are lower than its reference level emissions, *p's* future-fit score is calculated as the percentage reduction in product emissions from the reference level.

This can be expressed mathematically as:

$$f_p = \begin{cases} \frac{E_R}{E_O} & for\ \ E_R \geq 0 \\ 0 & for\ \ E_R < 0 \end{cases}$$

Where:

f_p	Is the future-fitness of product *p.*
E_O	Is the reference level of emissions for product *p.*
E_R	Is the **reduction** in emissions relative to the reference level for product *p* (i.e. reference level emissions minus current emissions).

Calculating fitness across all products.

The company's aggregated future-fit score can now be calculated as a revenue-weighted sum of the fitness of each product. This means that each product's fitness will be weighted according to how much it contributes to the company's overall revenue stream. This can be expressed mathematically as:

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{\sum_{p=1}^{P} R_p}$$

Where:

F^{Prod}	Is the company's cross-product fitness.
P	Is the total number of products in the company's portfolio.
f_p	Is the future-fitness of product *p.*
R_p	Is the revenue generated by product *p.*

Example

The company ACME Inc. sells lemonade products. It supplies both to large retail companies and small independent kiosks, which sell the lemonade on to consumers. As part of its strategy, ACME offers a cooler to its high-volume customers, and to date it has

provided 100 coolers to customers who contributed a total of $100,000 in revenue. This represents 20% of the company's total annual revenue of $500,000.

However, ACME discovers that the coolers use hydrofluorocarbons (HFCs) as a refrigerant, and HFC is a potent greenhouse gas with very high global warming potential. ACME finds out from the manufacturer that each cooler can emit an average of 1,000 CO_2e, and uses this as its reference value. It now calculates its fitness as:

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{\sum_{p=1}^{P} R_p} = \frac{100\% \times 400{,}000 + 0\% \times 100{,}000}{500{,}000} = 80\%$$

ACME then decides to switch to coolers that use CO_2 as a refrigerant, which can emit only an average of 100 CO_2e. This means that the fitness of the coolers is now:

$$f_p = \frac{E_R}{E_O} = \frac{1{,}000 - 100}{1{,}000} = 90\%$$

During the next reporting interval it provides a total of 150 coolers to customers who contribute a total of $150,000 in revenue, out of a total revenue of $500,000. It can now calculate cross-product fitness as:

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{\sum_{p=1}^{P} R_p} = \frac{100\% \times 350{,}000 + 90\% \times 150{,}000}{500{,}000} = 97\%$$

Definitions

Major greenhouse gases

The Kyoto Protocol covers the following seven major greenhouse gases: carbon dioxide (CO_2); methane (CH_4); hydrofluorocarbons (HFCs); nitrous oxide (N_2O); perfluorocarbons (PFCs); sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).

Useful links

The Greenhouse Gas Protocol

The Greenhouse Gas Protocol is a widely recognized accounting tool for quantifying greenhouse gas emissions. See Chapter 11 of their GHG protocol standard for useful guidance on calculating GHG emissions from the use of sold products.

Frequently asked questions

How does this relate to Greenhouse Gas (GHG) Protocol Scopes?

For further details of how the Benchmark goals and KFIs relate to the GHG Protocol see see Appendix 1.

Products can be repurposed

Goal description

The world's resources are dwindling. Renewable resources are consumed faster than they can regenerate, and as society's most accessible finite resources are used up, extraction methods become increasingly disruptive. Demand for virgin resources can be mitigated if all of the materials society uses are repurposed, rather than discarded as waste. Doing so also eliminates the costs – financial, environmental and human – that waste disposal incurs.

Future-fit companies do all they can to make sure that their products and associated packaging can be repurposed.[64] There are two aspects to this. First, companies should ensure that customers have ready access to recovery services, for all products and packaging that are not consumed during use. And second, products and packaging should be designed to ensure that – via such a recovery service – they can be readily disassembled into individual components/materials to maximize their reuse value.

Note that a company is not *itself* required to gather and repurpose all of its own products: it may choose to do so, or it may instead ensure that repurposing happens through other means, such as partnerships with third parties or established recycling programs.

Fitness criteria

This goal applies to all physical products sold by the company, and concerns the parts of each product (and any associated packaging) that remain after normal use.[65] Service products that do not involve the provision of any physical goods are considered *de facto* future-fit for the purposes of this goal.

Future-fitness depends on whether a product is designed to be disassembled into repurposable components after use, as well as whether recovery services are readily available to customers – in each location where the product is sold. A company must therefore assess fitness within each relevant location (which we refer to as a *market*). A company may traditionally think of a market as a country or even a region. However, the availability of repurposing services may vary within countries and possibly even from one

[64] A company *should* do what it can to maximize actual repurposing rates, in ways that maximize resource value. However, a company cannot completely control customer behavior. Even where repurposing is made easy and rewarded monetarily, a company may not see 100% of its products repurposed. Instead the focus here is on ensuring that a company is enabling – not hindering – the possibility that products are repurposed.

[65] The post-use composition of durable products, such as a car or a cell phone, will be the same as when it was new. But for many consumable products, such as foods or shampoos, the packaging might be all that remains.

store to another, so more fine-grained analysis may be required. For example, if a company sells a product in a country, and in only one city it is able to fully recover and repurpose the otherwise unrecoverable product (by providing its own take-back service), then repurposing fitness of the product should be assessed separately for the city and for the rest of the country.

Key Fitness Indicator

To calculate fitness a company must take the following steps:

- Assess the fitness of post-use product components within each market.
- Assess the fitness of a product within a market.
- Assess the fitness of a product across all markets.
- Assess fitness across all products.

Assessing the fitness of post-use product components within each market.

A product component *n* that is **derived from renewable natural resources** – and that has exhausted its reuse or recycling potential[66] – is fit for repurposing *in any market* if all of the following are true:

- It is biodegradable when subjected to sunlight, water and microbial activity, without the release of toxins harmful to soil or ecosystems.[67]
- It biodegrades within a reasonable timeframe.[68]
- It can be separated from other components by available recovery services or the user.

This can be expressed as follows: Fitness of component $n = f_n = 100\%$.

Any other component *n* in a product sold *in market m* is 100% fit for repurposing if all of the following are true:[69]

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[66] For example, paper may be biodegradable, but it should not be composted until its material value has been downgraded to such an extent that recycling is no longer possible.

[67] If the substance is not commonly known to be biodegradable, the company must provide proof of this ability.

[68] If decomposition requires a specialized environment, a biodegradable component is only considered fit if available recovery services can provide that environment (e.g. oxo-biodegradable plastics require oxygen to break down, so do not degrade in landfill). Note that the term "reasonable timeframe" might seem vague, but this is because requirements vary so much between substances. The term is widely used (without further definition) by a range of organisations who are experts in this area.

[69] Some customers will buy a product in one market, but use and dispose of it in another. Because companies do not have the information or sufficient ability to influence where customers use their

- It can be separated from other products components by available recovery services or by the user (if necessary for recovery).[70]
- The user has ready access to appropriate recovery services, as follows:
  - the product component is sold at a physical location (e.g. retail store) and a take-back service, which incentivizes users to return their post-use products (or the individual component), is available at the same location; or
  - the unit is delivered to the customer by post/courier (e.g. ordered via the Internet) and a mail-in service, which incentivizes users to return their post-use products (or individual component) is available.
- The provider of the recovery service can recover the component to be reused or recycled as a new product input (for the company or a third party) without the release of harmful substances.[71]

This can be expressed as follows: Fitness of component *n* in market $m = f_{n,m} = 100\%$.

Alternatively, a component *n* of a product sold in market *m* is X% fit for repurposing if all of the following are true:

- It can be separated from other components by available recovery services or by the user (if necessary for recovery).[72]
- The user has ready access to appropriate recovery services, as follows:
  - the component *is sold at* a physical location where the necessary waste management infrastructure required for recovery is available to X% of people; or
  - the component *is delivered to a customer in* a physical location where the necessary waste management infrastructure required for recovery is available to X% of people.
- The provider of the recovery service can recover the component to be reused or recycled as a new product input (for the company or a third party) without the release of harmful substances.[73]

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products versus where they buy them, for the purpose of this release we focus on market where products are sold – not where used.

[70] Disassembly by the user is only counted if it can be done without third party guidance or tools.

[71] Note that incineration of a component to extract its energy is *not* sufficient.

[72] Disassembly by the user is only counted if it can be done without third party guidance or tools.

[73] Note that incineration of a component to extract its energy is *not* sufficient.

The repurposing fitness X therefore represents the market-wide *recovery availability* for that type of product component – insofar as the available infrastructure is fully equipped to pick-up, dismantle, and recover it.[74]

This is expressed as follows: fitness of component *n* in market *m* = $f_{n,m} = X\%$.

Assessing the fitness of a product *p* in market *m*.

When at least one product component has been assessed and identified as fit for repurposing, the fitness of a product *p* in market *m* can be then calculated as follows:

- Calculate the fitness contribution of each component by multiplying its weight by its repurposing fitness.
- Add up the fitness contribution of every assessed component.
- Add up the weight of all product *p*'s components to get the total weight of product *p*.
- Calculate product *p*'s fitness in market *m* as the proportion of its weight that is fit for repurposing.

This can be expressed mathematically as:

$$f_{p,m} = \frac{\sum_{n=1}^{N} W_n \times f_{n,m}}{W_T}$$

Where:

$f_{p,m}$	Is the future-fitness of product *p* in market *m*.
$f_{n,m}$	Is the repurposing fitness of component *n* in market *m*.
N	Is the total number of product components of product *p*.
W_n	Is the weight of product component *n*.
W_T	Is the total weight of product *p*.

Assessing the fitness of a product *p* across all markets.

When the future-fitness of a product *p* has been calculated for at least one market, the company can start to calculate the overall repurposing fitness of that product. This is done by weighting the per-market scores for that product according to the units sold in each market. This can be expressed mathematically as:

$$f_p = \frac{\sum_{m=1}^{M} f_{p,m} \times U_{p,m}}{\sum_{m=1}^{M} U_{p,m}}$$

[74] For example, in a market where a company relies on an established recycling program that provides adequate recovery services for 60% of people, X will equal 60%.

Where:

f_p	Is the future-fitness of product *p* across all markets.
$f_{p,m}$	Is the future-fitness of product *p* in market *m*.
$U_{p,m}$	Is the total number of units of product *p* sold in market *m*.
M	Is the total number of markets in which product *p* are sold.

Assessing fitness across all products.

The company's aggregated future-fit score can now be calculated as a revenue-weighted sum of the fitness of each product. Thus each product's fitness will be weighted according to how much it contributes to the company's overall revenue. This can be expressed mathematically as:

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{\sum_{p=1}^{P} R_p}$$

Where:

F^{Prod}	Is the company's cross-product fitness.
f_p	Is the future-fitness of product *p*.
R_p	Is the total revenue generated by product *p*.
P	Is the total number of products in the company's portfolio.

Example

ACME Inc. sells lemonade products, which come in both glass bottles (with an aluminium lid) and in plastic bottles, in two markets (A and B). We will refer to the glass-bottled lemonade as product GL, and the plastic-bottled lemonade as product PL.

Both products are easily disassembled into their constituent parts – glass, aluminium and plastic. In both markets the glass bottles can be readily recovered through existing infrastructure, available to everyone. However, the aluminium lids are only currently recyclable in market B – and even then, recycling is only available to an average of 60% of people. The plastic bottles are not currently recyclable. The repurposing fitness of each component within each market can now be identified as follows:

$f_{Glass,A} = f_{Glass,B} = 100\%.$

$f_{Alu,A} = 0\%.$

$f_{Alu,B} = 60\%.$

$f_{Plastic,A} = f_{Plastic,B} = 0\%$

Since plastic is the only post-use component of plastic-bottles, product PL is 0% fit. But the company can calculate the fitness of product GL.

For every unit of GL, the glass weighs 50g, and the aluminium lid weighs 5g. In market A, the company sells 5,000 units of GL, and in market B it sells 1,000 units.

The fitness of product GL in each market can now be calculated thus:

$$f_{GL,A} = \frac{W_{Glass,A} \times f_{Glass,A} + W_{Alu,A} \times f_{Alu,A}}{W_{Glass,A} + W_{Alu,A}} = \frac{(50 \times 5{,}000) \times 100\% + (5 \times 5{,}000) \times 0\%}{(50 \times 5{,}000) + (5 \times 5{,}000)} \approx 91\%$$

$$f_{GL,B} = \frac{W_{Glass,B} \times f_{Glass,B} + W_{Alu,B} \times f_{Alu,B}}{W_{Glass,B} + W_{Alu,B}} = \frac{(50 \times 1{,}000) \times 100\% + (5 \times 1{,}000) \times 60\%}{(50 \times 1{,}000) + (5 \times 1{,}000)} \approx 96\%$$

The repurposing fitness of GL across all markets is then calculated as:

$$f_{GL} = \frac{f_{GL,A} \times U_{GL,A} + f_{GL,B} \times U_{GL,B}}{U_{GL,A} + U_{GL,B}} = \frac{91\% \times 5{,}000 + 96\% \times 1{,}000}{6{,}000} \approx 92\%$$

Product GL brings in a total of $300,000 and product PL brings in $200,000, across both markets A and B. The company's cross-product fitness can now be calculated as:

$$F^{Prod} = \frac{f_{GL} \times R_{GL} + f_{PL} \times R_{PL}}{R_{GL} + R_{PL}} = \frac{92\% \times 300{,}000 + 0\% \times 200{,}000}{500{,}000} \approx 55\%.$$

Useful links

The Ellen MacArthur foundation

The Ellen MacArthur foundation works with business, government and academia to build a framework for a Circular Economy – an economy that is restorative and regenerative by design. Recent work includes The Circularity Indicators Project, which presents companies with a methodology and tools to assess the circularity of a product.

Customers are informed about any aspect of products that may cause harm

Goal description

Some products may cause harm to people or ecosystems, either because of the way they are designed, or because there is a reasonable chance that customers could misuse them or dispose of them incorrectly. The company must make potential customers aware of any such risks, to empower them to make well-informed decisions regarding their purchase, use and end-of-life processing of its products.

Fitness criteria

A company is 100% fit only when customers are adequately informed about all aspects of its products that may cause harm.

Products may cause harm in a wide variety of ways. Some examples include:

- Foods and beverages that affect a person's health if consumed in excessive amounts.
- Substances that may be considered harmless individually, but which could cause harm when mixed with other substances.
- Products that contain known carcinogens or endocrine disrupters.[75]
- Vehicles powered by fossil fuels, which emit greenhouse gases and other pollutants when used.
- Consumables containing non-biodegradable particles (e.g. plastic micro-beads in shampoo), whose emission into rivers and oceans, via wastewater, harms organisms.
- Products that may emit harmful substances when disposed of incorrectly (e.g. batteries, thermometers and electronics).
- Recyclable products that end up in landfill – or non-recyclable products that contaminate recycling waste streams – due to unclear recycling instructions.
- Heavy machinery, whose use may cause physical harm without adequate instruction.
- Complex financial products, whose use may undermine a customer's livelihood if their associated risks are not properly understood.

[75] Note that while a company is credited here for informing its customers of the presence of harmful substances in its products, those same products will decrease the company's score on the goal Products do not harm people or the environment.

Identifying requirements according to product type.

Different types of product require the disclosure of different types of information.

For all types of product, it is required that:

- The company adheres to the most progressive regulatory requirements across all regions in which a product is sold. That is, if advertising and/or labelling in one market is subject to stricter disclosure criteria than in other markets, the company should implement the more stringent standards in all its markets.
- Any harmful impacts that could reasonably be expected to arise from the actions of an uninformed customer – including those not covered by legislation – are disclosed in a form that is readily accessible to customers, prominently placed and easy to understand.

In addition, for physical products, it is required that:

- The company provides all information necessary for customers to repurpose products, so as to maximize their utility at the end of their life, including recycling instructions.
- If improper disposal of a product could cause harm (e.g. through the emission of toxic substances), this is made clear.

In addition, for foods and beverages, it is required that:

- The company provides clear and simple nutritional guidance[76] together with healthy consumption recommendations (e.g. safe alcohol limits).
- The company provides clear and accurate 'consume by date' guidance to reduce unnecessary waste.

In addition, for products that emit greenhouse gases, it is required that:

- The company discloses the typical amount of greenhouse gases emitted as result of product use, in whichever units are most appropriate (e.g. per journey, or over a typical year of use).

In addition, for products that consume energy, water or other resources, it is required that:

- The company provides clear and simple guidance on the resource demands of the product, (e.g. energy efficiency ratings for a washing machine) and on how to minimize resource use (e.g. recommended washing temperatures).

In addition, for products that may contain harmful substances, it is required that:

- The company identifies all substances in the product which could cause harm,[77] and makes clear what the effects of those substances may be, and how to avoid them.

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[76] For example, a 'traffic light system' has long been advocated by many consumer groups as a way to more effectively inform consumers than existing guidance regarding recommended daily amounts.

[77] See the Products do not harm people or the environment goal for guidance.

Key Fitness Indicator

To calculate fitness a company must take the following steps:

- Assess the fitness of a product within a market.
- Assess the fitness of a product across all markets.
- Assess fitness across all products.

Assessing the fitness of a product within a market.

For each product, and in each market[78] in which that product is sold, the company must assess whether customers can make informed decisions regarding its purchase, use and end-of-life processing.

- Product *p* is considered to be 100% fit in a market if all required information is disclosed on the product, on its packaging, or – if neither of these is technically feasible – in another readily accessible form at the point(s) of purchase/use.
- Otherwise the product is considered to be 0% fit in that market.

This is expressed as follows: Fitness of product *p* in market $m = f_{p,m} = \mathrm{X}\%$, where X= {0,100}.

Assessing the fitness of a product across all markets.

Product *p*'s future-fit score can now be calculated as a revenue-weighted sum of its fitness across all markets. Thus the fitness of the product in a given market will be weighted according to how much that market contributes to the company's overall revenue. This can be expressed mathematically as:

$$f_p = \frac{\sum_{m=1}^{M} f_{p,m} \times R_{p,m}}{R_p}$$

Where:

$f_{p,m}$	Is the future-fitness of product *p* in market *m*.
M	Is the total number of markets where product *p* is sold.
$f_{p,m}$	Is the future-fitness of product *p* in market *m*.
$R_{p,m}$	Is the total revenue generated by product *p* in market *m*.
R_p	Is the total revenue generated by product *p*.

[78] Note that products are often sold with different packaging, advertising and labelling in different markets, which is why fitness criteria for this goal must be checked on a market-by-market basis.

Calculate fitness across all products.

The company's aggregated future-fit score can now be calculated as a revenue-weighted sum of the fitness of each product. Thus each product's fitness will be weighted according to how much it contributes to the company's overall revenue. This can be expressed mathematically as:

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{R_T}$$

Where:

F^{Prod}	Is the company's cross-product fitness.
P	Is the total number of products in the company's portfolio.
f_p	Is the future-fitness of product *p*.
R_p	Is the total revenue generated by product *p*.
R_T	Is the total revenue generated across all products.

Example

ACME Inc. sells lemonade in both glass bottles (with an aluminium lid) and in plastic bottles in two markets (A and B). We refer to these products as GL and PL respectively. Labels on each type of bottle provide clear nutritional guidance, as well as recycling instructions for both glass and plastic. However, the aluminium lid is not recyclable in market A, and ACME does not make this clear. Thus:

$$f_{Glass,A} = 0\%.$$

$$f_{Glass,B} = f_{Plastic,A} = f_{Plastic,B} = 100\%.$$

Product PL is therefore 100% fit with respect to this goal across all markets.

ACME sells $100,000 worth of GL in market A and $200,000 in market B (out of a total revenue of $500,000 – with the remainder coming from product PL). ACME can now calculate the fitness of its glass-bottled lemonade GL as:

$$f_{GL} = \frac{f_{GL,A} \times R_{GL,A} + f_{GL,B} \times R_{GL,B}}{R_{GL}} = \frac{0\% \times 100{,}000 + 100\% \times 200{,}000}{100{,}000 + 200{,}000} \approx 67\%$$

And its cross-product future-fitness is then:

$$F^{Prod} = \frac{f_{GL} \times R_{GL} + f_{PL} \times R_{PL}}{R_{GL} + R_{PL}} = \frac{67\% \times 300{,}000 + 100\% \times 200{,}000}{500{,}000} = 80\%$$

Customer concerns are actively solicited, impartially judged and transparently addressed

Goal description

It makes sense for any company to actively engage its customers, but the intent here is to ensure that a company does at least the minimum required in this regard. That is, a company must give its customers a voice by actively soliciting their views, impartially investigating their concerns, and transparently acting to address legitimate grievances.

Note that – in contrast to the similarly-worded goals relating to employees and communities – this goal does not encompass every type of concern that a customer may raise. The emphasis here is on concerns relating to the future-fit credentials of the company's products, such as whether a product may cause harm as a result of its use or disposal.

This goal encompasses concerns raised on behalf of individual customers, for example by NGOs and consumer groups. Transparency is key here. For example, if a product fault is identified which could jeopardize the health of other customers, the company should act swiftly and openly to address it.

Fitness criteria

A future-fit company is not one whose customers are concern-free, but rather one that has taken all steps possible to minimize concerns about the future-fit credentials of its products – and who deal effectively and appropriately with any concerns that arise. Examples include:

- A scientific study reveals that a substance commonly used in pesticides is extremely harmful to other species critical to ecosystem health. A chemical company producing such pesticides should proactively seek to address this concern, for all products affected.
- Several associations of industry experts make a strong argument for supporting one nutritional labelling scheme over another for a certain type of food. A company in that business should examine the recommendations and respond accordingly.
- Several accidents suggest that a particular model of car has a potentially fatal defect in some driving conditions. The carmaker in question should proactively announce the nature of the fault and what it is doing to address it.

- Credible studies find a clear link between obesity epidemics amongst children and the intake of a certain type of processed food. Manufacturers and retailers of the food in question should review their marketing strategies and product labelling, and if necessary take steps to reformulate their products.

Identifying requirements.

A company must implement policies and processes to meet all of the following criteria, across all markets in which it is active.

Actively solicit concerns:

- Set up a formal process for managing customer concerns about products.
- Actively communicate to customers on the existence and use of this process.
- Monitor and regularly assess the performance of this process.

Impartially judge concerns:

- Ensure that product concerns are investigated as quickly as possible, by individuals whose positions and incentives are not influenced by an investigation's outcomes.
- Keep the customer(s) who raised the concerns fully informed throughout the process.

Transparently address concerns:

- If a concern is addressed directly to the company, or to the industry in which it operates, the company publicly acknowledges the concern, and explains how it plans to investigate it.
- If a concern is found to be legitimate, the company acknowledges this publicly and describes what corrective action is being taken as a result.
- If a concern is found to be legitimate, and may affect performance against other Future-Fit Goals, then their respective KFIs are recalculated (and, if previously published, then *re*-published) as soon as possible.[79]
- If a concern is found to require no corrective action, the company provides credible and independent evidence to that effect.

Key Fitness Indicator

To calculate fitness a company must take the following steps:

- Assess the fitness of a product within a market.
- Assess the fitness of a product across all markets.

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[79]For example, if experts provide evidence that a chemical used in a product is harmful, KFIs for the goals Products do not harm people or the environment and Customers are informed about any aspect of products that may cause harm will likely need to be recalculated.

- Assess fitness across all products.

Assessing the fitness of a product within a market.

For each product, and in each market[80] in which that product is sold, the company must assess whether customer concerns are actively solicited, impartially judged and transparently addressed.

- A product is considered to be 100% fit in a market if all fitness criteria are met – and if all customer concerns have been adequately addressed.
- Otherwise the product is considered to be 0% fit in that market.

This is expressed as follows: Fitness of product *p* in market $m = f_{p,m} = \mathrm{X}\%$, where X= {0,100}.

Assessing the fitness of a product across all markets.

Product *p*'s future-fit score can now be calculated as a revenue-weighted sum of its fitness across all markets. Thus the fitness of the product in a given market will be weighted according to how much that market contributes to the company's overall revenue. This can be expressed mathematically as:

$$f_p = \frac{\sum_{m=1}^{M} f_{p,m} \times R_{p,m}}{R_p}$$

Where:

f_p	Is the future-fitness of product *p*.
M	Is the total number of markets where product *p* is sold.
$f_{p,m}$	Is the future-fitness of product *p* in market *m*.
$R_{p,m}$	Is the total revenue generated by product *p* in market *m*.
R_p	Is the total revenue generated by product *p*.

Assessing aggregate fitness across all products

The company's aggregated future-fit score can now be calculated as a revenue-weighted sum of the fitness of each product. Thus each product's fitness will be weighted according to how much it contributes to the company's overall revenue. This can be expressed mathematically as:

[80] Note that products are often produced, sold and supported under different conditions in different markets, so fitness criteria for this goal must be checked on a market-by-market basis.

$$F^{Prod} = \frac{\sum_{p=1}^{P} f_p \times R_p}{R_T}$$

Where:

F^{Prod}	Is the company's cross-product fitness.
P	Is the total number of products in the company's portfolio.
f_p	Is the future-fitness of product *p*.
R_p	Is the total revenue generated by product *p*.
R_T	Is the total revenue generated across all products.

Example

ACME Inc. sells lemonade products in two markets (A and B). The company has set up a well-functioning formal process for managing customer concerns and a wide body of research now firmly establishes the link between childhood obesity and the intake of beverages with a high sugar content. The company acknowledges that it has a responsibility to address this issue and therefore commits to stop marketing its sugared lemonades (referred to below as SL) directly to children in market A. The children's segment in market B however, is highly profitable, and the company decides not to change its marketing strategy there. It can now calculate its product fitness in each market as:

$$f_{SL,A} = 100\%.$$

$$f_{SL,B} = 0\%.$$

Each market brings in $200,000 in annual revenue. ACME can now calculate the the fitness of its sugared lemonade as:

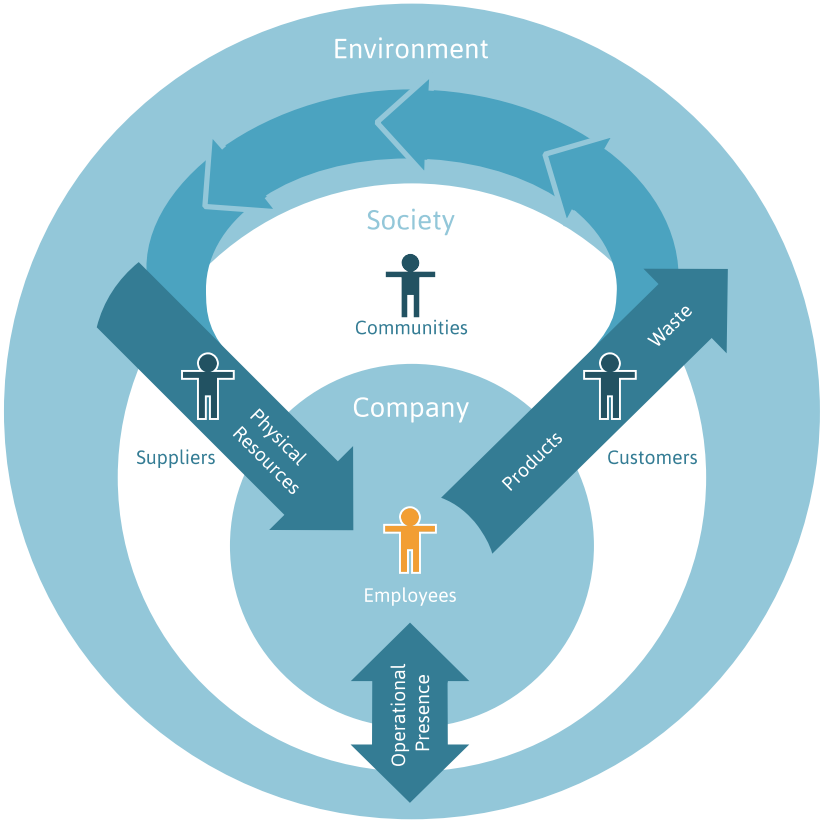
$$f_{SL} = \frac{f_{SL,A} \times R_{SL,A} + f_{SL,B} \times R_B}{R_{SL,A} + R_{SL,B}} = \frac{100\% \times 200{,}000 + 0\% \times 200{,}000}{200{,}000 + 200{,}000} = 50\%$$

The company also sells $100,000 worth of sugar-free lemonade (FL), which it has deliberately chosen not to market to children. FL is therefore considered to be 100% fit, and the company's cross-product fitness can be calculated as follows:

$$F^{Prod} = \frac{f_{SL} \times R_{SL} + f_{FL} \times R_{FL}}{R_{SL} + R_{FL}} = \frac{50\% \times 400{,}000 + 100\% \times 100{,}000}{500{,}000} = 60\%$$

Employees

Companies are responsible for providing a safe and healthy work environment, and for empowering all employees to behave responsibly. Ensuring tolerable working conditions is now a legal requirement in many countries, but the emphasis often doesn't go far beyond physical safety. Future-fit companies and their core suppliers embrace a broader definition of wellbeing, which also encompasses fair compensation and impartial treatment.



Future-fit goals.

Each goal below has an Internal Operations KFI, and – to assess supply chain impacts for which the company is mutually accountable – a Supply Chain KFI.

- Employee health is safeguarded
- Employees are paid at least a living wage
- Employees are subject to fair employment terms
- Employees are not subject to discrimination
- Employee concerns are actively solicited, impartially judged and transparently addressed

Employee health is safeguarded

Goal description

This goal is about protecting the health and safety of all employees. Companies that do not adequately address workplace health issues may cause serious long-term negative health problems for their employees. Note that "health" here extends beyond physical safety to encompass mental and emotional wellness, so companies must not contribute in any way to stress-related health issues.

Work-related injuries, illnesses, and fatalities should reach and remain at zero. Companies should also seek to foster physical health (e.g. through proactive positions on exercise, nutrition and smoking) and mental wellbeing (e.g. zero tolerance of bullying and harassment).

Fitness criteria

A future-fit company is responsible for ensuring the physical safety of its employees, as well as for providing a work environment conducive to their mental and physical wellbeing. When it comes to physical safety, the situation is simple: the company must ensure that preventable accidents and fatalities at work reach and remain at zero. For other aspects of employee health, assessing performance is not always as clear-cut, because there are limits to what the company can control.

Consider stress for example: a lot can be done to reduce the risk of employee stress, but stress *at* work may result from factors *outside* work. So it makes sense to judge a company's performance in this regard in terms of stress management, rather than, say, by attempting to count stressed employees.

The general approach is to assess the percentage of employees who work in locations where comprehensive policies, programs and systems are in place to foster their health, as well as the extent to which certain outcome thresholds (e.g. zero preventable accidents) are maintained.

Employee health requirements.

The World Health Organization (WHO) and other leading workplace wellbeing standards emphasize the need for a comprehensive health program to consistently assess, monitor and foster the wellbeing of its employees. To be effective, such a health program requires:

- **Executive commitment**: Executives and all levels of management are responsible for implementing employee health policies.
- **Employee engagement**: Employees or their representatives are actively involved in constructing the health program, and are consulted (e.g. through surveys) to solicit ongoing feedback and gauge satisfaction.

- **Planning**: Processes are in place for measuring, auditing and reviewing performance to identify any shortfalls and implement necessary corrective and preventative actions.
- **Implementation and operation**: There is a clear line of authority and accountability and appropriate resources are available.
- **Improvement**: Performance is monitored to ensure policy objectives and targets are met, audits are carried out by competent internal and/or external personnel, and action is taken to ensure any problems are corrected and prevented in the future.
- **Communication**: Policies must be effectively communicated, and employees must be provided with all information necessary to maximize their effectiveness.

To be future-fit, a company's health program must meet these requirements, and encompass all of the following criteria:

Workplace health and safety: [81]

- Hazards are identified, assessed, eliminated or controlled to the full extent possible:
  - Chemical, biological and physical hazards are eliminated.[82]
  - Ergonomic, mechanical, energy and mobile hazards are minimized and controlled.[83]
- A risk assessment and mitigation program has been implemented, and all staff are informed of the workplace risks that affect them and the controls in place.
- All health and safety policies and workplace activities are regularly monitored for new hazards, and improvements are made accordingly.
- There are zero preventable, work-related injuries and fatalities.[84]

Mental wellbeing:

- There is zero tolerance of bullying and harassment.
- Support is available to help employees deal effectively with work-life conflicts, including flexibility in timing and location of work where possible.[85]

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[81] The workplace extends to any company owned or controlled facilities.

[82] Examples of chemical hazards include solvents, asbestos and pesticides. Examples of physical hazards include noise, excessive heat and air pollution. Examples of biological hazards include mould and lack of clean water and hygiene facilities.

[83] Examples of ergonomic hazards include awkward postures, heavy lifting and overly-repetitive physical actions. Mechanical hazards include risks from operating machinery, energy hazards include risks from exposure to electricity, and mobile hazards include (for example) employees driving in dangerous conditions, or employees falling from heights.

[84] For work-related injury and fatality definitions see for example the UK government's HSE criteria.

[85] Flexible work schedules should not affect other benefits (e.g. health care provision, parental leave).

- Clear guidance is offered on how to handle the primary sources of stress at work, such as workload demands, lack of control / empowerment, lack of support from colleagues and inadequate resources, conflict relationships, unclear roles, and change fatigue.

Physical activity:

- Employees are required to take regular breaks.
- Timing and length of work breaks is flexible to facilitate exercise.

Nutrition:

- All employees have access to healthy and varied food options. This includes:
  - The availability of healthy eating and snacking options on site or – in locations without catering facilities – within easy reach.
  - The availability of healthy eating and snacking options at off-site company events.

Smoking:

- All work environments are smoke free.
- All communal areas, both inside and outside, are smoke free.[86]

Employee support:

- Employees whose ability to work is affected by a work-related heath issue or accident are adequately supported and where necessary compensated.

Key Fitness Indicator – Internal Operations

The Internal Operations KFI can be calculated as follows:

- Add up the number of employees that work at a site with a health program that meets the specified fitness criteria.
- Add up the total number of employees in the company's internal operations.
- Calculate fitness as the percentage of employees who work at sites with a health program that meets the specified fitness criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_H}{E_T}$$

[86] It is considered acceptable for the company to provide designated smoking areas, as long as all smoke is fully contained.

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_H	Is the number of employees in the company's internal operations who work at a site with a health program that meets the specified fitness criteria.
E_T	Is the total number of employees in the company's internal operations.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company has a total of 250 employees: 50 working in the office and the other 200 at the bottling plant. The company has a comprehensive and effective health program in place for the bottling plant, since safety has long been a top concern. However, it has not put in place a health program at the office site. The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_H}{E_T} = \frac{200}{250} = 80\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has a health program which fulfils all criteria then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the employee footprint**: An initial estimate of the number of people that is needed for the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- The identification of a supplier contributing to the production of the product input – and for that supplier:
  - Its **employee contribution**: The number of people employed by that supplier who are involved in the production of the product input (i.e. what it contributes to the total footprint).
  - Its **fitness contribution:** The number of that supplier's employees who are covered by comprehensive health programs that live up to required criteria.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Health

In accordance with the World Health Organization[87] (WHO):

***Health** is a state of complete physical, mental and social well-being, and not merely the absence of disease.*

Useful links

UK government's Health and Safety Executive (HSE)

HSE provides a list of criteria as to what constitutes a reportable work-related fatality or injury.

Health@Work

Health@Work is a UK charity which has created the The Workplace Wellbeing Charter, a standard with both online and formal assessment options. This guidance has been factored into our definition of a future-fit health program.

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[87] "Healthy workplaces: a model for action" World Health Organization (WHO), 2010, p. 6.

World Health Organization (WHO)

In 2010 the WHO published Healthy workplaces: a model for action, a framework to assist companies in creating a healthy work environment. This guidance has been factored into our definition of a future-fit health program.

Frequently asked questions

Should companies be penalized more for serious injuries or fatalities?

The KFI assigns a score of zero to any site that suffers a preventable fatality or injury, even if all other criteria are met at that site. Depending on the company structure and the number of employees at a site where any accident occurs, this may seriously impact the company's aggregate score.

It might be argued that if any preventable fatality or injury occurs, a company's score as a whole should be severely reduced. But while this idea may feel intuitively right, it raises difficult questions. For example, what level of penalty is appropriate? Should a fatality count more than an injury, and if so by how much? Should a single incident resulting in one hundred casualties be treated the same as a hundred separate incidents, each of which results in one casualty? Answers to such questions seem arbitrary, because they demand that some kind of number be placed on the value of a human life. For this reason, we have elected not to incorporate an additional method of penalization into this first KFI release.

Employees are paid at least a living wage

Goal description

Companies should safeguard employee health by ensuring all employees have the means to afford health coverage, to eat a balanced diet and to be free of concerns about meeting basic needs. Also, employees should be compensated such that they have the physical and mental means to pursue personal development outside of work.

A living wage affords a decent standard of living for the worker and his or her family. Living wage estimates vary by region and guidance is offered by government agencies, academics and/or NGOs. It is typically higher than the minimum wage or poverty-line wage.

Fitness criteria

Future-fitness is assessed on a per-employee basis. A company must pay all of its employees at least a living wage, which requires the company to identify location-specific living wage thresholds.

Determining location-specific living wage thresholds.

There are several approaches a company may take to determine living wage thresholds:

- Undertake its own calculations. In this case a company should follow the methodology recommended by the Global Living Wage Coalition.
- Use existing, up-to-date estimates from credible third parties. Methodologies vary, and using estimates from multiple sources across different regions is acceptable, as it may be impossible to obtain all required data from a single source.[88]
- Partner with or commission a credible third party to undertake the calculations.
- A mix of the above.

The company should clearly describe and explain whichever method(s) are used and why.

Assessing employee wages.

When determining whether a living wage is being paid it is necessary to understand how employees are compensated. In accordance with the Global Living Wage Coalition methodology, a company should *exclude* the following:

[88] The Global Living Wage Coalition publishes a small but expanding set of regional estimates.

- Overtime pay, because a living wage must be earned in standard working hours.
- Productivity bonuses and allowances, unless they are guaranteed.

Key Fitness Indicator – Internal Operations

Once the company has begun the assessment of employee wages, the Internal Operations KFI can be calculated as follows:

- Add up the number of employees being paid at least a living wage.
- Add up the total number of employees in the company's internal operations.
- Calculate fitness as the percentage of employees that are paid at least a living wage.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_L}{E_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_L	Is the number of employees in the company's internal operations who receive at least a living wage.
E_T	Is the total number of employees in the company's internal operations.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company has a total of 250 employees: 50 working in the office and the other 200 at the bottling plant. A credible living wage estimate exists for the city in which the office is located, and following an assessment the company finds that 5 junior hires are paid less than the living wage estimate. It has not yet assessed wages at the factory. The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_L}{E_T} = \frac{45}{250} = 18\%$$

ACME now collaborates with a credible third party to calculate living wage values for its bottling location. Based on this estimate it finds that 150 people are paid less than a living wage. It can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_L}{E_T} = \frac{45 + 100}{250} = 58\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If all employees at that site is paid at least a living wage then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the employee footprint**: An initial estimate of the number of people needed for the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:
    - Its **employee contribution**: The number of people employed by that supplier who are involved in the production of the product input (i.e. what it contributes to the total footprint).
    - Its **fitness contribution:** The number of employees who are paid at least a living wage by that supplier.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Definitions

Living Wage

We use the definition proposed by the Global Living Wage Coalition:

*A **living wage** constitutes a level of remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.*

Useful links

The Global Living Wage Coalition

The Global Living Wage Coalition is a collaboration between a number of organizations, including Fairtrade International, the Forest Stewardship Council and others. Working within the ISEAL Alliance, these organizations have created a standardized methodology for calculating a living wage.

The Living Wage Foundation

The Living Wage Foundation has calculated UK-wide and London-specific living wage estimates, and offers accreditation to companies who meet their criteria.

Employees are subject to fair employment terms

Goal description

Employees who work reasonable hours, who feel secure in their employment, and who are afforded adequate time off are more likely to thrive physically, emotionally, and mentally – in and outside work.

Fair employment terms are about respecting an employee's rights, needs, and wellbeing within and beyond work. Such terms include right of association (e.g. the right to join – or refrain from joining – a union), right to reasonable working hours, right to leisure (e.g. holiday entitlements and overtime pay) and right to parental leave.

Note that fair compensation is covered separately by the goal Employees are paid at least a living wage.

Fitness criteria

The general approach is to assess whether employees are subject to fair employment terms – as set out in a written contract.

What 'fair' means, and the way fairness is enshrined legally, can vary significantly across countries. The intent here is to assess the *minimum* that a company must do so as not to undermine the wellbeing of its employees. This follows the guidance of the International Labour Organization on rights at work.

Employment terms requirements.

Future-fitness is assessed on a per-employee basis.

The company is not future-fit with respect to any employee who is under age.[89] For every other employee, the company is future-fit if – regardless of their length and type of employment – they have a formal written contract that incorporates *all* of the following criteria:

Equitable treatment:

- Part-time workers receive protection, basic wages and employment conditions equivalent to those accorded to comparable full-time workers.[90]

[89] Companies should fully adhere to the UN International Convention No. 138 on minimum age.

[90] In accordance with ILO Part-time work convention, 1994 (No.175)

Freedom of association:

- The right of the employee to form and join trade unions of their choice (or to choose *not* to), and the right to bargain collectively, is established.

Fair working hours:

- The company must comply with national labour laws or widely adopted standards, with the following minimum conditions:
  - The employee should not be contractually obliged to work more than an average of 40 hours[91] per week, though they may choose to do so.
  - The employee has the right to annual paid leave of at least three working weeks for one year of service, during which they receive at least their normal or average remuneration for the corresponding period. People in their first year of employment are entitled to holiday with pay, proportional to their length of service during that year.[92]
  - The employee has the right to be compensated for overtime at a rate that is higher than their regular hourly wage.
  - The employee has the right to at least one day off for every six consecutive days worked.

Parental leave:

- The company must comply with national labour laws or widely adopted standards, but as a minimum the employee, whether male or female, has the right to a minimum of 14 weeks of paid parental leave.[93]

In some developing regions, legal restrictions may prevent the company from complying with all of the above criteria, or – for socio-economic reasons – enforcing some criteria may not be in the best interests of employees. Conversely, in some developed markets more stringent conditions might apply (e.g. in some countries it is necessary to provide employees with more paid holiday than the minimum specified here). In such cases, the company may apply a modified set of criteria if it can justify the change.[94]

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[91] The 40-hour work week is generally considered standard, though some countries have adopted alternatives.

[92] This conforms to the most recent ILO Convention in the area of paid leave, the Holidays with Pay Convention (Revised), 1970 (No. 132). A minimum period of service not exceeding six months may be required for entitlement to any annual holiday with pay. Public and customary holidays are not counted as part of the three-week minimum.

[93] The employee has the right to be paid no less than two thirds of previous earnings. This is in line with the ILO's Maternity Protection Convention, which has here been expanded to cover both sexes.

[94] See, for example the Global Social Compliance Programme (GSCP) Reference Code or the Ethical Trade Initiative's Base code as an alternative source of guidance for working hours.

Key Fitness Indicator – Internal Operations

The Internal Operations KFI can be calculated as follows:

- Add up the number of employees whose terms of employment meet required criteria.
- Add up the total number of employees in the company's internal operations.
- Calculate fitness as the percentage of employees whose terms of employment meet required criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_C}{E_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_C	Is the number of employees in the company's internal operations whose terms of employment meet all required criteria.
E_T	Is the total number of employees in the company's internal operations.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company has a total of 250 employees: 50 working in the office and the other 200 at the bottling plant. The company assesses its employment terms policies for the office and finds that all female employee contracts live up to the required criteria. However, it does not offer any paid parental leave for the 20 male employees. It further finds that only the senior management at the bottling plant (a total of 20 people) have contracts which live up to all criteria. The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_C}{E_T} = \frac{30 + 20}{250} = 20\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If all employees at that site have employment terms that live up to stated criteria then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the employee footprint**: An initial estimate of the number of people that is needed for the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:
    - Its **employee contribution**: The number of people employed by that supplier who are involved in the production of the product input (i.e. what it contributes to the total footprint).
    - Its **fitness contribution:** The number of that supplier's employees who have employment terms that live up to stated criteria.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Useful links

Ethical Trade Initiative (ETI)

The ETI is a leading alliance of companies, trade unions and NGOs, working to promote the rights of workers across the world. The ETI's Base Code offers useful guidance.

International Labour Organization (ILO)

The ILO has several conventions that address labour standards and what constitutes decent employment terms.

The Global Social Compliance Programme (GSCP)

The Global Social Compliance Program is a business-driven program for the continuous improvement of working and environmental conditions in global supply chains. GSCP's Reference Code provide a common base of high-level labour requirements applicable across sectors and geographies, for companies to use as a basis to develop their own supplier codes of conduct.

Frequently asked questions

Why don't the future-fit employment terms cover "issue X"?

A number of issues that are arguably very important are not covered here: for example, the fairness of zero hour contracts, and the extent to which a company should provide paid sick leave. There is no consensus on what the 'right' approach should be for these issues, but future releases may revisit this when expert guidance is clearer.

Employees are not subject to discrimination

Goal description

Everyone is entitled to equitable treatment and equal opportunity, irrespective of personal characteristics such as age, gender, sexual orientation, ethnicity, country of origin, or disability.

Discrimination in the workplace may take many forms, and discriminatory behaviour can be perpetuated – or at least go unnoticed and unchallenged – by established norms and practices within organisations.

Companies must be proactive in investigating and monitoring key practices – such as recruitment, pay structures, hiring, performance assessment and promotions – to ensure that no discrimination occurs, however indirect or unintentional it may be.

The goal Employee concerns are actively solicited, impartially judged and transparently addressed seeks to ensure that employees are empowered to raise concerns – including any related to discrimination – should they arise. This goal is about reducing the possibility that such concerns arise in the first place.

Fitness criteria

It is extremely difficult to identify – and thus quantify – incidents and patterns of discrimination. Hence the approach here focuses on whether comprehensive policies, programs and systems are in place that aim to prevent discrimination from ever taking place. This follows the guidance of the UN Global Compact and The International Labour Organization.

Determining requirements.

Future-fitness is assessed on a per-employee basis. For a company to be future-fit, all employees must work at locations where the following criteria are met:

Adoption of a non-discrimination policy:

- A policy is in place with the stated commitment to eliminate discrimination and foster diversity by establishing employee qualifications, skill, performance and experience as the basis for all decisions relating to recruitment, training, compensation and promotion.
- A senior company official is appointed to be responsible for discrimination and equity issues.

Monitoring and assessment:

- Priority categories, such as gender and ethnicity, are identified.
- Key statistics for each category (e.g. average pay gap by grade, representation of board and senior management, and overall workforce composition) are calculated, and records by category are kept on recruitment, training and promotion decisions.
- Key statistics and decisions are monitored annually across categories, and – if discrepancies are found – steps are taken to determine if discrimination may be the cause (e.g. compare data across company locations, and against industry average demographics).
- Whenever discrimination gaps are detected, targets and timeframes are set to close them.

Key Fitness Indicator – Internal Operations

The Internal Operations KFI can be calculated as follows:

- Identify the number of employees that work at a site with a non-discrimination program that meets the specified fitness criteria.
- Identify the total number of employees in the company's internal operations.
- Calculate fitness as the percentage of employees who work at a site with a non-discrimination program that meets the specified fitness criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_D}{E_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_D	Is the number of employees in the company's internal operations who work at a site with a non-discrimination program that meets the fitness criteria.
E_T	Is the total number of employees in the company's internal operations.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company has a total of 250 employees: 50 working in the office and the other 200 at the bottling plant. The company does not have non-discrimination programs in place at either location, so its fitness starts off at 0%.

It then finds that discrimination is a significant issue for its bottling plant, and it therefore acts to put in place the necessary policies and processes to address it. The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{E_D}{E_T} = \frac{200}{250} = 80\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has a non-discrimination program which fulfils all criteria then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the employee footprint**: An initial estimate of the number of people that is needed for the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:

- Its **employee contribution**: The number of people employed by that supplier who are involved in the production of the product input (i.e. what it contributes to the total footprint).
- Its **fitness contribution:** The number of that supplier's employees who are covered by non-discrimination programs that live up to required criteria.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Useful links

International Labour Organization (ILO)

The ILO has several conventions that address discrimination and equal remuneration. It further offers guidance as to what constitutes good company policies on equal employment practices.

UN Global Compact

One of the UN Global Compact's Ten Principles, is that *Businesses should uphold the elimination of discrimination in respect of employment and occupation*, and guidance is offered regarding specific actions a company can take to adhere to this criteria.

Employee concerns are actively solicited, impartially judged and transparently addressed

Goal description

Companies depend on the commitment and motivation of their employees, so it is good business sense to engage them as much as possible.

That said, the intent here – as with other future-fit goals – is to set a minimum threshold of acceptable performance, which in this case means ensuring that the company does nothing to undermine its employees' wellbeing.

A future-fit company is not one whose employees are concern-free, but rather one that has taken all steps possible to minimize concerns, and to deal effectively and appropriately with any concerns that arise. Thus the emphasis here is on putting in place appropriate mechanisms to identify and manage employee concerns, so that potentially serious issues and legitimate grievances do not go unaddressed.

Fitness criteria

In order to actively solicit, impartially judge and transparently address employee concerns, all employees must have access to a well-functioning concerns mechanism, that enables employees to raise general concerns and to raise the alert if witnessing unethical practices.

Determining requirements for managing employee concerns.

Drawing on the guidance embodied in the UN Principles on Business and Human Rights, and that of two other organizations working in this area, the following criteria are deemed sufficient for future-fitness:

Ensure legitimacy:

- Employees or employee representatives are actively involved in the design of the concerns mechanism.
- The concerns mechanism accommodates all conceivable types of employee grievance, and offers the means to report breaches in ethical standards.

Ensure accessibility:

- Information on the existence and use of the concerns mechanism is actively communicated to all employees.

- The concerns mechanism is designed to ensure employee confidentiality and protect employees from reprisals.

Reduce uncertainty:

- At both corporate level and on a per-site basis, a team or individual is assigned responsibility for facilitating development and implementation of the concerns mechanism.

Ensure fairness:

- Where necessary, employees are provided with access to neutral/independent advice and expertise.

Ensure transparency:

- Employees who use the concerns mechanism are fully informed throughout the process.

Ensure positive outcomes:

- All concerns are resolved in a timely manner and without negatively impacting the health of the employee, other people or the environment.

Engage actively:

- Employees and established groups that represent their interests are proactively consulted on issues of potential concern – and ahead of any change in company activity – that could impact employee wellbeing.

Improve continuously:

- Anyone who uses the concerns mechanism is asked for feedback on how to improve it.
- The performance of the concerns mechanism is monitored and regularly assessed.

Key Fitness Indicator – Internal Operations

The Internal Operations KFI can be calculated as follows:

- Identify the number of employees that work at a site with a concerns mechanism that lives up to stated criteria.
- Identify the total number of employees in the company's internal operations.
- Calculate fitness as the percentage of employees who work at a site with a concerns mechanism that lives up to *all* stated criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_G}{E_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_G	Is the number of employees in the company's internal operations who work at a site with a concerns mechanism that lives up to *all* stated criteria.
E_T	Is the total number of employees in the company's internal operations.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company has a total of 250 employees: 50 working in the office and the other 200 at the bottling plant. The company has a concerns mechanism in place at both sites.

The concerns mechanism at the office site is effective and lives up to all stated criteria. However, there have been problems with a lack of transparency and unreasonably lengthy follow-up at the bottling plant. The company company therefore calculates its internal operational fitness as:

$$F^{Int} = \frac{E_G}{E_T} = \frac{50}{250} = 20\%$$

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has a concerns mechanism in place which fulfils all criteria then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input, the following information is required:

- **Estimate employee footprint**: An initial estimate of the number of people that is needed for the creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- The identification of a supplier contributing to the production of the product input – and for that supplier:
  - Its **employee contribution**: The number of people employed by that supplier who are involved in the production of the product input (i.e. what it contributes to the total footprint).
  - Its **fitness contribution:** The number of that supplier's employees who have access to a concerns mechanism that lives up to required criteria.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Useful links

The UN Guiding Principles on Business and Human Rights

The UN's Human Rights Council endorsed the guiding principles in 2011, which apply both to states and business enterprises.

CSR Europe

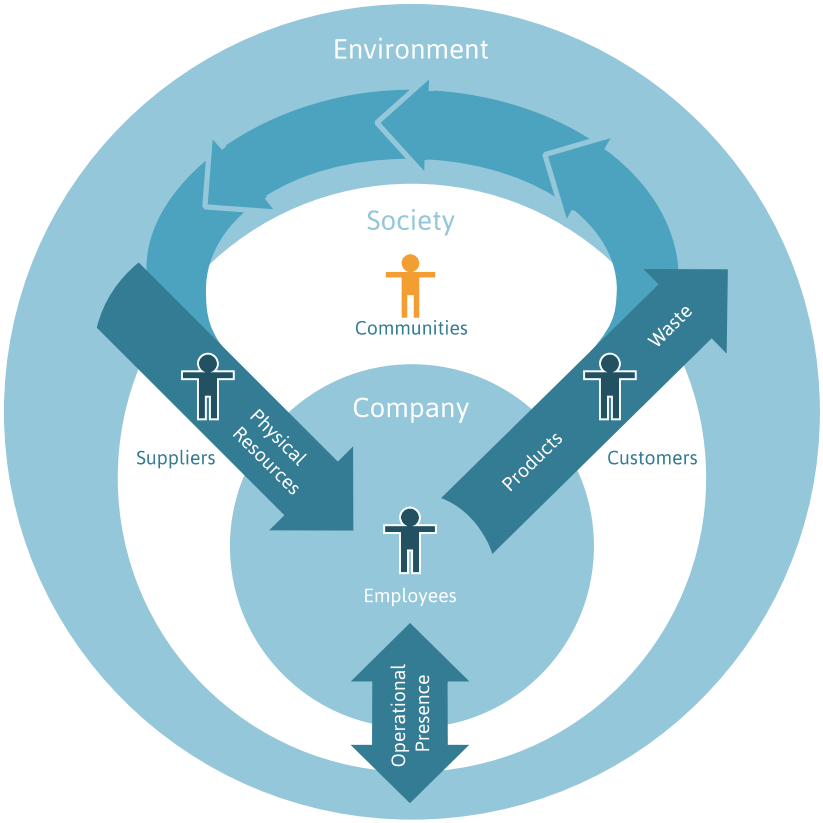
CSR Europe is a leading European business network for corporate social responsibility. In 2013 it published the report Assessing the effectiveness of company grievance mechanisms, which translated the UN's guiding principles into a recommended set of company actions.

The Office of the Compliance Advisor/Ombudsman (CAO)

CAO is the independent recourse mechanism for the International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA). It has released A Guide to Designing and Implementing Grievance Mechanisms for Development Projects.

Communities

Many companies understand the need to respect the physical wellbeing of those around them. Future-fit companies and their core suppliers actively engage communities on any decisions with the potential to affect them, and address any concerns impartially and transparently.



Future-fit goals.

The goal below has an Internal Operations KFI, and – to assess supply chain impacts for which the company is mutually accountable – a Supply Chain KFI.

- Community concerns are actively solicited, impartially judged and transparently addressed

Community concerns are actively solicited, impartially judged and transparently addressed

Goal description

Companies depend on the goodwill of the communities in which they operate, so it makes sense to foster strong relationships with them.

That said, the intent here is to set a minimum threshold of acceptable performance, which in this case means ensuring that the company does nothing to undermine a community's wellbeing.

A future-fit company is not one whose communities are concern-free, but rather one that has taken all steps possible to minimize concerns, and to deal effectively and appropriately with any concerns that arise. Thus the emphasis here is on putting in place appropriate mechanisms to identify and manage community concerns, so that potentially serious issues and legitimate grievances do not go unaddressed.

Note that a company should also take care not to impose its presence on communities in ways that could interfere with their culture and values. This is covered by the goal Operations do not encroach on ecosystems or communities.

Fitness criteria

In order to actively solicit, impartially judge and transparently address community concerns, the company must have in place a well-functioning concerns mechanism, present and freely accessible in all locations where its activities may have an impact.

Requirements for managing community concerns.

Drawing on the guidance embodied in the UN Principles on Business and Human Rights, and that of two other organizations in this area, the following criteria are deemed sufficient for future-fitness:

Ensure legitimacy:

- Stakeholders from and/or representing the community, including any employees who live within it, are actively involved in the design of the concerns mechanism.
- The concerns mechanism accommodates all conceivable types of community concern.

Ensure accessibility:

- Information on the existence and use of the concerns mechanism is actively communicated to local communities, using culturally appropriate information channels.
- Any barriers community members may have in accessing the concerns mechanism (e.g. no Internet access) are overcome, for example by providing different modes of access.

Reduce uncertainty:

- At both corporate level and on a per-community basis, a team or individual is assigned responsibility for facilitating development and implementation of the concerns mechanism.

Ensure fairness:

- Where necessary, community members are provided with access to neutral/independent advice and expertise.

Ensure transparency:

- People who use the concerns mechanism are fully informed throughout the process.
- Any complaint – and the company's response to it – must be made available for public viewing, provided that the complaint relates to the activity of the company or its employees, and insofar as legal and confidentiality restrictions allow.

Ensure positive outcomes:

- All concerns are resolved in a timely manner and without negatively impacting the health of the community, other people or the environment.

Engage actively:

- Community members and established groups that represent their interests are proactively consulted on issues of potential concern – and ahead of any change in company activity – that could impact community wellbeing.

Improve continuously:

- Anyone who uses the concerns mechanism is asked for feedback on how to improve it.
- The performance of the concerns mechanism is monitored and regularly assessed.

Key Fitness Indicator – Internal Operations

The company must identify all of the local communities on which it could be reasonably expected to have an impact[95], and for each one it must determine whether a suitable concerns mechanism is in place which lives up to all stated criteria.

The Internal Operations KFI can then be calculated as follows:

- Identify the number of communities potentially impacted by the company's internal operations which are served by a concerns mechanism that lives up to *all* stated criteria.
- Identify the total number of communities potentially impacted by the company.
- Calculate fitness as the percentage of communities which are served by a concerns mechanism that lives up to *all* stated criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{C_G}{C_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
C_G	Is the number of communities potentially impacted by the company's internal operations which are served by a concerns mechanism that lives up to *all* stated criteria.
C_T	Is the total number of communities potentially impacted by the company.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The office is located in the middle of a city centre, in a long-established commercial district. ACME (reasonably) concludes that the office does not have an adverse effect on communities. The bottling plant on the other hand, is located near a small village, which may potentially be impacted by its activities. ACME therefore puts in place a new concerns mechanism and informs the community of its existence and how to use it. The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{C_G}{C_T} = \frac{1}{1} = 100\%$$

[95] Some company locations – for example a retail store in a shopping centre – are far less likely to have a direct impact on the local community than, say, a chemicals processing plant, or a village through which a company's trucks regularly pass.

Key Fitness Indicator – Supply Chain

All **Supply Chain KFIs** follow a similar calculation procedure. Below we describe the initial steps a company must take to *begin* assessing the fitness of its supply chain. For full details on the calculation procedure see Assessing Supply Chain Fitness.

In line with our definition of mutual accountability the focus is on core suppliers, and thus the fitness of outsourced functions and product inputs must be assessed.

Outsourced functions.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of direct suppliers of outsourced functions (such as customer support, manufacturing, logistics).

If a supplier has multiple sites and if it is possible to identify which ones are involved in delivering the outsourced function to the company and which are not, then the Internal Operations KFI can be used to calculate the fitness level *only for the relevant sites*.

For example, if a supplier has multiple sites, but only one supports the company's business, then only the fitness of that one site need be considered. If that site has a community concerns mechanism in place which fulfil all criteria then the company can consider that supplier to be 100% fit.

If it is not easy to identify the specific supplier site(s) then the fitness for the supplier should be calculated in exactly the same way as for the company's own operations.

Product inputs.

The situation is more complex for product inputs, because a company is mutually accountable for all cradle-to-gate operational impacts caused by their creation. Thus the entire 'sub-chain' of suppliers must be assessed. To *start* assessing the fitness of a product input:

- **Estimate the community footprint**: An initial estimate of the number of communities that may be potentially impacted in creation of the product input, from cradle-to-gate, across the whole sub-supply chain.
- Identify a supplier contributing to the production of the product input – and for that supplier:
    - Its **community contribution**: The number of communities potentially impacted by that supplier in the production of the product input (i.e. what it contributes to the total footprint).
    - Its **fitness contribution:** The number of those communities that have access to a concerns mechanism that lives up to required criteria.

When a company has obtained the necessary information from at least one supplier, it can begin to calculate its Supply Chain fitness. For full details on how to undertake the calculation see Assessing Supply Chain Fitness.

Useful links

The UN Guiding Principles on Business and Human Rights

The UN's Human Rights Council endorsed the Guiding Principles in 2011, which apply both to states and business enterprises.

CSR Europe:

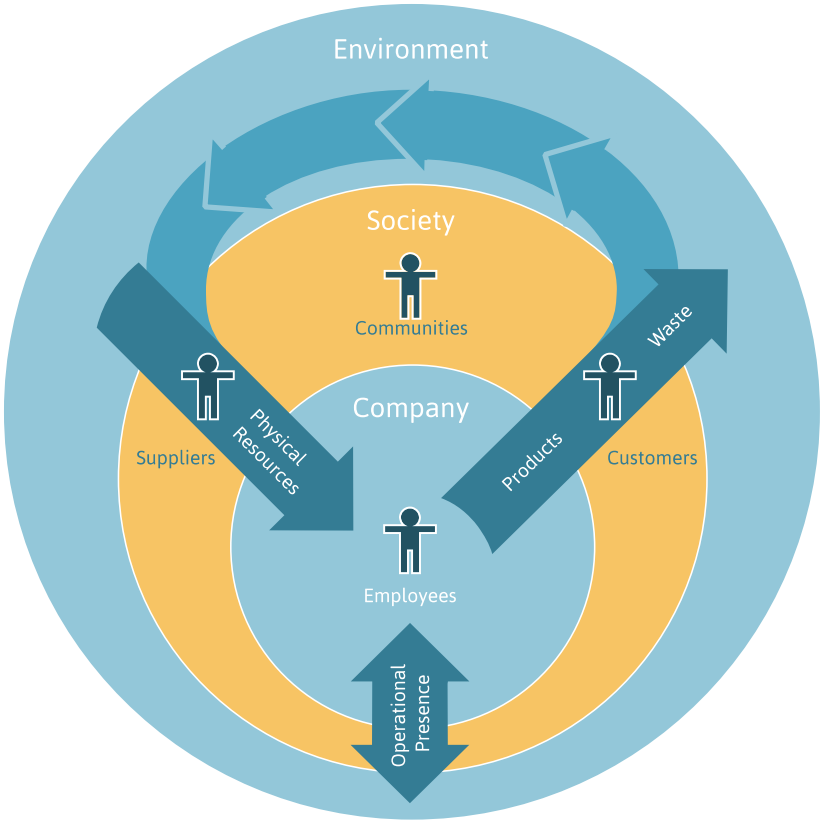
CSR Europe is a leading European business network for corporate social responsibility. In 2013 it published the report Assessing the effectiveness of company grievance mechanisms, which translated the UN's guiding principles into a recommended set of company actions.

The Office of the Compliance Advisor/Ombudsman (CAO)

CAO is the independent recourse mechanism for the International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA). It has released A Guide to Designing and Implementing Grievance Mechanisms for Development Projects.

Society as a Whole

Companies are often managed purely to maximize short-term financial returns for their owners. A future-fit company realizes its stakeholders' interests are best served by acting ethically and by positively influencing the systems – and supporting the infrastructure – that its long-term success depends upon.



Future-fit goals.

Each goal below has a single KFI, which measures the extent to which a company's contributions to and influence on society as a whole are future-fit.

- Business is conducted ethically
- The right tax is paid in the right place at the right time
- Lobbying does not undermine the pursuit of future-fitness

Business is conducted ethically

Goal description

All future-fit goals can, and should, be interpreted as matters of business ethics that apply to any company. This goal, in contrast, focuses on the proactive identification, prevention, and transparent disclosure of any specific issues which could – due to the unique nature of a company's business – lead to breaches of Future-Fit Business Principles.

The kinds of ethical breach that might occur will vary widely across companies, depending on their size, structure, sector, business model, geographical presence, and so on. A future-fit business is not one that is completely immune to ethical concerns and challenges, rather it is one that puts in place effective mechanisms to reduce the likelihood of breaches, to encourage people (employees and third parties) to raise the alarm when one does occur, and to respond effectively to them.

Fitness criteria

No business is immune to ethical concerns and challenges. Examples of potential ethical issues include:

- Anti-competitive practices (e.g. unfair treatment of suppliers, price fixing cartels).
- Bribery (e.g. paying or accepting bribes, including in regions where doing so is considered the norm).
- Dis-information (e.g. misrepresenting or failing to disclose information which could influence the decisions or wellbeing of stakeholders).
- Abuse of trust (e.g. inappropriate use of sensitive personal data).
- Wilful ignorance (e.g. neglecting to investigate supply chains in which human rights abuses are suspected).

Requirements for ethical business conduct.

To be future-fit a company must have in place mechanisms that enable it – and its employees – to identify, monitor and mitigate ethical breaches. To do so it must live up to the following requirements:[96]

[96] These requirements have been informed by such sources as The UN Guiding Principles for Human Rights, as well as issue-specific guidance such as Transparency International's Adequate Procedures – Guidance to the UK Bribery Act 2010.

Undertake a hot-spot assessment:

- Identify potential ethical breaches that the company as a whole could cause, contribute to, or otherwise be vulnerable to, given the nature of the business it is in (size, sector, business model, locations, etc.).
- Identify which departments, employee roles and locations require proactive attention to prevent such ethical breaches.

Adopt a clear commitment:

- Publish and adopt a corporate policy explicitly stating the company's commitment to prevent and deal effectively with all ethical issues identified.
- Communicate the policy to all employees, and ensure that any employees in high-risk departments, roles and locations are fully informed about risks of relevance to them.

Establish appropriate policies and processes:

- At corporate and departmental levels, establish processes that monitor and review performance to identify any shortfalls and to ensure continuous improvement.
- Establish effective response mechanisms to ethical concerns raised by third parties in regards to activities performed by or on behalf of the company (e.g. by its suppliers).
- Inform, train and guide employees to spot potential ethical conflicts, to deal effectively with issues that do arise, and to take steps to prevent them from occurring.
- Provide a secure and accessible channel through which employees and others can raise concerns and report violations in confidence, and without fear of retribution.
- Ensure management and employee incentives do not undermine the corporate policy (e.g. by encouraging anti-competitive behaviours).

Key Fitness Indicator

As a minimum, the company must undertake a hot-spot assessment and adopt a clear company-wide policy as specified, or it is considered to be 0% fit. If such an assessment and policy are in place, then fitness is calculated as follows:

- Identify the number of employees that work at a site with ethics policies and processes that live up to *all* stated criteria.
- Identify the total number of employees in the company's internal operations.
- Calculate fitness as the percentage of employees trained in and with access to ethics policies and processes that live up to *all* stated criteria.

This can be expressed mathematically as:

$$F^{Int} = \frac{E_G}{E_T}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
E_G	Is the number of employees in the company's internal operations trained in and with access to ethics policies and processes that live up to *all* stated criteria.
E_T	Is the total number of employees in the company's internal operations.

Example

ACME Inc. sells lemonade products. Its internal operations consist of two sites: a bottling plant and an office space. The company has a total of 250 employees: 50 working in the office and the other 200 at the bottling plant. The company has a standard code of conduct in place, but it has not established clear commitments nor undertaken hot-spot assessments. It therefore starts out as 0% fit.

The company then decides to establish a clear commitment to conduct all business ethically, and undertakes a comprehensive assessment. It finds that each site is likely to face different types of ethical concerns, and decides to focus first on implementing policies and processes at the office location. Once that is done, the company can calculate fitness as:

$$F^{Int} = \frac{E_G}{E_T} = \frac{50}{250} = 20\%$$

Useful links

The UN Guiding Principles on Business and Human Rights

The UN's Human Rights Council endorsed the Guiding Principles in 2011, which apply both to states and business enterprises.

Transparency International

Transparency International provides guidance on addressing concerns regarding bribery and corruption in their report Adequate Procedures – Guidance to the UK Bribery Act 2010.

The Worldwide Governance Indicators Project

The Worldwide Governance Indicators Project reports governance indicators for 215 economies, for six dimensions of governance: Voice and Accountability; Political Stability and Absence of Violence; Governance Effectiveness; Regulatory Quality; Rule of Law and Control of Corruption.

The right tax is paid in the right place at the right time

Goal description

Governments require tax revenue to fund critical services upon which society and business depends. This goal recognizes the fact that any company should pay its fair contribution to the infrastructure upon which its success – and even its existence – relies (e.g. transport networks, legal system, healthcare, education, public utilities).

This includes not engaging in 'creative accounting' to take advantage of tax loopholes – for example to move money to tax havens – and not deliberately seeking ways to obey the letter but not the spirit of regional tax law.

Fitness criteria

In theory the actual tax paid by a company should closely resemble the statutory rates wherever it operates, but in reality there are many legitimate reasons why the two might diverge, such as government tax breaks and permissible write-offs. Hence it is extremely difficult to assess whether the actual amount of tax paid in any given jurisdiction and year is 'right.' Given this, the approach taken here is to evaluate the company's *commitment* to paying the right tax, as embodied in its tax policy and the level of transparency regarding its accounting data. This follows the guidance of the Fair Tax Mark and the OECD Base Erosion and Profit Shifting (BEPS) project.

Requirements for tax policy and transparency.

The following criteria are applicable to every jurisdiction in which a company (including its subsidiaries) conducts business.

Adopt a fair tax policy:

The company has publically committed to a tax policy which includes the following commitments:[97]

- The company will not structure transactions in a way that does not reflect *genuine commercial activity*, with the intention of reducing a tax liability.
- The company will not have any connections with tax havens, unless and insofar as it is necessary to do so for the purposes of trading within those jurisdictions.

[97] These criteria have been particularly informed by the work of the Fair Tax Mark.

- The company will ensure that the economic substance of transactions coincides with the place and form in which they are reported for taxation purposes.

Conduct country-by-country reporting:

Any company operating in two or more countries should disclose the following information for each country in which it does business, for each appropriate trading period:[98]

- The name of the country it operates in.
- The name of all subsidiaries in the country.
- The financial performance, of each and every listed subsidiary, including:
  - Revenue generated.
  - Profit earned before income tax.
  - The statutory tax rate.
  - Amount of income tax paid.
  - Number of employees.
  - The nature and level of any government subsidies received.
- An explanation for any significant difference between the effective tax rate and the statutory tax rate.[99]

Key Fitness Indicator

As a minimum, the company must adopt a fair tax policy as specified, or it is considered to be 0% fit. If such a policy is in place, then for each country in which the company conducts business, fitness is calculated as follows:

- The company is 100% fit in a country if:
  - All of the aforementioned financial data is reported for that country; and
  - If the country is a tax haven then the company's presence there is only for the purposes of trading within that country.
- Otherwise the company is 0% fit in that country.

This is expressed as follows: Fitness in country $c = f_c = \mathrm{X}\%$, where X={0,100}.

[98] The information should be freely and readily available to access for the general public.

[99] The effective tax rate is the amount of income tax paid on profit earned before income tax.

Future-fitness for the company as a whole is then calculated as a weighted sum of its fitness in each country, using *fraction of revenue contribution* as the weighting factor. Thus a company's tax fitness in a country will be weighted according to how much its presence in that country contributes to its overall revenue.[100]

The Internal Operations KFI can be calculated as follows:

$$F^{Int} = \frac{\sum_{c=1}^{C} f_c \times R_c}{\sum_{c=1}^{C} R_c}$$

Where:

F^{Int}	Is the company's aggregate future-fitness across all countries.
T	Is the number of countries in which the company derives revenue.
f_c	Is the future-fitness of company operations in country *c.*
R_c	Is the revenue generated in country *c.*

Example

ACME Inc. sells lemonade products in two countries (A and B). The company has adopted a fair tax policy but has only disclosed the required tax information in country A, where doing so is a legal requirement. It can now identify the fitness of each market as:

$$f_A = 100\%$$
$$f_B = 0\%$$

The sale of lemonade generates $200,000 in revenue in country A and $300,000 in country B. The company can now calculate its internal operational fitness as:

$$F^{Int} = \frac{f_A \times R_A + f_B \times R_B}{R_A + R_B} = \frac{100\% \times 200{,}000 + 0\% \times 300{,}000}{500{,}000} = 40\%$$

Definitions

Tax haven

The Tax Justice Network's Financial Secrecy Index ranks jurisdictions according to their secrecy and off-shore financial activities. We follow the Fair Tax Mark's guidance on what constitutes a tax haven:

*A **tax haven** is any jurisdiction that scores above 65 on the Tax Justice Network's Financial Secrecy Index.*

[100] This incents a company to focus on adopting fair tax practices in the markets where it generates most revenue, and thus where it relies most heavily on well-functioning public infrastructure.

Useful links

OECD Base Erosion and Profit Shifting (BEPS)

The Base Erosion and Profit Shifting (BEPS) Action Plan was adopted by the OECD and G20 countries in 2013. Amongst other actions it recommends that countries require companies to conduct country-by-country reporting and disclosure to the relevant tax authorities.

The Fair Tax Mark

The Fair Tax Mark is a UK non-profit that has created a Fair Tax benchmark, with a corresponding set of criteria for UK-owned multinational companies, as well as companies trading solely in the UK.

Lobbying does not undermine the pursuit of future-fitness

Goal description

Companies often seek to influence the markets within which they operate, by lobbying those with the power to change them. This goal recognizes that any attempt to influence market dynamics in favour of the business must not in any way contribute to hindering progress toward future-fitness, in or beyond the company.

For example, a future-fit company would not fund any organization that protests against more stringent toxic emissions laws.

Fitness criteria

The requirement here is not to pro-actively lobby or campaign *in favour of* future-fit outcomes, but rather to ensure that no lobbying activity *undermines* them. This extends to cover any individual or organisation that lobbies or campaigns on behalf of its supporters, and which the company pays to support (e.g. through membership fees or donations), including but not limited to trade associations and lobbying firms, as well as political candidates, parties, committees and campaigns.

Requirements for lobbying policy and transparency.

The following criteria are applicable to all company-controlled entities, including subsidiaries.

Lobbying policy requirements:

The company must adopt a lobbying policy to the effect that it and its subsidiaries will not seek to influence market dynamics in ways that could undermine society's progress toward future-fitness.

Lobbying disclosure requirements:

For each lobbying contribution made, the following must be disclosed:

- Recipient name(s).
- Amount of contribution.
- Date of contribution.

Lobbying fitness assessment:

Recipients of company contributions may lobby or campaign for a range of different issues, and there may be a degree of subjectivity in determining whether a particularly viewpoint is aligned with future-fitness. For this reason:

A contribution is considered unfit if its recipient actively campaigns for policies that seek to keep, or put in place, structural barriers that hinder society's or other companies' ability to become future-fit.

Examples include trade organizations that lobby against progressive climate change legislation, or against raising the legal minimum wage in regions where it falls short of a living wage.

Key Fitness Indicator

At a minimum, the company must adopt a lobbying policy that meets the stated criteria, otherwise the company is considered to be 0% fit. If such a policy is in place, then for each lobbying contribution the company must assess fitness follows:

- The contribution is 100% fit if it lives up to all stated criteria.
- Otherwise the contribution is 0% fit.

This is expressed as follows: Fitness of lobbying contribution $l = f_l = \mathrm{X}\%$, where X = {0,100}.

Future-fitness for the company as a whole is then calculated as a weighted sum of the fitness of each lobbying contribution, using *fraction of cost contribution to total lobbying spend* as the weighting factor. Thus the fitness of an individual contribution is weighted according to how much it contributes to the company's overall lobbying activity.

The Internal Operations KFI can be calculated as follows:

$$F^{Int} = \frac{\sum_{l=1}^{L} f_l \times C_l}{\sum_{l=1}^{L} C_l}$$

Where:

F^{Int}	Is the future-fitness of the company's internal operations.
f_l	Is the future-fitness of contribution l.
C_l	Is the monetary amount of contribution l.
L	Is the total lobbying spend.

Example

ACME Inc. sells lemonade products. It has adopted a future-fit lobbying policy and is a member of the International Beverage Council (IBC) as well as the Association of General Trade (AGT). The IBC has acknowledged the links between increasing obesity rates and the intake of sugared beverages, and it is working with authorities to come up with the best industry-wide solutions.

AGT on the other hand, actively lobbies against a minimum wage increase in a range of countries where the current minimum wage is far below the estimated living wage.

ACME pays an annual fee of $20,000 to IBC and $30,000 to AGT. Its fitness can now be calculated as:

$$F^{Int} = \frac{f_{IBC} \times C_{IBC} + f_{AGT} \times C_{AGT}}{C_{IBC} + C_{AGT}} = \frac{100\% \times 20{,}000 + 0\% \times 30{,}000}{50{,}000} = 40\%$$

Useful links

The Robert Zicklin Center for Corporate Integrity (ZCCI)

The ZCCI's Baruch Index of Corporate Political Disclosure measures a company's willingness to disclose and be transparent about its corporate political activity. The index measures the ease with which someone can find the relevant materials on company websites; what policies, procedures, and corporate governance structures are in place and disclosed; and what the company says about who and what it gives to, and how those donations are made.

Assessing Supply Chain Fitness

Measuring operational fitness beyond the company's own four walls.

Introduction

This chapter explains how to calculate **Supply Chain KFIs**. In particular it offers detailed guidance, with examples, on how to calculate cradle-to-gate impacts for product inputs, and explains when third party certification standards may be used as proxies for measuring a supplier's fitness.

Calculating Supply Chain KFIs

Every Future-Fit Goal relating to a company's *Physical Resources*, *Operational Presence*, *Employees* and *Communities* have two KFIs: an **Internal Operations KFI** which measures fitness within the company's own four walls, and a Supply-Chain KFI which assesses fitness across the parts of the company's supply chains for which it is mutually accountable.

A company is deemed to be mutually accountable for impacts resulting from the provision of supplied goods or services if their absence would seriously affect its business. This encompasses what we term **core suppliers**, which break down into two categories:

1. **Outsourced functions:** A company is mutually accountable for the internal operational impacts of any direct supplier to whom it outsources core business functions (e.g. customer support, assembly plants, logistics).
2. **Product inputs:** A company that sells goods (or services whose delivery requires goods to be consumed) is mutually accountable for all *cradle-to-gate* operational impacts caused by the creation of its product inputs.

Design considerations for calculating Supply Chain KFIs

To assess fitness across the supply chain, we need a way to assess fitness at a supplier level, plus a way to aggregate these supplier-specific values up to give a sense for overall fitness.

Assessing fitness for an individual supplier is simply a matter of applying the same goal-specific fitness criteria that the company uses to assess its own internal operations. Aggregation *across* suppliers requires additional thought.

To construct a suitable aggregation mechanism, we considered the following:

- **A company should be able to start assessing the future-fitness of its supply chain without having mapped every supplier**. This demands an aggregation mechanism that accommodates knowledge gaps, by assuming a value of zero for any part of the supply chain whose fitness has not yet been calculated.
- **A company should prioritize the assessment of suppliers that it depends upon most.** This demands an aggregation mechanism that places greater emphasis on those parts of the supply chain which contribute most to the business.
- **A company should be encouraged to find out more about its supply chains.** This demands an aggregation mechanism that does not penalize increased knowledge: a poorly-performing part of a supply chain may not improve the score, but it should never reduce it.
- **A company should only be held accountable for the proportion of a supplier's impacts that relate to it**. Insofar as is practical, it should be possible to calculate each supplier's future-fitness only for that part of its activity from which the company benefits.

In response to these considerations, we calculate a company's aggregate supply chain fitness using a weighted sum approach, with each **Supply Chain KFI** adopting *fraction of contribution to total supplier spend* as the weighting factor.

Aggregating across the supply chain

The first step is to identify at least one supplier to whom a core function is outsourced, or from whom a product input is obtained.

The **Internal Operations KFIs** can be used to calculate the future-fit scores of suppliers of outsourced functions. The situation is more complex for product inputs, because in this case impacts from across the entire 'sub-chain' of suppliers must be assessed. See Assessing the fitness of product input sub-supply chains for more details.

Once the future-fitness of at least one outsourced function or product input is known, the **Supply Chain KFI** is the cost-weighted sum of the future-fitness scores of all outsourced functions and product inputs.

This can be expressed mathematically as:

$$F^{SC} = \frac{\sum_{d=1}^{D}(f_d^{Int} \times C_d) + \sum_{i=1}^{I}(f_i^{PI} \times C_i)}{\sum_{d=1}^{D} C_d + \sum_{i=1}^{I} C_i}$$

Where:

F^{SC}	Is the company's aggregate supply chain fitness.
D	Is the total number of direct suppliers of outsourced functions.
f_d^{Int}	Is the internal operational future-fitness of each direct supplier of an outsourced function *d* (for *d* as a whole, or if practical for the fraction of its impacts that relate to the company's spend).
C_d	Is the cost of services sourced from supplier *d*.
I	Is the total number of product inputs sourced by the company.
f_i^{PI}	Is the future-fitness of product input *i*.
C_i	Is the cost of purchasing product input *i*.

Assessing the fitness of product input sub-supply chains

For each goal the company should follow a step-wise approach:

1. **Estimate the production footprint.** For each product input, use available knowledge about its supply chain to make an informed estimate of the nature and scale of the impacts that may occur, from cradle-to-gate. This serves as a starting point from which to determine the size of the fitness gap that must be closed.

1. **Start identifying suppliers.** Begin tracing each product input back to its source(s), to identify the actual suppliers involved in its production, and to refine the initial production footprint estimate.

2. **Incrementally assess fitness.** As suppliers of a product input are identified, work with them to measure the size – and fitness – of their contribution to its overall production footprint.

These steps are now described in detail.

Step 1 – Estimate the production footprint

To meaningfully assess progress toward future-fitness for a product input, we need an idea of the scope of the potential impact – or production footprint – of its sub-supply chain to use as an initial starting estimate.

Consider, for example, an apparel manufacturer whose main product input is cotton. Is it 'good' if 1,000 people in the company's cotton supply chain are paid a living wage? To answer that question, we must have a sense for how many people *in total* play a part in that supply chain. If the total number is 1,000 then the company would be fully future-fit – but if the total is 5,000 the company would only be 20% of the way there. The same logic applies when it comes to assessing water stewardship, community engagement, or indeed any other operational impact.

This concept of a production footprint can be applied to any operational goal for any product input. For example:

- **Employee goals:**
  Footprint is the total number of employees working in the supply chain.
- **Resource goals:**
  Footprint is the total amount of energy, water or materials used by the supply chain.
- **Community goals:**
  Footprint is the total number of communities affected by the supply chain.

In theory, if we knew the entire production footprint of a product input, assessing fitness would be easy: we would simply treat the whole supply chain as a kind of 'meta company' and apply the same goal-specific fitness criteria that are used to assess internal operations.

In practice, of course, it's not that simple, because companies today are often unable to trace their product inputs back to their original source(s). In fact many companies may not know much at all about what happens beyond their direct suppliers. So a different approach is needed: we still use the same fitness criteria, but we have to *estimate* the overall production footprint of the supply chain, so that we can start to measure progress.

As a company digs deeper into a product input's supply chain, new information may come to light that requires the initial estimated production footprint to be modified. Whenever that happens, the product input's fitness must be recalculated, to accommodate the new estimate. For example, if it turns out that twice as many people are involved in creating the product input than originally estimated, any progress the company thought it had made would effectively be cut in half. To minimize the risk of this happening, it is in the practitioner's interest to estimate the production footprint as accurately as possible on day one, using whatever information is available, including third party data such as published lifecycle assessments.

Step 2 – Start identifying suppliers

When the production footprint of the product input has been estimated, the next step is to begin identifying the actual suppliers contributing to it. Each supplier in the supply chain accounts for part of that overall footprint, and therefore has the potential to contribute to the future-fitness of the product input.

To measure the fitness of the product input as a whole, all contributing suppliers must be identified – right back to the sources (e.g. farm, mine) of the natural resources from which the product input is derived.

While this is a significant undertaking, early investigations will likely reveal supply chain 'hotspots' – activities that are particularly energy, water or labour intensive, for example – and attention can be focused on them. In such cases, it may be possible to quickly identify the suppliers who can make the biggest contribution to overall fitness.

Step 3 – Incrementally assess fitness

As mentioned in step 1, the entire supply chain for a product input can be thought of as a kind of 'meta company,' for which an overall future-fit score can be calculated. Every supplier in that supply chain has the potential to contribute to that score. We call this a supplier's *fitness contribution*, and we assess those contributions by applying the same goal-specific fitness criteria that are used to assess internal operations.

A supplier's fitness contribution can be calculated in one of two ways – depending on the type of metric used:

- **For proportional outcome metrics** (e.g. proportion of employees paid a living wage, or proportion of energy from renewable sources) the supplier's fitness contribution is the number of entities (e.g. employees, communities, units of energy) for which the fitness criteria are met. See example 1 below.
- **For elimination outcome metrics** (e.g. the elimination of GHGs or waste) the supplier's fitness contribution is the absolute reduction the supplier has achieved since it was first identified by the company, and for which the fitness criteria are met. See example 2 below.

In both cases, **a product input's fitness** is then the sum of each supplier's *fitness contribution* as a proportion of the total estimated production footprint.

This can be expressed as:

$$f_i^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF}$$

Where:

f_i^{PI} Is the future-fitness of product input *i*.

S	Is the number of *identified* suppliers involved in producing product input *i.*
CON_s	Is the fitness contribution to input *i's* future-fitness of each identified supplier *s.*
PF	Is the total estimated production footprint.

This calculation can be re-computed whenever a new supplier is identified – or whenever the fitness of a previously-identified supplier improves – until the entire supply chain has been assessed.

Example 1 – Paying a living wage.

An apparel manufacturer commits to reaching the Future-Fit Goal Employees are paid a living wage for cotton fabric, its primary product input.

Recall that:

$$F = \frac{E_L}{E_T}$$

Where:

F	Is the future-fitness.
E_L	Is the number of employees who receive at least a living wage.
E_T	Is the total number of employees.

The company estimates that 3,000 people are involved in its cotton fabric supply chain – 1,500 in farming the raw cotton, and 1,500 in weaving it – and this becomes its working production footprint estimate (PF).

It identifies that only two suppliers – *P* and *Q* – are responsible for farming its raw cotton. It finds out that supplier *P* employs 1,000 people, and that only 300 of them are paid a living wage, so its fitness contribution is 300. At this point the company can start to calculate the future-fitness of its cotton fabric as the proportion of people that it knows are paid at least a living wage, thus:

$$f_{Cotton}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_P}{3{,}000} = \frac{300}{3{,}000} = 10\%$$

The company then contacts supplier *Q*, and discovers that it employs 1,500 people – meaning that its original estimate for people involved in cotton farming (1,500) was 1,000 people too low – but it does not yet know how many of *Q*'s employees are paid a living wage. It revises its production footprint estimate up to 4,000, and recalculates thus:

$$f_{Cotton}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_P + CON_Q}{4{,}000} = \frac{300+?}{4{,}000} = 7.5\%$$

The company then finds out that supplier *Q* is already paying 700 of its 1,500 employees a living wage. The calculation is then:

$$f_{Cotton}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_P + CON_Q}{4{,}000} = \frac{300 + 700}{4{,}000} = 25\%$$

The company then works with supplier *P* to double the number of its people being paid a living wage, from 300 to 600. So the future-fitness of the company's cotton fabric can now be calculated as:

$$f_{Cotton}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_P + CON_Q}{4{,}000} = \frac{600 + 700}{4{,}000} = 32.5\%$$

The company can continue to improve the future-fitness of its cotton either by raising the performance of suppliers *P* and *Q*, or by finding out about the weaving suppliers in the chain.

Example 2 – Eliminating greenhouse gas emissions.

An industrial pipe manufacturer commits to reaching the future-fit goal Operations emit no greenhouse gases for copper sheeting, one of its main product inputs.

Recall that:

$$F = \begin{cases} \frac{E_R}{E_0} & for \;\; E_R \geq 0 \\ 0 & for \;\; E_R < 0 \end{cases}$$

Where:

F	Is the future-fitness.
E_0	Is the reference year emissions.
E_R	Is the **reduction** in total emissions relative to the reference year.

The company estimates that the total production footprint – i.e. the total GHG emissions caused by the provision of its copper sheeting – is 10,000kg CO_2e: 8,000kg due to mining the copper ore, and 2,000kg due to its processing. This becomes the working production footprint estimate (PF), because it is the *potential* amount of GHG emissions to be eliminated.

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{?}{10{,}000} = 0$$

The company then identifies that suppliers *Y* and Z each process and provide half of its copper sheeting. It discovers that *Y* emits 3,000kg CO_2e, and that Z emits 1,000kg. This sums up to way more than its original estimate for the copper processing phase (4,000 kg versus 2,000 kg), so the working production footprint estimate is revised up.

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{?}{12{,}000} = 0$$

The company starts working with *Y* to help it reduce its unusually high emissions. After a year, through simple energy saving measures, *Y*'s emissions fall by a third, from 3,000kg to 2,000kg. *Y* thus contributes 1,000kg to the elimination of the copper sheeting's GHG emissions. But in the meantime *Z*'s emissions actually *increase* by 500kg – a negative contribution. Fitness can now be calculated as:

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_Y + CON_Z}{12{,}000} = \frac{1{,}000 + (-500)}{12{,}000} = 4.2\%$$

The following year the company works with *Y* and *Z* to identify the (tier 2) suppliers of their copper ore, and it collects initial data about their emissions. It discovers that it overestimated the mining emissions, which total only 5,000kg (not 8,000kg), so it revises its production footprint estimate down by 3,000kg thus:

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_Y + CON_Z}{9{,}000} = \frac{1{,}000 + (-500)}{9{,}000} = 5.6\%$$

Now the company has mapped its copper sheet supply chain it can continue to work with all suppliers to gradually eliminate their GHG emissions, until its copper sheeting is 100% fit with respect to this goal.

How to accommodate changes in a supply chain

Suppliers within a product input's sub-supply chain will on occasion change. How this affects assessment of future-fitness for that product input depends on the goal. As described above, some KFIs employ an elimination outcome metric, while others use a proportional outcome metric.

For both cases, consider an old supplier O being replaced by a new supplier N, somewhere in a product input's sub-supply chain.

For proportional outcome metrics:

- If the current footprint of supplier N is unknown, the production footprint estimate should remain the same until it can be ascertained, and the fitness contribution of O must be annulled.
- If the current footprint of supplier N is known and different from that of supplier O, the production footprint estimate should be updated to reflect the new value. The fitness

contribution of O must be annulled, and replaced by the fitness contribution of N, or by zero until it can be ascertained.

For elimination outcome metrics:

- If the current footprint of supplier N is unknown, the production footprint estimate should remain the same until it can be ascertained, and the fitness contribution of O must be annulled.
- If the current footprint of supplier N is lower than that of O, the difference is treated as an effective reduction and therefore as a fitness contribution. The original footprint contribution of O (and thus the overall production footprint estimate) remains unchanged.
- If the current footprint of supplier N is higher than that of O, any fitness contribution made by O must be annulled. The original footprint contribution of O (and thus the overall production footprint estimate) remains unchanged. Hence the new supplier N will only positively contribute to the product input's fitness once it has reduced its impact *beyond* O's footprint contribution.

Example: Eliminating greenhouse gas emissions... continued.

An industrial pipe manufacturer has committed to reaching the goal Operations emit no greenhouse gases for copper sheeting, one of its main product inputs.

Recall that:

$$F = \begin{cases} \frac{E_R}{E_0} & for \;\; E_R \geq 0 \\ 0 & for \;\; E_R < 0 \end{cases}$$

Where:

F	Is the future-fitness.
E_0	Is the reference year emissions.
E_R	Is the **reduction** in total emissions relative to the reference year.

The company has estimated that the total production footprint – i.e. the total GHG emissions caused by the provision of its copper sheeting – is 9,000 kg CO_2e. Of this, 4,000 kg is due to mining the copper ore, and 5,000 kg is due to its processing. Thus its production footprint estimate is 9,000 kg.

$$f^{PI}_{Copper} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{?}{9{,}000} = 0$$

The company has further identified the suppliers (*Y* and Z) who process and provide half of its copper sheeting respectively, as well as a tier 2 supplier (A) of copper ore. In total Y and

Z have made fitness contributions of 1,000 kg and A has made a fitness contribution of 500 kg, by reducing its emissions from 4,000 kg, to 3,500 kg. *(Note that A's original footprint contribution is therefore 4,000 kg.)*

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_Y + CON_A}{9{,}000} = \frac{1{,}000 + 500}{9{,}000} = 16.7\%$$

However, the following year Y replaces A with new supplier B. The company does not know the GHG emissions of B and therefore revises its fitness:

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_Y + ?}{9{,}000} = \frac{1{,}000}{9{,}000} = 11.1\%$$

In collaboration with Y, the company now works with B to identify its emissions which total only 3,200 kg. The switch in supplier has therefore resulted in a total reduction of 800 kg from the previous supplier's footprint contribution of 4,000 kg. Fitness can now be revised as:

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_Y + CON_B}{9{,}000} = \frac{1{,}000 + 800}{9{,}000} = 20\%$$

Unfortunately, a contractual disagreement now forces Y to replace B with a third copper supplier, C. It turns out that C's current footprint is 3,800 kg – higher than the current footprint of B (3,200 kg) but 200 kg lower than the original footprint (4,000 kg). Fitness can now be revised as:

$$f_{Copper}^{PI} = \frac{\sum_{s=1}^{S} CON_s}{PF} = \frac{CON_Y + CON_C}{9{,}000} = \frac{1{,}000 + 200}{9{,}000} = 13\%$$

Certifications as proxies

To quantify supply chain progress toward a Future-Fit Goal with any degree of certainty, a company will have to verify that the fitness criteria are actually being met by its suppliers, for example through the use of independent auditing. This may seem like a daunting task, particularly for companies with large, complex, multi-layered supply chains. But – with some caveats – the use of existing certification standards may significantly reduce the burden.

Many industry- and issue-specific certification standards already exist to help companies identify whether the goods and services it purchases have been produced responsibly. In fact, when developing the fitness criteria for a number of the Future-Fit Goals, we drew on the guidance and research of many such standards. So it should come as no surprise that there is some overlap between certain goal-specific fitness criteria and the performance levels that leading certification bodies are already demanding.

Whenever part of a supply chain has been certified to a *sufficient* standard, this fact may serve as a *proxy* for performance verification – meaning that a company need 'look no further'. Specifically:

A supplier (or 'branch' of a supply chain) is considered future-fit with respect to a particular goal if:

i) it has been certified by a recognised and independent standard; and

*ii) that standard demands a level of performance **equivalent** to the goal's fitness criteria.*

Examples include:

- An FSC-certified supplier of timber is considered future-fit with respect to the goal Materials derive from sources that respect the welfare of ecosystems, people and animals.
- A supplier accredited as a living wage employer by The Living Wage Foundation is considered future-fit with respect to the goal Employees are paid at least a living wage.

Note, however, that many of today's certification standards – although pushing companies in the right direction – do not go far enough to guarantee **future-fit levels of performance**. Hence the onus is on the company to check, on a goal-by-goal by basis, whether a particular certification is sufficiently stringent to serve as a proxy.

Appendix 1: Greenhouse Gas Protocol

Future-Fit requirements and the GHG Protocol.

Mutual accountability and the GHG Protocol

In relation to the Greenhouse Gas (GHG) Protocol, the Benchmark covers all Scope 1 and Scope 2 emissions, as well as the subset of Scope 3 emissions that are in line with our definition of mutual accountability. For example, emissions associated with business travel are a direct consequence of company operations, but individual employee journeys (e.g. commuting) are not – unless the company pays for them. The table below (continued overleaf) summarizes how the Future-Fit Goals and KFIs relate to the GHG Protocol.

Scope	Emission categories	Future-Fit coverage
Scope 1	Direct GHG emissions that occur from sources that are owned or controlled by the company	A company is accountable for all direct emissions that occur from sources it owns or controls.
Scope 2	Emissions from the generation of purchased or acquired electricity, steam, heating, or cooling	A company is accountable for all emissions that result from the generation of purchased or acquired electricity, steam, heating and cooling.
Scope 3	Purchased goods and services	A company is mutually accountable for all cradle-to-gate emissions caused by the production of its purchased product inputs. This includes any materials which are necessarily consumed in the delivery of its goods or services.
Scope 3	Capital goods	Emissions associated with production of capital goods are not covered since they fall outside the bounds of our mutual accountability definition.

Scope	Emission categories	Future-Fit coverage
Scope 3	Fuel- and energy-related activities not included in Scopes 1 or 2	Emissions associated with fuel- and energy-related activities that do not fall under Scope 1 or Scope 2 are not covered since they fall outside the bounds of our mutual accountability definition.
Scope 3	Upstream transportation and distribution	A company is mutually accountable for emissions that occur as a result of suppliers of outsourced core functions delivering their services to the company. This includes all transportation and distribution services purchased by the company.
Scope 3	Waste generated in operations	Emissions associated with waste disposal are not covered since they fall outside the bounds of our mutual accountability definition.
Scope 3	Business travel	A company is accountable for all emissions associated with employee transportation if paid for by the company.
Scope 3	Employee commuting	A company is accountable for emissions associated with employee commuting if paid for or reimbursed by the company.
Scope 3	Upstream leased assets	A company is accountable for all emissions caused by the use of assets that they lease.
Scope 3	Downstream transportation and distribution	A company is mutually accountable for emissions that occur as a result of suppliers of outsourced core functions delivering their services to the company. This includes all transportation and distribution services purchased by the company.
Scope 3	Processing of sold products	A company is mutually accountable for emissions that occur as a direct consequence of the use of its products (even if those products are subject to further processing, transformation, or inclusion in another product before they reach the end customer).
Scope 3	Use of sold products	A company is mutually accountable for emissions that occur as a direct consequence of the use of its products by end customers.
Scope 3	End-of-life treatment of sold products	A company is mutually accountable for emissions that occur as an unavoidable consequence of the end-of-life processing of its products.
Scope 3	Downstream leased assets	A company is mutually accountable for emissions that occur as a direct consequence of the use of its products, and this includes assets that the company leases to others.
Scope 3	Franchises	Emissions associated with franchises are not covered by the KFIs in this first release, but future releases will address this.
Scope 3	Investments	Emissions associated with investments are not covered by the KFIs in this first release, but future releases may address this.

Appendix 2: Definitions

Terminology used throughout this document.

Community

We define a community as follows:

__Community__: The people who live, work, or play in the vicinity of a company site, or who are affected by its day-to-day operations (e.g. through proximity to its transport routes).

Employee

We define an *employee* as follows:

An __employee__ is any individual paid directly by the company, on either a full- or part-time basis.

Future-Fit Business

We define a *future-fit business* as follows:

A __future-fit business__ is one that creates value while in no way undermining – and ideally increasing – the possibility that humans and other life will flourish on Earth forever.

Internal Operations

We define a company's *internal operations* as follows:

A company's __internal operations__ encompasses any and all activities that the company undertakes itself.

When it comes to extra-financial performance, what exactly constitutes the boundary of "a company" is debated. Various definitions have been proposed, to determine what should and should not be included, based on equity share, financial control, or operational control. See the Climate Disclosure Standards Board's Proposals for boundary setting in mainstream reports for one such example.

For the purposes of this release, we do not attempt to specify just one approach. Instead we recommend that companies follow whatever approach they already use to report financial performance.

Mutual Accountability

A company is *wholly accountable* for impacts within its direct control, such as those caused by its internal operations or the design of its products. But we also consider a company to be *mutually accountable* for other impacts:

*A company is **mutually accountable** for impacts caused by others if:*

1. *the impact is a consequence of the company's existence and its interaction with other actors in the broader economic system; and*
2. *the company can influence those actors.*

For more information see the Mutual Accountability overview in the Approach chapter.

Products

We define a *product* as follows:

*A **product** is any good or service offered to a customer in exchange for revenue, along with any physical item delivered to the customer in support of that good or service (e.g. packaging, operating instructions, leased equipment).*

Product Inputs

We define a *product input* as follows:

*A **product input** is any material which is necessarily consumed in the delivery of a product or service. This includes:*

1. *Ingredients or components required to manufacture a physical good, which either end up embedded in it or are used up (e.g. a catalyst) during its production.*
2. *Consumable substances which are required to provide a service (e.g. detergents and paints used by a commercial decorator).*

Subsidiary

We follow the OECD in defining a subsidiary as follows:

*A **subsidiary** is a company controlled by another company. Control occurs when the controlling company owns more than 50 per cent of the common shares.*

When the parent owns 100 percent of the common shares, the subsidiary is said to be wholly owned. When the subsidiary operates in a different country, it is called a foreign subsidiary. The controlling company is called a holding company or parent. A subsidiary is a corporation with its own charter and is not a division of the controlling company.

Suppliers

We define a *supplier* as follows:

Any organisation whose activities in some way contribute to a company's ability to generate value, even if the company has no direct contractual relationship with that organisation, is considered to be a ***supplier*** *to the company.*

And we define a *direct supplier* as follows:

Any supplier with whom a contractual relationship exists and which the company pays directly is referred to as a ***direct supplier****.*

Depending on industry and geography, what we define here as a *direct supplier* may be referred to as a *tier 1 supplier* or *vendor*. A company's supply chains can theoretically be mapped by identifying its direct suppliers, then *their* direct suppliers, and so on. Companies typically will have several types of supplier. We distinguish between **core suppliers** and **ancillary suppliers**.

Core suppliers include:

- Suppliers of **outsourced functions:** Any supplier to which a company outsources core business functions (e.g. assembly plants, logistics).
- Suppliers of **product inputs:** Any supplier involved in the production of a product input, from the mining, farming or wild harvesting of natural resources, through interim processing and transport, until the product input is delivered to the company.

Ancillary suppliers include:

- Suppliers of **occasional services**: Services that the company uses from time to time (e.g. consultants, airlines used for business travel, hotels rooms, taxis).
- Suppliers of **ancillary consumables**: Goods consumed by the company in support of its day-to-day operations (e.g. cleaning products, office supplies).
- Suppliers of **manufactured assets**: Purchased or leased assets that support the company's day-to-day activity (e.g. buildings, IT equipment, machinery, furniture).

At Future-Fit Foundation we aim to encourage and equip business leaders, investors and others with the means to understand and quantify how they are contributing to a prosperous future for all.

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