

Q & A for the concepts: "Total emissions approach" and "Climate positive"

This Q& A is an attempt to cover some of the most common questions about the possibilities for a company to use a "total emissions approach" and becoming "Climate Positive" (these concepts are only working names). The document does not address questions about why reduced emissions are important or what solutions that are necessary. The focus is on the opportunities and challenges with an approach that allow companies to also measure and report their positive contribution in society by providing goods and services that help reduce emissions. This is a living document and comments are most welcome. Please send feed-back/questions/suggestions to: Dennis Pamlin, dennis@transformative-solutions.net

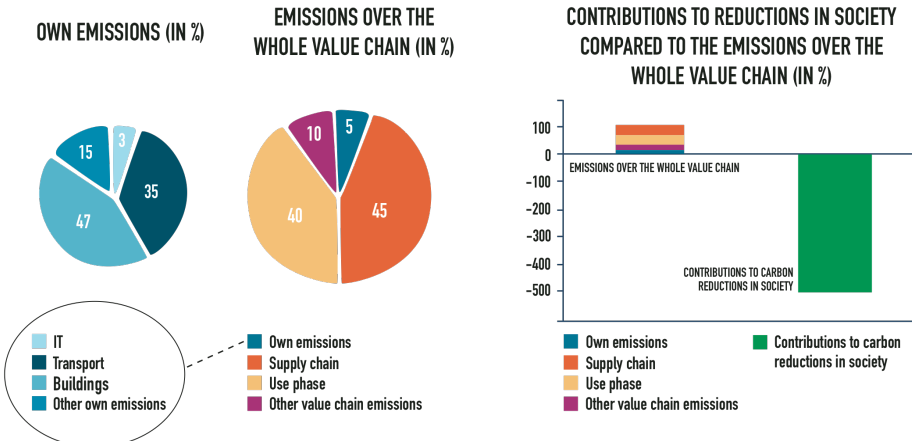
Q1: What is new in this "total emissions approach" compared to the traditional way for measure GHG emissions?

It is first and foremost a widening in focus that allows companies and societies to assess the full impact of a company's activities in terms of emissions. Traditionally the focus has been on emissions from the company's own operations (scope 1 and 2). These days the traditional way have been extended to also include the emissions from the supply chain and the use phase part of the value chain (scope 3).

The "service" approach discussed in this paper widens this to include also the effects of a company have on society from a "service" perspective. A "total emissions approach" includes both the emissions from the company and the effect on society that are not included in traditional ways of measuring. This perspective allows companies to both measure their own emissions, but also measure their positive and negative impacts on society through the services they provide.

A "total emissions approach" measure how society's footprint is changed/influenced by a company's operations and products/services in a given time period.

A COMPANY'S EMISSIONS AND REDUCTIONS FROM DIFFERENT PERSPECTIVES



For example a company can provide energy efficient lighting that substitute inefficient lighting and by including a focus on society it can measure those savings. In the same way a company providing support for low carbon food and reduced waste can measure this, a company providing transport solutions that allow for shipping instead of flying can measure this, a company providing enzymes that allow washing on lower temperatures can measure this, a company providing e-book solutions that reduced the need for paper and physical storage can measure this, etc. All these solutions help society to reduce emissions and to capture these contributions a new way to calculate and report is necessary. It is important to understand that the focus on impacts on society from a companies services is not instead of traditional measuring of the company's emissions (scope 1-3), it is an additional aspect to allow better focus on the activities that are the most important and to allow companies with important solutions become more visible. It is important to understand that while it is relatively easy to develop protocols for measuring Scope 1-2 emissions the changes in emissions due to services provided are as complicated (and sometime even more complicated) to assess as scope 3 emissions. The main reason is that a total emissions approach involves much more individualized modelling and is harder to standardize within sectors or across sectors or product/service lines. In order to avoid speculative reporting/communication it is necessary to standardize as much of it as is possible.

Q2: What is the best a company can do if it only focuses on its own emissions and what is the best a company can do if it focuses on the total impact on society

The traditional perspective look at emissions that a company is generating over the value chain and the best a company can do is to eliminate all the emissions, thus having zero climate impact. This is good and a medium or long-term target for zero/extreme low carbon emissions from the operations within the value chain and in the use phase of its product should be encouraged.

When shifting the perspective to society the emissions from the company are still important, but the services that a company provides, that have an impact on the emissions in society, are also included. From this perspective the best a company can do is to provide as much reductions in society as possible, while keeping the own emissions as low as possible. With this approach a company can in fact become "Climate Positive" – i.e. the net contribution from the company's activities will be an overall reduction in terms of emissions in society.

Q3: What is a "total emissions approach" and can this allow companies to become "Climate Positive"?

A total emission approach is an approach where both the emissions from the company (The whole value chain including own operations as well as the supply chain, energy during product use and end-use) as well as the positive or negative contributions from a company is included when measuring and reporting emissions.

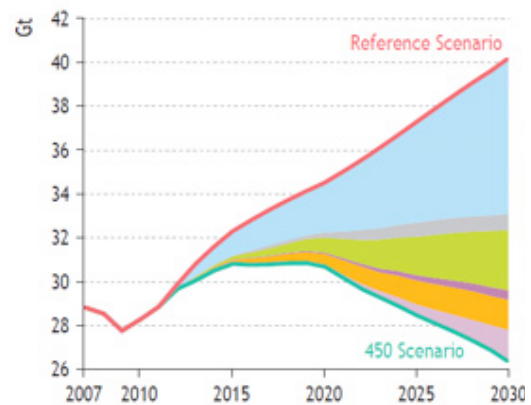
A total emission approach allows a company (and society) to see if a company has an overall positive or negative climate contribution. E.g. IT companies can measure not just the production and energy use of a video conference solution, but also the reductions in

flying that it contributes to. For a retailer support for low carbon living (energy, food, transport) with products and information can help customers to reduce emissions.

In order to become climate positive the reductions in society, as a direct consequence of changes in the company's operations or its product innovations, must be larger than the emissions from the company.

Q4: Can increased emissions from a company result in decreased emissions in society?

Yes. It might sound contradictory that a company that increases its own emissions can in fact contribute to a reduction in emissions in society. The reason for this is that society will not only reduce emissions by lowering emissions from current solutions, it will need new solutions and new living patterns/lifestyles. Many of these solutions will come from companies that don't exist today or that must grow very fast in order to deliver these solutions. Other emission reduction in the short term might come from sectors that need to grow in order to provide solutions that other sectors have provided before, e.g. IT companies providing video conferencing equipment so that less flying is necessary.



In the future we can also assume that more investments in smart appliances and smart houses is needed, and this will result in less need for investments in power plants. While some power utilities will change their business model, others will not. Under such a scenario emissions will initially increase from those real estate companies providing smart homes, but at the same time emissions will dramatically drop from the power utilities. Over time low/zero carbon solutions will be available that allow also the providers of smart homes and other solutions to reduce their emissions.

For many large companies the same logic is true, some business units must increase their emissions in order to society, and other business units, to reduce their emissions. A climate positive approach can therefore also be useful within a company. This can help companies to see if revenues from high carbon business unit can be used to invest in low carbon business units with growth potential.

One way to explain the low carbon development with increased emissions among some companies it to use the concept of a carbon budget. Under the area that area that represent the 450 scenario (this is the level of CO2 that society probably must stay below in order to avoid dangerous climate change) we can see how the global carbon "budget" is starting peaking and then declining from around 2020. Even if the global trend should look something like this, the emissions from different companies will not look like this. On a market and in a society with technological development and innovation this budget should be allocated to those that use it to deliver the long-term goals. Building factories for energy efficient appliances, transporting batteries to a new generation of electric cars, etc are examples where initial emissions increase (and are

covered by today's way of measuring emissions), but emissions in society (that are not included) will decrease. Companies increasing their emissions obviously have a responsibility to ensure that these emissions will result in overall reductions.

Q5: Why should companies focus on emissions in society and set a climate positive target?

There can be many different reasons for companies and below are some of the most significant:

- **STRATEGY:** If a company sees growth potential in a low carbon economy and have important solutions a Climate Positive target can be an important part of a strategy. The reason for this is that even if the company's emissions might increase, the reductions the company contributes to grow even faster. This makes it possible for a company to focus on the most important contributions as well as communicate to key stakeholders (from customers to policy makers) that while their own emissions might grow in the short-term the emissions in society will be reduced.
- **INNOVATION:** If a company wants to explore different business models and solutions it is important to include all emissions, including the possible contributions to reductions in society. If a company only focus on reducing emissions they might avoid rapid growth in important new areas, e.g. a shipping company might increase emissions due to new solutions that allow goods to be transported by ship instead of airplanes.
- **CREDIBILITY:** To engage with policy makers, and other stakeholders, it is important to have evidence for what the company is contributing to and what kind of policies and measures that have the most significant effect on overall emissions. This will allow policy makers, and other stakeholders, to approach companies as solution providers and not only sources of emissions. This needs to be as standardized as possible and done based on accepted criteria

Q6: Why should policy makers and stakeholders focus on emissions in society and encourage companies to set climate positive target?

From society's and policy makers perspective it is important to not only focus on companies with large emissions, but also on those companies that provide solutions. A focus on only reductions among companies result in three significant problems.

- First that companies, and especially new/small companies, with solutions are often ignored if focus is on reducing emissions. These companies need to grow (and will initially increase their own emissions) in order to provide the solutions society needs. A focus on reductions therefore hampers innovation on the market.
- Second, it keeps society locked in the current industrial structure and sectors. As incremental reductions in current systems are not enough to reach the dramatic reductions needed to avoid dangerous climate change a "reduction perspective" and will result in a "high carbon lock-in" (i.e a situation when the investments result in a system where it is impossible/very difficult to go beyond the first reductions. E.g. investments in more energy efficient coal power plant will result in reductions, but also make society dependant on a solutions where the necessary reductions to avoid dangerous climate change are very hard to achieve as capital is locked in high carbon solutions.).

- Third, if focus is only on the reductions of emissions companies will support a view when companies are seen only as a problem, while a climate positive focus encourage a perspective where companies are can be seen as an important part of the solution.

Q7: Can emissions be seen as investments?

It is possible to argue that emissions can be seen as investments. In a society dominated by fossil fuel anything new, or anything that grows rapidly, will result in increased emissions when measured in the traditional way. If emissions are seen as investments the important question is what the impact over time will be. Building a factory for solar panels, designing a container that can transport food on ships instead of planes, transporting LED-lamps, research to develop enzymes for the third generation of biofuel, marketing for teleworking, etc all result in increased emissions directly. All of these will however result in significant reductions if implemented in a strategic way. The direct emissions from the company can be seen as an investment and should be seen in relation to the result in society. Using a total emission approach and setting climate positive targets allow companies to make strategic reductions that result in the kind of solutions society needs, instead of only focusing on their own emissions.

Q8: Does a focus on a company's impact on society and becoming Climate Positive reduce the need for reductions of a company's own emissions?

No. First, many of the reductions in society are linked to reduced emissions (especially reduced scope 3 emissions). For example when helping suppliers that also produce for other companies the reductions are multiplied when a total emission approach is used. Second, the climate positive result is the positive contributions in society minus the own emissions, so reductions of the own emissions result in an increased climate positive result.

As always transparency is important and the reporting of positive and negative contributions should be separated from the reporting of the own emissions.

Q9: Can a climate positive target be used for "green washing" and hide dirty companies?

Everything can be misused and there will most certainly be cases where less serious companies will try to use the concept of climate positive to distract from their actions. Below are some of the ways that companies can use the concept in a bad way and also suggestions for how it can be avoided:

1. **PROBLEM:** It can be used in a dishonest way by making assumptions that few would agree with.
SOLUTION: Transparent system where all assumptions are provided and over time develop guidelines for suitable assumptions
2. **PROBLEM:** The company only pick the positive contributions, cherry-picking, and ignore their negative contributions.
SOLUTION: A comprehensive system where all significant impacts are calculated

and presented in a transparent way. The company should also allow for stakeholder input regarding their choices of contributions to calculate.

3. **PROBLEM:** It can be used to highlight short-term gains that do not contribute to long-term sustainable reductions.

SOLUTION: This is not only a problem for “climate positive” but for all reduction targets. To disclose the strategy for long-term societal reductions is therefore important

4. **PROBLEM:** It can be used by companies that today have their problems in other areas beside climate change to divert focus from the areas where they probably should focus more of their attention.

SOLUTION: This is a general problem with sustainability work where companies with problems in other areas, such as toxic pollution, water or human rights sometime communicate a lot around climate change. For all companies an assessment of where there most significant impacts are is important. All relevant stakeholders should be allowed to provide input.

Q10: What methodologies are used to calculate the impacts on society?

The same, LCA, methodologies that are used to calculate the internal emissions and that are used to calculate CDM projects and other initiatives that result in reduced emissions. But new methodologies with focus on the service rather than the product is necessary to develop as well. This is particularly true when the “positive” approach is extended to other materials that will be needed to provide services. As companies shift towards providing services instead of products and governments begin to encourage sustainable ways to provide a service instead of improving existing technology this will increase the urgency for such methodologies.

Q11: How should positive contributions be reported?

For a companies own emissions different system to measure companies contributions to emissions have been developed, e.g. GHG-protocols scope 1,2 and 3 emissions. For positive contributions no such system exists today.

Any positive contributions should therefore be reported in a transparent way where all relevant assumptions and data are provided. The positive contributions should be separated from the emissions from the company. If different categories of positive contributions are used there should also be separated the same way as Scope 1, 2 and 3 is separated.

In the same way as for traditional reporting the positive contributions should be verified by an independent third party.

Q12: Will society impact/ climate positive reporting become standard for companies in the future?

In one shape or another it will probably become standard, at least for companies that contribute to significant reductions in society as they have an incentive to report these reductions. Already the leading institution for collecting data about CO₂ from companies, Carbon Disclosure Project (CDP), includes a question that allows for

companies to report the positive contributions. Below is question 14 from the CDP questionnaire 2009.

14. Emissions Avoided Through use of Goods and Services: (New for CDP 2009)

14.1. If your goods and/or services enable GHG emissions to be avoided by a third party, please provide details including the estimated avoided emissions, the anticipated timescale over which the emissions are avoided and the methodology, assumptions, emission factors (including sources), and global warming potentials (including sources) used for your estimations.

The GHG-protocol is exploring ways to allow companies to report reductions and so is Global Reporting Initiative (GRI), the de-facto standard for Corporate Sustainability and CSR Reports. A number of investors have also begun to explore how they can identify and measure companies' positive contributions.

Q13: How can double counting be avoided?

By ensuring that systems exist that keep track on the emissions from companies a system that avoid double counting will be easier to implement. This will allow two systems to exist in parallel, one where companies report their own emissions, and another where companies report how they help others reduce emissions. By linking the reported own emissions to the reported reduced emissions in society a system where double counting of the reduced emissions can be strengthened.

E.g. When company A report scope 1 emissions due to lighting that use incandescent lighting it is possible for this company to verify that the purchase of CFLs/LED lights from company B helped them to reduce their scope 1 emissions. In this way company B can keep on reporting scope 3 emissions from the use of the lights, but also report the savings generated when CFL/LED's substitute incandescent lights. These two numbers would be reported separately. This allows a company to give a more current account of their impact in society and understand their contribution to a low carbon society. It also ensures that no other company can claim that they helped company A to reduce the same emissions.

In the same way company C have high emissions in their supply chain due to the need to fly their goods. When they get help from company D by moving much of their goods to ships they company C will report reduced scope 3 emissions and company D can report that they helped company C reduce their emissions. This allows company C to demonstrate that their investment in shipping is a low carbon solution, even though company D's own scope 3 emissions will probably increase due to the increased amount of shipping.

Q14: Is there different ways to deliver reduced emissions?

In the same way as traditional reporting include different categories (Scope 1, 2 and 3) positive effects on society will take place in different ways. Today four different categories are often discussed. These can all be delivered through products and services, information or a combination of both:

1. Low carbon services delivery: Selling low carbon solutions

By providing low carbon solutions a company can help reduce emissions in society. An example is a company that sell renewable energy equipment, like solar panels. When these panels are used in situations where fossil fuel is used to generate electricity emissions are reduced. In the same way an IT company could provide smart meters that allow for increased energy efficiency, laptops that allow for flexible work and videoconference equipment that reduce the need to fly. A transport company can provide solutions that allow society to ship goods instead of flying. A biotech company can sell enzymes that allow people to wash at lower temperatures with the same result. A retailer could sell equipment that help customers to eat more climate friendly meals, sell furniture that makes flexible work possible, or provide solutions, like LED lights, that help the customers reduce their energy use.

2. Market transformation of producers: Getting other companies to change

By demonstrating market leadership a company can transform markets. Development of new solutions that result in a broader shift in how society provide certain services or scaling up production in order to decrease prices can lead to changes in the whole sector. Bringing down prices on energy efficient lighting can help all retailers that sell energy efficient lighting to move faster to low carbon solutions. A transport company that invest a technology that allow goods from flights to shipping can encourage other companies to follow. Companies leading such development should be rewarded as the savings in society is due to their leadership.

3. Market transformation of users: Indirect increase of low carbon solutions

Companies that help support low carbon lifestyles in the way they do business . How a company sell something is separated from what they sell as this is “low carbon service delivery”. For example, a company that support the use of public transport to get to the stores can help a broader use of public transport and thereby reduce emissions in society. Another example is a company that help customers use e-commerce as a way of buying products and thereby contribute to a wider increase in use of e-commerce in a way that reduce emissions in society. These savings happens as the company’s business models encourage more low carbon lifestyles. Broader campaigns that inform users of new opportunities can also result in increased use of low carbon solutions.

4. Net positive value chain contribution: Net producer of zero-carbon energy

A company can become a net producer of renewable energy that can be sold back to the grid, or provide renewable energy in the form of biofuel or other energy carrier. This can happen in various ways, for example;

A. A manufacturer/supplier shifts business model. Instead of using fossil produced electricity from the grid the company starts to produce electricity and heat using renewable energy that it can sell electricity back to the grid.

B. A store shifts from using coal power to renewable energy, like wind or solar, and becomes a net producer of electricity that can charge electric cars or can be sold back to the grid.

In the same way as one company’s scope 3 emissions is another company’s scope 1 emission there can be different kind of climate positive impacts. When company A

demonstrates market leadership (by lowering the price on LED on the whole market for example) it will help company B to deliver low carbon service delivery. This is not as the reductions are claimed only once under each category.

Q15: How much of reductions in society can different companies account for?

As reductions in society often are due to the actions of more than one company it is important that different companies don't claim the same emission reductions. This is a question that will have to be resolved on a voluntary basis until governments develop guidelines or companies' creates voluntary standards that clarify how the allocation between different companies should look like.

To start with it is important that the company calculating positive impacts in society communicates this impact to those the company is helping reduce emissions this will ensure that those being helped reduce emissions can verify that the emission reductions have taken place and that the reductions are calculated only once. As the company/government/institution/individual is the "owner" of the emissions they can ensure that the same emissions are not claimed more than once. In B2B relation (such as between a retailer and a supplier) is easy to ensure as it is often systems to track the emissions and the number of relations are limited. For companies helping to reduce emissions among customers/citizens it is more difficult and indirect measures might be necessary. The Japanese government has explored systems that could be used for allocation of GHG reductions. Transparent reporting will be key.

Q16: What is the difference between "Climate Positive" with a total emissions approach" and "Climate Neutral"?

To be climate positive with a total emission approach is to measure all the emissions from a company (Scope 1, 2 and 3) and then see if the reductions in society from the services the company provides are larger or smaller than all the emissions from the company

Climate Neutral is an approach when a company buys emission rights to compensate for the emissions it produce (often only the own emissions, .ie. scope 1-2). It does not say anything about how sustainable a company is or not and when only scope 1-2 is included it is not even giving information about the impact of the company. The quality of the "credits" that a company buys are usually hard to verify and many of the existing systems today have been shown to not reduce the emissions they claim. Many climate neutral schemes also try to provide the lowest possible costs for the reductions they sell and this result in projects that are of dubious long-term value. By buying emissions reductions outside the company it is also easy that different kind of emissions are mixed. A company with emissions from a coal power plant might buy forests and thereby buying an unsure reduction (the forest can burn) in exchange to keep on emitting and supporting further investments from a source that will make society more dependent on fossil fuel.

Q17: Are there any companies calculating positive impacts already today?

A number of companies have provided initial calculations in this area. Examples include:

1. China Mobile 2. Ericsson 3. BASF 4. Novozymes 5. HP 6. ICEHotel 7. SKF 8. NEC 9. Dow
10. Siemens 11. GE 12. Cisco 13. IKEA