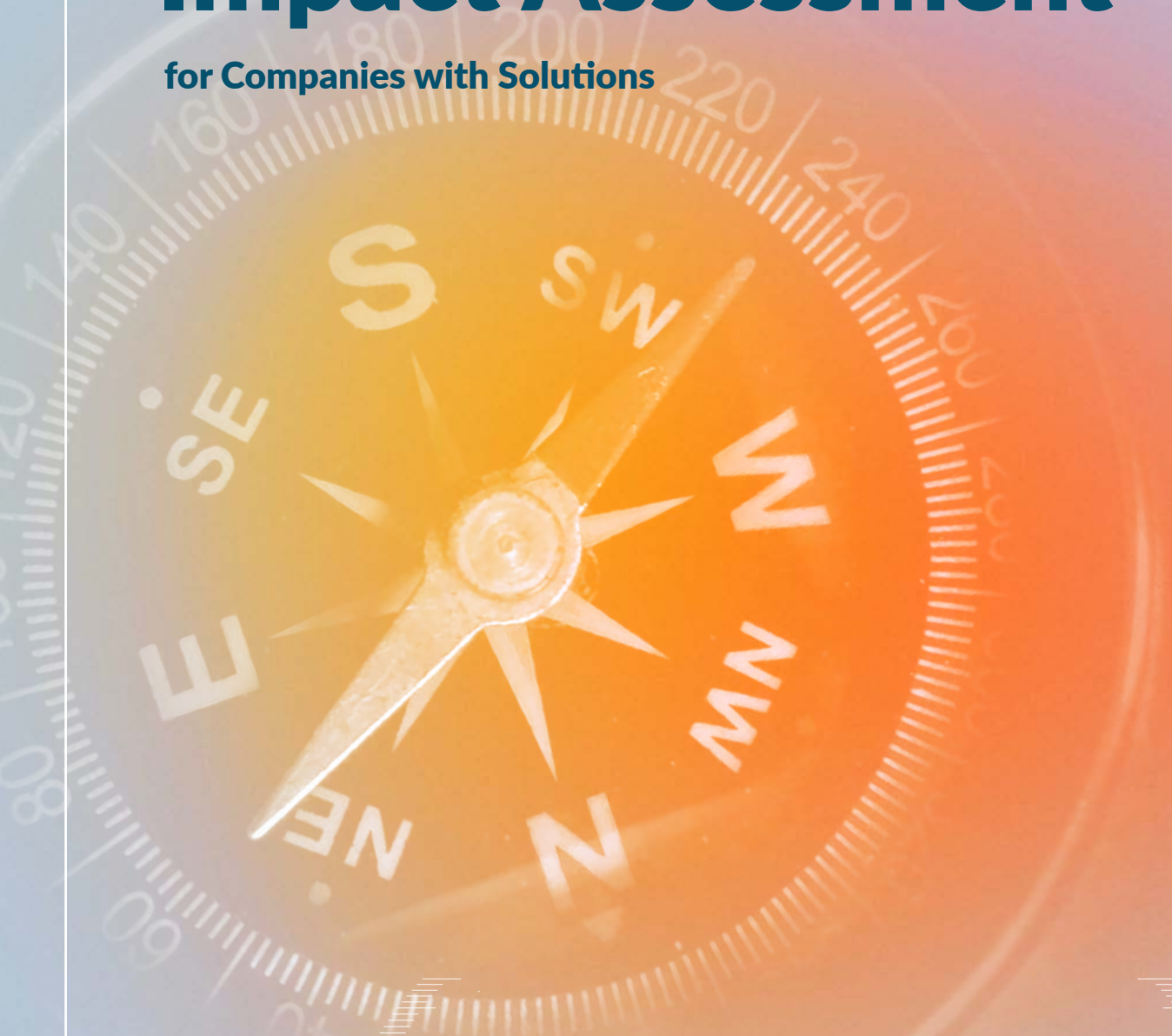
Full Climate Impact Assessment

for Companies with Solutions



Beyond Companies own emissions (scope 1–3) to Solution providers impact in society with focus on Human Needs (Avoided Emissions)

MISSION INNOVATION | NET-ZERO COMPATIBLE INNOVATIONS INITIATIVE

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Full Climate Impact Assessment

Table of contents

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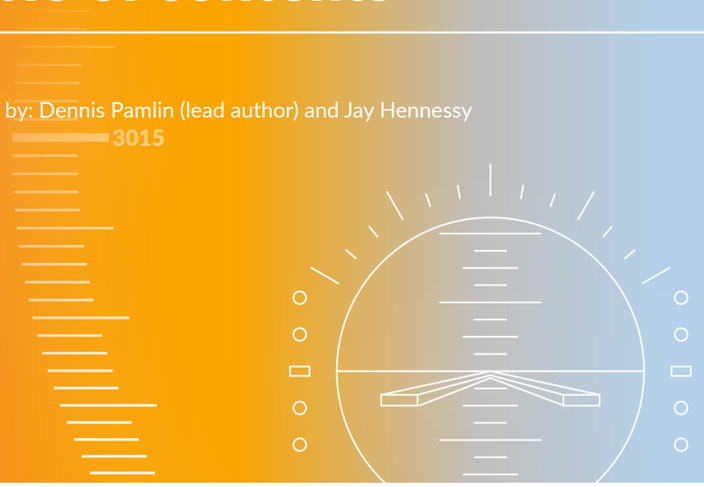


Summary and context

The need for global sustainability, combined with the opportunities provided in the fourth industrial revolution, requires climate assessments that cover more than just emission reductions from current value chains. Transformative system change will happen due to the fourth industrial revolution, and must happen due to the need for global sustainability. Hence, it is time for an expanded climate and innovation agenda.

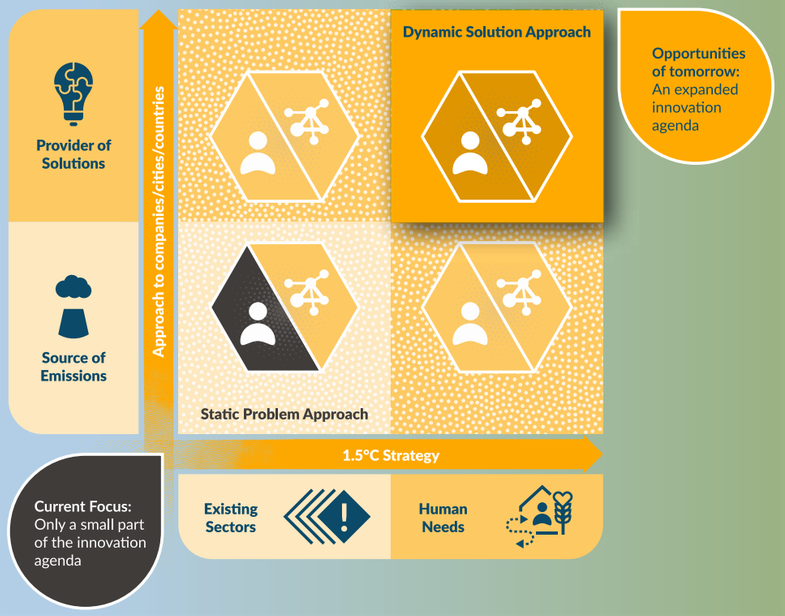
12 benefits and 4 stakeholders

The four-step approach for a full climate impact assessment presented in this document builds on the work by Mission Innovation and its partners over the last four years to provide tools for an expanded innovation agenda that supports a dynamic solution approach.[1] With an increased understanding that transformative system change is needed,[2] companies as solution providers need to be supported, and avoided emissions can help support an expanded climate and innovation agenda.[3] This four-step approach was developed to provide guidance for companies and other stakeholders who want companies to deliver relevant solutions that help deliver on human needs in a sustainable way.

With so much discussion about climate leadership among companies it might come as a surprise that few companies currently assess anything other than their negative impact over the value chain (e.g. scope 1-3 emissions), and even more surprising that the aspect that almost always is missing is the positive impact in society due to the solutions companies sell. The very reason a company exists is thereby ignored by most assessment tools, initiatives, and reporting criteria.[4]

There is obviously nothing wrong with a particular and partial focus, but the particular and partial focus dominating today is significantly undermining innovation and ignoring companies as solution providers. The static problem approach, with a narrow focus on companies only as a source of emissions, assumes that the main driver for climate action is compliance related to scope 1-3 emissions, and a lot of effort is spent on reporting, but this is just a small part of the different roles companies can play.

The reason for the current static problem approach can be found in the history of political responses to climate change. In the early 1990's when many of the existing tools and initiatives emerged as a response to the Climate Convention in 1992[5] and the Kyoto Protocol in 1997,[6] the world was dominated by large fossil fuel companies, and we lived in a pre-digital age with relatively slow innovation. The initiatives launched during this time



therefore almost exclusively focused on delivering incremental improvement[7] and focused on how large emitters in the Global North could optimise their operations.

During the 1990's a static reduction cluster evolved with regulators only relating to companies as sources of emissions, institutional investors only asking companies for reduced scope 1-3 emissions, consultants helping to reduce scope 1-3 emissions or sell offsetting to companies, and companies setting up CSR departments to deal with reporting and actions to reduce scope 1-3 emissions.

This static reduction agenda is still dominant today even as totally new solutions have emerged, the need for global sustainability is the new political goal, many companies have emerged as solution providers (both existing companies that earlier only focused on their scope 1-3 emissions and a new generation of companies that started with a solution perspective), and leading scientific studies such as the IPCC reports clearly show that more than improvements in existing systems are required for global sustainability.

The goal since the climate meeting in Paris in 2015 is to deliver a 1.5 °C globally sustainable development path, something that requires a shift in focus from only reducing emissions from current systems to delivering sustainable solutions in a way that allows all humans to live flourishing lives. As most people on the planet emit very little and are far from living flourishing lives, the focus for climate action must shift from only "reducing emissions in existing systems" to "avoiding emissions by providing sustainable solutions to human needs".

Focusing on human needs and solution providers would support an innovation ecosystem with a spotlight on global sustainability that clearly makes the world a better place, rather than a risk reduction approach where polluting companies try to find innovative ways to report what investors and governments ask for, instead of developing solutions that society needs.

The difference between reduced- and avoided emissions in an expanded climate innovation agenda

As avoided emissions are sometimes used in the area of offsetting, or other accounting approaches with a focus on reduced scope 1-3 emissions, it is important to clarify the difference between the two terms from the perspective of an expanded climate innovation agenda.

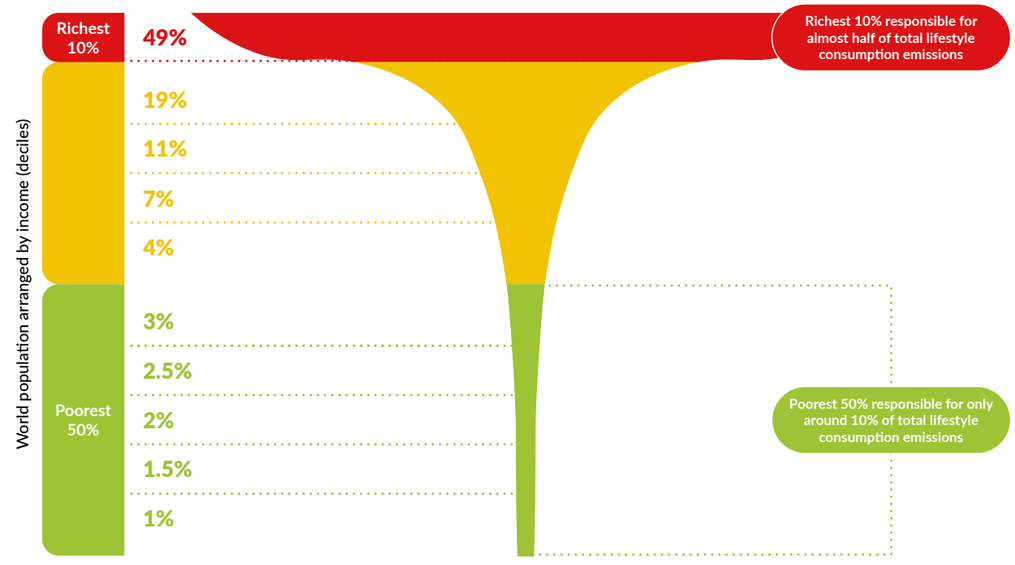
In an expanded climate and innovation agenda avoided emissions cover all reduced emissions, but also those emissions that are avoided when people, especially in the Global South, are provided with solutions that help avoid increased emissions.

With the current emission reduction focus by many industrialised nations and large companies to only focus on reducing emissions from existing systems, two opportunities are easily lost:

1 **Create incentives and tools that support investments in development and deployment of globally sustainable solutions that can be used in a world where 11 billion can live.**

2 **To support globally sustainable companies, especially start-ups, that can export solutions which deliver on human needs in a future where 70% of the world population is in Africa and Asia.**

Percentage of CO_2 emissions by world population

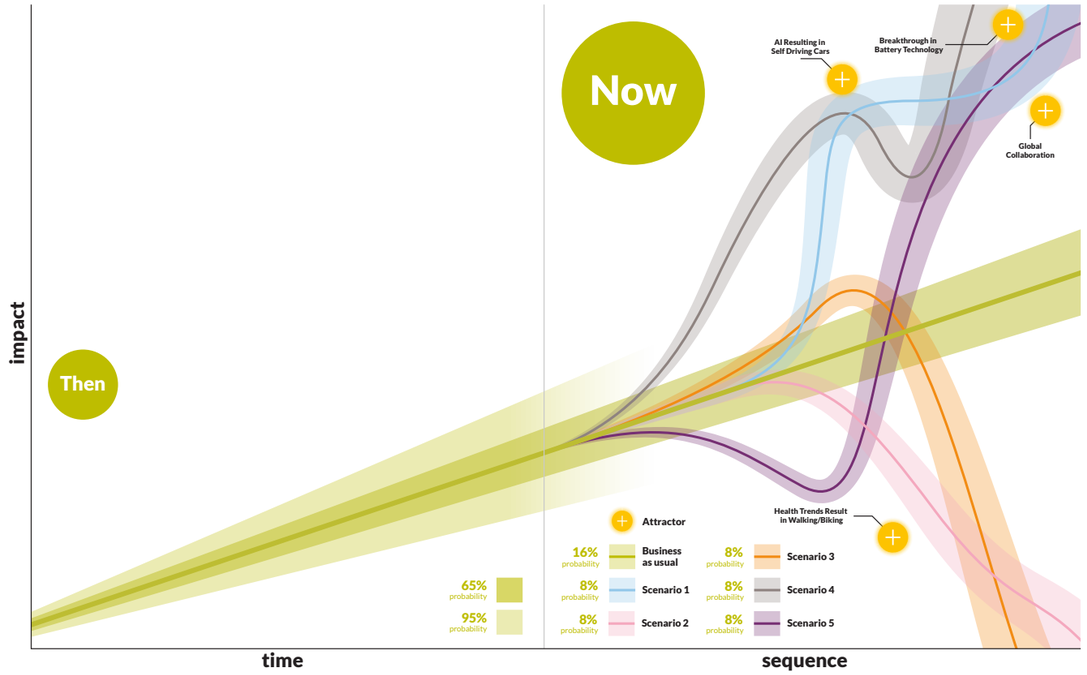


Looking at the emissions from different groups in society, as Oxfam has done through its champagne glass illustration,[12] makes it clear that only focusing on reducing emissions easily becomes a colonial approach where focus and resources are concentrated on the global north to protect current systems and divert much needed innovation and resources for developing sustainable solutions for an equitable future where everyone can live flourishing lives.

It is easy to forget how different the world is today compared with 30 years ago when the climate convention was agreed in 1992. The world wide web was launched in 1993 and most policy makers did not really know about the digital revolution until the late 1990's. Solar and wind were seen as pie in the sky ideas and were publicly mocked, and the ideas of electric vehicles, self-driving, sharing, dematerialisation, teleworking, virtual conferences, streaming of music, digital books and plant-based food were seen as science fiction.

If the current dominating strategies, with a static problem approach, would have guided innovation in 1990 many of us would work on fossil free typewriters today, not laptops and smart mobile devices. Compared with the 1990's the technological development and business model innovation of today is accelerating even faster, and the next 30 years are likely to be much more disruptive. The difficulty with the static problem approach undermining innovation is thereby increasing by the day, and the need to expand the climate and innovation agenda is becoming urgent.

Reducing the impact from existing value chains is obviously one important part, but such an approach in isolation tends to ignore, divert resources from, and undermine new smart globally sustainable solutions and should not be the default approach in the 21st century, especially not after the Paris Agreement and the Sustainable Development Goals (SDGs) that clearly call for a globally sustainable development path.



Five problems with a partial static problem approach that only focuses on value chain emissions, e.g. scope 1-3 emissions, are:

1. Ignore and undermine necessary innovation

The static problem approach focuses on how current systems, regardless of their purpose, can report reduced emissions rather than asking what society really needs.

Solution: Focus on Human Needs and the capacity for companies to use this approach as a driver for revenues. While reporting positive impact is one aspect, the focus should be on supporting ways of allowing companies to integrate positive societal impact into their strategy development and ensure that transparency exists in the system so that customers, legislators, and others can access and use high-quality independent data to guide action to ensure global sustainability is profitable.

2. Ignore and undermine solution providers

The static problem approach focuses on the big emitters instead of asking what parts of the innovation ecosystem can deliver on human needs.

Solution: Include solution providers and those supporting them, especially purpose driven start-ups together with stakeholders in the innovation ecosystem that are supporting them, such as incubators and accelerators.

3. Ignore and undermine enablers

With a static problem approach the principal response is start/end-of-pipe solutions, with CCS and extreme growth of renewables, including biomass, as the main solutions while keeping inefficient and outdated systems that are unsustainable.

Solution: Focus on system solutions and especially enablers that shape those systems, from legal actions, marketing, business model innovators, media and cultural innovators. These enablers shape the way we think, what we see, how we act, and influence what we see as possible. While new technologies are important, enablers, such as investors, PR companies, legal companies and media, are absolutely necessary to deliver transformative system solutions.

4. Contribute to creative accounting rather than business model and product innovation

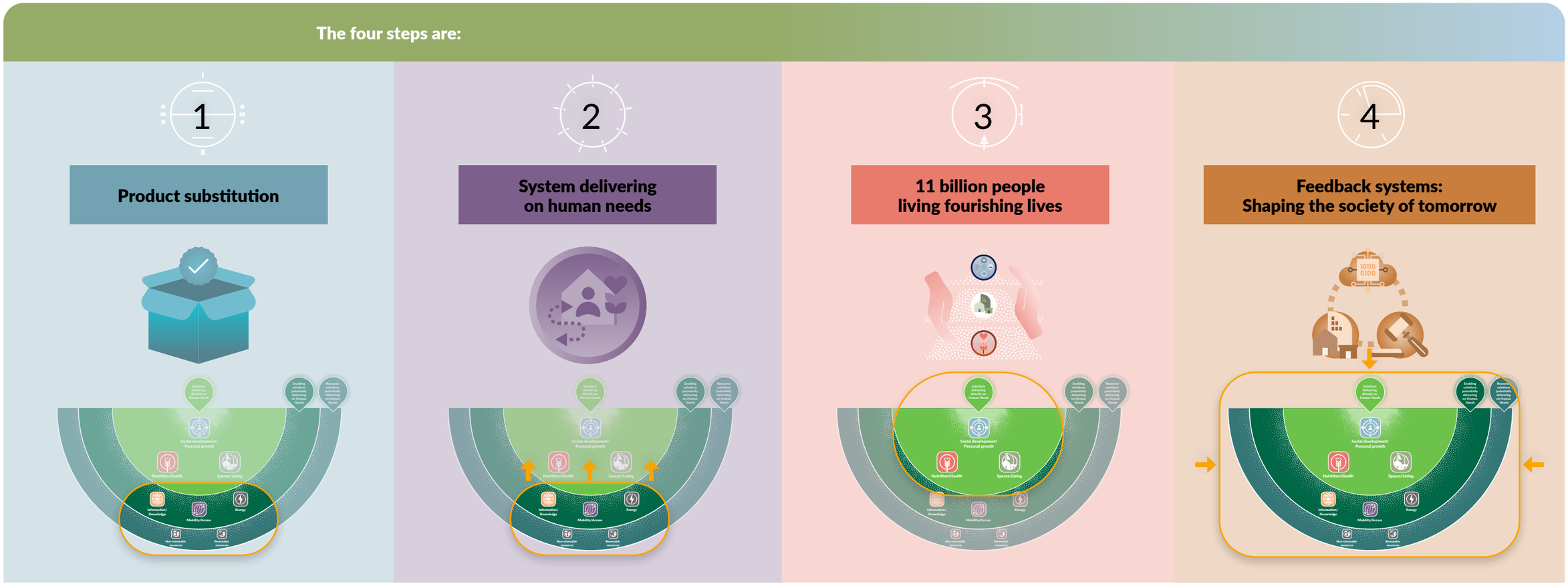
The static problem approach has established a compliance structure in many companies when it comes to the climate challenge. Instead of using the need of sustainable solutions delivering on human needs in society, most companies only focus on how they can claim reduced emissions in ways that require as little change as possible.

Solution: Both the senior management team and investors should support those people in the company who are in charge of strategy development, product development and other parts that can help the company deliver what society needs, not just develop a less bad version of what they currently do. In many cases the development of two strategies, one climate risk strategy (with focus on reducing scope 1-3 emissions), and one climate opportunity strategy (with focus on delivering solutions on human needs that are globally sustainable) can help support companies as solution providers.

5. Focus on the sectors of yesterday instead of the clusters of tomorrow

The static problem approach has a reactive outlook and asks how current sectors can reduce their negative impact. They also tend to try to predict future patterns in order to incrementally adapt existing systems while maintaining the status quo rather than exploring the smartest solution. However, to provide sustainable nutrition, living, health, education, art and science will require new clusters of stakeholders.

Solution: Shift focus from reducing problems in existing sectors to the emerging clusters needed to deliver globally sustainable solutions to meet human needs. The 21st century innovation ecosystem should promote "dynamic clusters", i.e. moving away from static monoliths to flexible configurations that can bring new actors into the fold more dynamically.



Making things even worse, the static reduction approach has created an entire industry focused on how companies can claim emission reductions rather than delivering the solutions needed for people to live flourishing lives. Instead of technical-, economic-, legal-, business model- and policy-innovation, many companies and consultants spend significant resources on creative accounting, using offsetting and other tools that are distracting from what is actually needed, i.e. delivering sustainable solutions for human needs.[8]

With a static problem perspective, the best a company can aim for is to reach (net-)zero, something that has resulted in creative accounting and a demand for carbon credits that are easy to communicate and calculate, as those have allowed companies to use such credits to communicate a "climate leadership" by claiming net-zero, or similar. This, at the same time as they continue to sell unsustainable services, such as fast-food meat, fast fashion and weekend shopping flights. The static approach encourages accounting for decarbonisation of the supply side of fast-food, fast fashion and shopping flights, without considering if it is delivering a globally sustainable solution for human needs, or just trying to limit the damage. An inherently unsustainable service that reduces emissions by 90% is still an unsustainable service.

To avoid the above challenges and support accelerated innovation this report presents a four-step climate impact assessment to assess the full climate impact of companies. The assessment structure is based on the assumption that the world needs to stay below 1.5 °C, do so in a globally sustainable and equitable way, and that a company can support or undermine such a future.

The key focus and benefits from the four steps include:

1. **Product substitution: Assessing the product/service sold**
   The first assessment step broadens the focus beyond the product a company provides and how those are produced. In step one the company's product is compared with the other products on the market that it will, or potentially could, substitute. Instead of only looking inwards at the company and its products in isolation, like many current climate assessments that only focus on the company's own reductions, it provides insights into the actual impact in society.

   In many cases this step is basically the company's scope 1-3 emissions but assigned to the products and then compared to the scope 1-3 emissions from the current solution. If the company is substituting a more carbon intensive product the result is avoided emissions, and if it adds a product where none exist the result is the opposite of avoided emissions, added emissions.

   Compared with a traditional scope 1-3 assessment the focus is on the impact in society not the company's relative emission changes. Hence, a company that is reducing their own emissions can contribute to increased emissions in society in two ways:

   a. **By substituting a product with even lower emissions.** For example, a car provider can deliver an electric car instead of a fossil car and reduce its scope 1-3 emissions, but if the electric car is substituting a bike the result is increased emissions in society. Over time this can be even more significant as the car company might

> “Let’s decide that our job is to fight for good in the world. I’d love to see all these amazing resources go to work on that.”
>
> — Aaron Swartz, 1986-2013

undermine smart city planning where walkability and the use of digital solutions, both virtual meetings and 3d-printing, reduce the overall demand for vehicles.

b. **By adding additional consumption.** This can be done in a sustainable way to help people move out of poverty in the most low-carbon way and with a strategy for 1.5 °C compatible solutions. It can also be done in an unsustainable way by adding additional consumption that is unsustainable. For example, the fashion industry marketing that resulted in an extreme increase in consumption, with extremely short lifetime and use of low-quality garments, with rapidly increased emissions as a result. Even if these fast fashion companies reduce the impact from individual garments and promote “circularity”, they have a fundamentally unsustainable business model.[9]

While this first assessment step is important, it also has significant limitations. By focusing only on product substitution, the high carbon lock-in solutions can be promoted unintentionally, i.e. when a slightly less unsustainable product is substituting a slightly more unsustainable one in a way that makes further reductions difficult. Even more problematic and a more fundamental challenge with step one, and science based reduction targets for scope 1-3, is that they ignore the system they are part of.

2. **System delivering on Human Needs: Assessing the system the product is part of when delivering on human needs**
The first assessment step assess product substitution and this is important, but in a time of rapid change and when transformative system changes are required for global sustainability, there is also a need to assess system changes. Without assessments on a higher system level the focus will be limited to improvement in existing systems. The second assessment step therefore expands the system boundaries to the ecosystem that the products are part of when they deliver on human needs.

In most assessment frameworks it does not matter if the “green steel” is used for oil platforms delivering oil to SUVs, or if it is used to build solar panels for schools.

Establishing the system delivering on human needs requires the company to understand how people are benefitting from their products. For a provider of garments different systems can be identified. The wardrobe can be selected as the system delivering on human needs. Such an expansion clearly shows the difference compared with traditional product assessment, which focus only on product substitution, as it does not distinguish between:

a. a garment provider that is promoting fast fashion with extreme over consumption with large wardrobes and garments only worn a few times, and

b. a garment provider that promotes small wardrobes with long-lasting garments that also support and encourage sustainable lifestyles.

The system assessment is meant to guide business model innovation and support more systemic changes. It allows the company, as well as investors and other stakeholders, to ask questions about how much the company knows about its actual impact in society and how future-proof the current business model is. A company such as a tire provider does not get any incentives to shift the focus away from SUVs to bikes when only product substitution is the focus, but with a system change perspective this becomes part of the assessment and can trigger new innovations where the company moves into sharing, sustainable data gathering, etc.

3. **11 billion people living flourishing lives: Assessing how human needs are met and compatibility with global sustainability:**
The third, and final step that is quantified, shifts the focus away from the company and the clusters it is part of to people in society.

Rather than focusing on how a specific solution is produced and distributed this assessment focuses on how human needs can be met in a globally sustainable way. This allow companies to work backwards from the impact of different lifestyles and what is needed to meet human needs, rather than try to find ways to sell more of its current products. It also allows the company to better understand how human needs can be met in new ways and develop strategies to benefit from sustainable trends rather than try to undermine them.

In the third step an “11 billion filter” that focuses on how we can provide flourishing lives for 11 billion people while also delivering exponential emission reduction is used

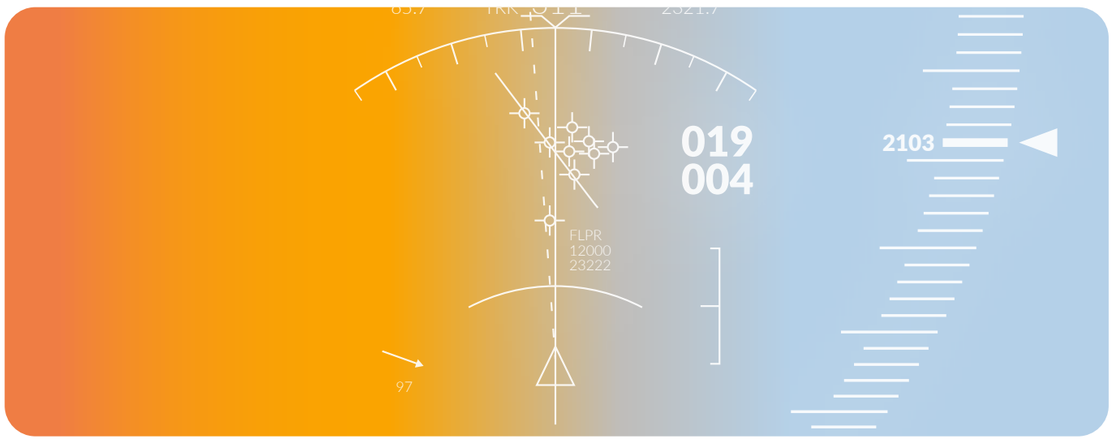
to establish a reference for global sustainability. This filter asks if the current way of meeting human needs can be scaled so that 11 billion people can live flourishing lives. While addressing climate change it also ensures that human needs are met in a way that leads to emissions being avoided, without requiring excessive amounts of natural resources.

With a focus on human needs and flourishing lives for 11 billion it becomes clear that many of the current systems have significant problems as their climate strategies only work if most people on the planet stay in poverty. Even more problematic is that their strategies and lobbying can contribute to establishing a society where it becomes impossible for people to move out of poverty as there are not enough natural resources available due to over-consumption from existing unsustainable systems.

An example is airlines and travel agencies, which cannot just create new clusters that assume existing (or even increased) levels of flying, while substituting fossil fuels with biofuels, as it is not possible to shift current fuel demand to biofuels without destroying biodiversity, and making it harder to find land to grow food.[10] With an 11 billion filter it becomes clear that the natural resources required to move people with airplanes makes it one of the most resource inefficient ways to deliver mobility and access that exists. The step three assessment provides data for companies, investors and policy makers that encourages them to explore better ways to deliver on human needs, such as including trains and virtual meetings in their offerings, or at least to run their business so that people use the most resource efficient solution to meet their need.

This human need approach is a significant challenge for many. For example, it indicates that truck and car companies need to become *access* companies, not only providing vehicles as a service but embracing walking, biking, smart city planning, tele-working, e-health, etc. to become part of the solution rather than only slightly less of a problem. They also need to ask what they are providing access to with their vehicles. Are they helping people get access to unsustainable fast fashion and fast-food, or globally sustainable lifestyles and nutrition? Steel companies need to find ways to assess how they can meet human needs by providing steel that helps ensure sustainable education and health, rather than production of more oil platforms and SUVs.

This third step is a challenge for companies that are disconnected from human needs and have an incremental approach to innovation, but it is also a significant opportunity for many dynamic and purpose driven companies, including many start-ups, that are using the need for globally sustainable solutions as a driver for innovation. This step makes it harder to see a climate offsetting fast-food provider as a climate leader, but easier to see a provider of healthy plant-based food that also supports sustainable lifestyles as a solution provider that is needed for a future where 11 billion can live flourishing lives.



4. **Feedback systems: Shaping the society of tomorrow**
   The fourth step uses a traffic-light system to assess how the company is shaping the future. This assessment helps companies to understand their role in a rapidly changing society and how they can affect the rules of the game in support of a sustainable future. The assessment covers three feedback levels: the product, the infrastructure, and the institutions. In this way the assessment provides data that can guide companies to be an active part of how society evolves beyond incremental improvement in existing systems.[11]

With a growing interest in companies as solution providers the total climate impact assessment allows companies to approach innovation and sustainability from a dynamic solution approach where climate opportunity innovation is at the core, rather than the dominant static problem approach that only covers climate risk innovation. While each of the four steps provide valuable insights, it is often together that they are most powerful.

Four areas of strategic importance gained from the combined four steps are:

There are also potential challenges with the steps in a full climate impact approach that should not be ignored, especially when stakeholders try to use a static problem approach to interpret and communicate partial findings from a full climate impact assessment. This document lists four challenges under the heading “Warning”.

1. Impact

Providing insights into what the most important impacts from the company are, from the perspective of what society needs to be able to deliver on human needs.

2. Strategy

Provide guidance for companies that want to use the need to deliver flourishing lives as a driver for innovation and explore the opportunities of becoming a purpose driven company that links sales to a positive impact for people.

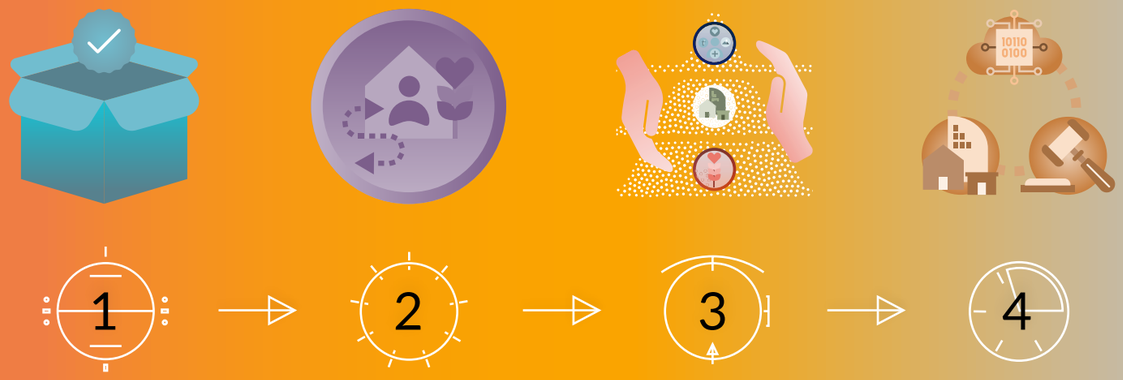
3. Stakeholder relations

Identify existing and possible clusters that are needed to deliver sustainable solutions compatible with a future where 11 billion can live flourishing lives.

4. X-Factors

Perhaps the most important opportunity is the potential to identify sustainable disruptions and transformations and how the company can contribute to sustainable disruptions and transformations.

1. Full Climate Impact Assessments of Companies: A Four-Step Approach



The four-step full climate assessment builds on Mission Innovation's work to develop a framework for avoided emissions and 1.5 °C global sustainable compatibility, as well as collaborations with different stakeholders implementing an expanded innovation agenda.[13] To capture the full climate impact of a company in the 21st century and allow solution providers to assess their impact in relation to what society needs, four assessment steps are needed.

Step 1

On the basic level the focus is on the product/service sold. The assessment of an individual "Product/Service" is done in relation to the products/services on the market. The result is an assessment of product substitution.

Step 2

An assessment that is limited to only product substitution (Step 1) have two main problems.

1. First, product substitution assessments tend to ignore many new and more resource efficient ways of providing the services. For example, a product substitution tends to only include similar products, such as a substitution of fossil cars with electric cars, ignoring solutions like drones, 3D-printing, virtual meetings, and smart city planning for walking/biking.

2. Second, product substitution assessments often ignore the actual impact in society. For example, when a plastic package is substituted for a sustainable paper package it looks like a significant contribution from a product substitution perspective, but a system perspective broadens the scope to see if the product is is used in an unsustainable fast-food restaurant system selling unsustainable meat burgers, or if it is supporting a system providing resource efficient, plant-based, healthy and globally sustainable solutions for nutrition. In the first case a more sustainable packaging is a distraction from the urgent need to support a transition to a sustainable food and nutrition system.

This system assessment is radically different compared with the way most climate assessments are done. On this second assessment level the "System of use and delivery on human needs" is compared with systems of use and delivery on human needs on the market. Instead of assessing the product/service in isolation, the system that the product/service is part of when providing for human needs is compared with the systems providing for the human needs on the market.

For a provider of garments, the wardrobe can be defined as the "system of use" as this is the "system" that garments belong to when people use them. This unit allows the assessment to better understand the sustainability of the company, as it captures the amount of garments and quality of garments that make up the total impact of the wardrobe, instead of just assessing individual garments. For a provider of tires the vehicles the tires are used on is the "system of use" that is used to better understand the sustainability of the provider of tires.

Step 3

In the third step the focus is no longer on the company, but how human needs are met and the lifestyles in society. Here the company's impact on "Human Needs and Lifestyles" are assessed. Often marketing, apps and other collaborations are part of this assessment as few companies affect lifestyles just through their products/services. For a garment company, campaigns and marketing can, for example, support shopping as a lifestyle when people fly around the world just to shop and support a lifestyle not just with huge wardrobes with garments that are used just a few times, but a broader hyper consumption where meaning in life is measured in material consumption.[14] Another garment company may take the opposite approach and empower people to see value in reconnection to nature and find happiness in creativity and science rather than material consumption.

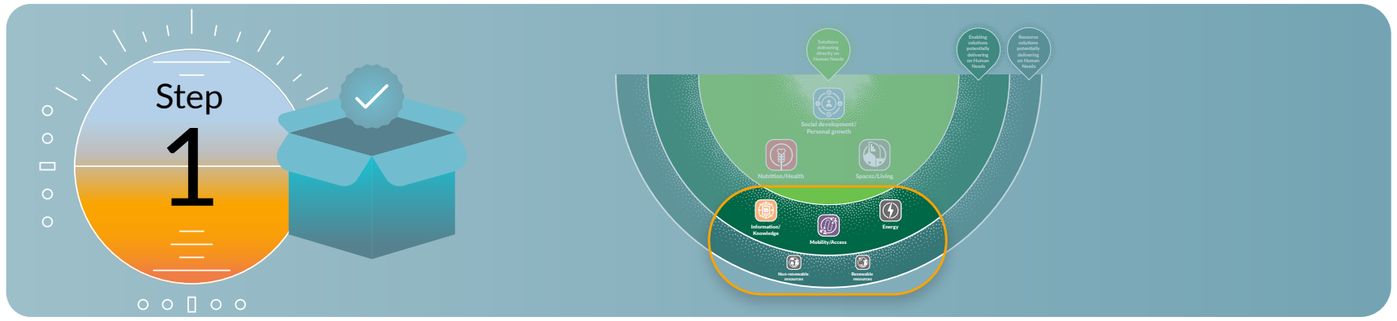
With a focus on human needs and lifestyles the third assessment step is necessary for any company that wants to make the world a better place for people, and especially for a new generation of purpose driven companies.

Step 4

The fourth assessment step captures the need for system change. While most assessments only use static, or best case linear, assumptions for change, the fourth step's focus is on feedback systems that the company contributes to in relation to "society, its values, and structures" in ways that allow for exponential change.

This assessment step assess how companies are changing the rules of the game.

Each of the four steps are presented in detail below.



1.1 Product Substitution

Question: What is the product being sold and what does it substitute, or what does it add?

The first step of assessment focuses on the product the company is selling and what products by other manufacturers it substitutes. If it is a new product that does not substitute any existing product the result is additional emissions in society.

Depending on the business model and product provided, the step 1 assessment can range from assessing a product at the beginning of the value chain, to a situation where the company provides a product together with a service that delivers on human needs. In the latter case the scope of the step 1 assessment becomes identical to the system that is delivering on human needs, i.e. a step 2 assessment. An example of what different business models result in is a company that sells a sensor that helps provide an optimal temperature in homes. For this company the avoided emissions are assessed based on how energy efficient the sensor they have is compared with the one it substitutes, or it can sell a full energy service system where they get paid based on the cost savings they contribute to while providing a comfortable temperature.

In most cases the step 1 assessment will be a product substitution assessment. This is also what most assessment initiatives for avoided emissions have focused on so far.[15]

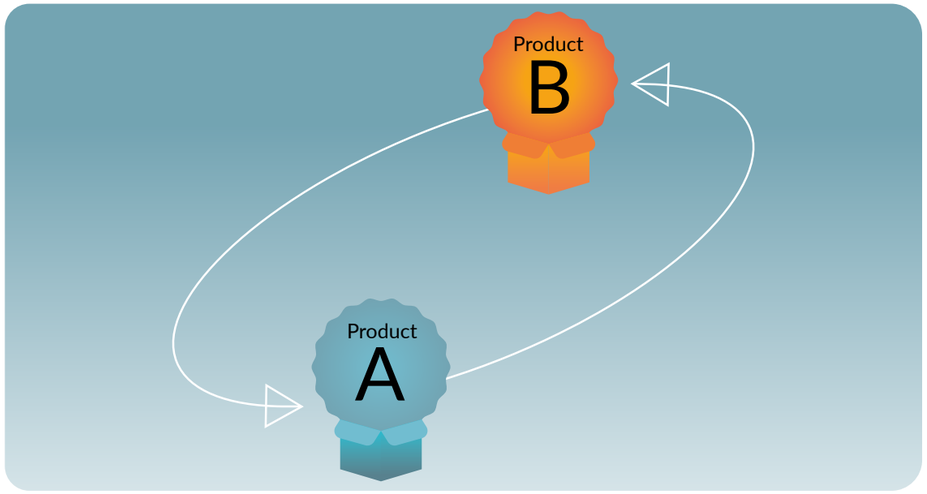
Step 1 Assessment

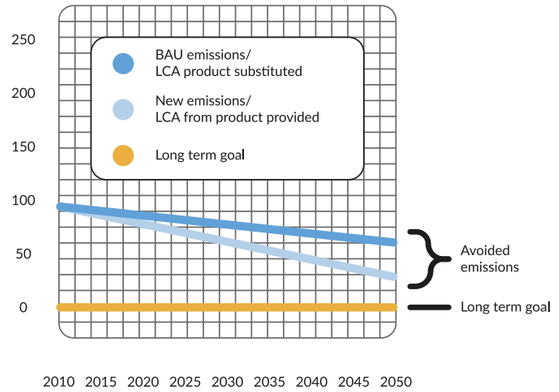
For step 1 assessments a life-cycle based assessment (LCA) of the new product/service and an LCA of the existing product the new product is substituting (BAU emissions) are used. The avoided emissions are calculated by comparing the new product with the one it substitutes.

While LCAs are currently primarily conducted to optimize products and systems, or just to provide information about a product,[16] a dual LCA is used to assess the avoided emissions.

A reference point in time is also required. For avoided emissions, 2030 and 2040 are often used as they link to key political targets and are not too far into the future for data to be available.

To ensure relevance for global sustainability, and also for comparison/benchmarking, a global scope is often used as a reference, even if the initial markets are much more local.





Assessment Cases for avoided emissions assessment at step 1

Step 1 assessments look similar regardless of what product is being sold as they compare the LCA for one product with the product it will substitute. To assess the avoided, or in the case there is no existing product to substitute, added, emissions the LCA emissions from the product is compared with the baseline, which is the amount of LCA emissions of the product it substitutes.

Case 1: Garment

The garment provided will be compared with other garments and the difference will be the avoided emissions, or added emissions, from product substitution.

Case 2: Tire

The tire provided will be compared to other tires and the difference will be the avoided emissions, or added emissions, from product substitution.

Case 3: Protein

The source of protein provided will be compared with other sources of protein and the difference will be the avoided emissions, or added emissions, from product substitution.

1.2 System delivering on Human Needs

Question: What is the system that the product from the company is a part of when it delivers on human needs and influences lifestyles? If the impact on human needs/ lifestyles is not known; what is the system, highest up the value chain and closest to human needs, that the product is a part of?

The second assessment step expands the scope from the individual product to the system of products and services that is providing a service in relation to human needs or, of if the impact on human needs/lifestyles is not known, the system highest in the value chain that is delivering a service in relation to human needs.

In a situation where totally new ways of delivering on human needs exist and many companies are trying to move from a product to a service perspective, a narrow product assessment is not enough.

By asking what system a product is part of when it delivers on human needs, the impact in relation to human needs can be established. People paying, directly or through taxes, for something is also where the ultimate willingness to pay exists. This willingness by people to pay for something is what many companies, investors and policy makers fail to identify. Instead, they tend to look at competitors in the same sectors. We see this limited perspective constantly repeating. From historic cases, like typewriter manufacturers failing to see the rise of computers with word processing, and Kodak failing to move beyond old films into the digital age, to current cases where car manufacturers fail to move beyond physical mobility, and steel/cement producers fail to move beyond a narrow product perspective by only focusing on “green” versions of current offerings, we see companies disconnected from what people need.[17]

Few models for sustainability and innovation address the systems needed to deliver on human needs, but a growing number do. The researchers behind IPCCs most sustainable pathways and consumption-based work have done work to assess changes needed to transform systems,[18] others with focus on how both social and environmental goals have begun to develop frameworks,[19] and with partners, Mission Innovation have developed concrete tools that link solutions to human needs.[20] With much work ongoing, the quality and quantity of models and data with focus on systems delivering on human needs will rapidly increase, but already today enough exists for action.

For many companies it is still a significant challenge to establish units of service for human needs, as they might be far down the value chain, e.g. providing lubricants or tires to machines that belong to companies that they do not know anything about. And if they know what that company produces, they might not know how that material/product is used in society.

As highlighted in the case of the car company lacking knowledge about its products’ impact on human needs, a step 2 assessment can be still be done by using generic data, such as the use of their vehicles in society.

For companies making generic and multifunctional products, such as steel, plastic, lubricants, nails, etc. assessments can be done based on statistics. For example, if a company sells a special steel then the different uses of that steel should be assessed. While the exact proportions of the use might not be available until greater transparency in the value chains exists, data is often available that can help provide information about the proportion that will be used in oil platforms, SUVs and land mines, and how much will be used for wind turbines, refrigerators and energy efficient buildings.

If the company currently lacks any knowledge about their impact on human needs, they can use a level 2 assessment to categorise different “systems of use” within three groups.

Group 1: Systems of use that are part of unsustainable systems that need to be phased out.

Group 2: Systems of use that are sustainable and should grow.

Group 3: Systems of use with multiple, or unclear, contributions, where many of the impacts can be a mix of positive and negative impacts.

The above approach can be used by many enablers that support many different companies and sectors, such as digital service consultants, management consultants and legal firms.

With a dynamic approach to avoided emissions, rather than a carbon snapshot that only assesses the avoided, or additional, emissions in the current situation, the company can also use the step 2 assessment to discuss future strategies to move towards areas where they contribute to sustainability. Instead of the climate risk innovation that dominates today, the four-step approach to a full climate assessment explores how business models can evolve and new solutions develop.

Current use of KPIs are based on a situation with slow and incremental changes where sector experts only compare companies within the same sector. From the perspective of investors, a company without knowledge of how it contributes to delivering on human needs should be considered a significant risk in a rapidly changing economy. With new ways of providing for different human needs rapidly emerging, knowledge about end-customers and how the company meets their needs is necessary. Investors and policy makers, together with companies and especially start-ups, should therefore explore ways to support increased transparency regarding the company's contribution to human needs and how sustainable it is.

A shift in focus to the system delivering on human needs also makes it clear that efficiency losses over the value chain must be part of the assessment, e.g. in clusters delivering nutrition more than 50% of the protein is sometimes lost in the process of delivering an actual value, i.e. delivering healthy nutrition.[21] In addition, such an assessment also allows for over-consumption assessments. In both cases it is not just the traditional agricultural sector, but also those promoting everything from certain menus, and sizes and designs of storage of food, to health experts promoting different diets, and lobby firms that try to shift focus from unhealthy diets to only exercising.

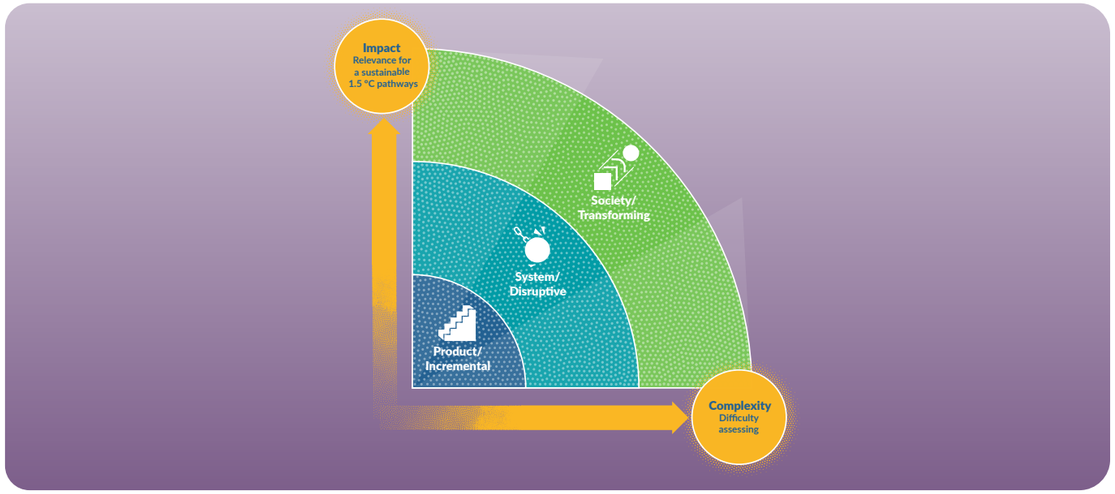
As the Obesity Health Alliance have stated:[22]

> *At best, junk food brands tying themselves to exercise is a deeply cynical attempt at market protectionism. At worst, it's spending massive amounts of money to profit from rotting teeth, childhood diabetes and human misery.*

In fast fashion many products are discarded due to lack of interest or changing fashions, something that many of the companies selling the products contribute to with their design and marketing. In a time of climate crisis, the fast fashion companies, through aggressive marketing, managed to double clothing consumption from 2000 to 2014 in the rich countries that already had large wardrobes. The number of garments purchased per capita between 2000 and 2014 increased by about 60 percent as a result of aggressive marketing. One major contribution (negative sustainability impact and positive short term profit impact) was their success in changing the view of clothing as consumers keep clothing items about half as long as they did 15 years ago.[23] As even McKinsey, a company who together with many management consultants have supported this development, note: "Some estimates suggest that consumers treat the lowest-priced garments as nearly disposable, discarding them after just seven or eight wears."[24] With the current focus on scope 1-3 emissions and circular business models such companies can avoid a discussion about their responsibility for lifestyles and the size and impact on a wardrobe level.

As Jemima Kelly from the FT noted:[25]

> *If H&M really want to move towards a sustainable future, they kind of have to not exist. Or not in their current form, anyway. Clothing that is designed to be worn only a handful of times cannot be truly called "sustainable", no matter how many times the material it's made from has been recycled, or how little pesticide has been used on the cotton.*

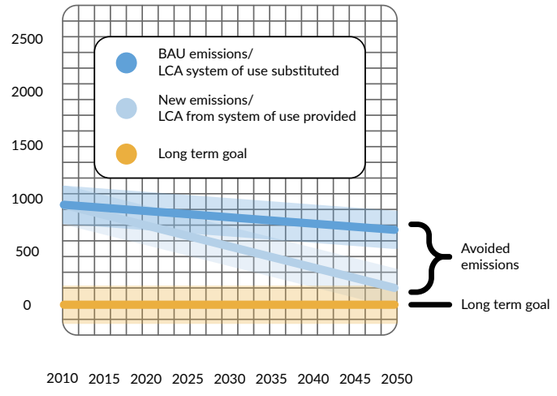


Instead of only looking at individual products a step 2 assessment provides an insight to how sustainable the company is from a system perspective. Assessments on this level also allow for rethinking how a service can be provided that delivers on human needs, something that the assessment at step 3 focuses on.

Step 2 Assessment

For step 2 assessments a life-cycle assessment (LCA) of the new "system of use" and an LCA of the existing system of use it is substituting (BAU emissions) are used. The avoided emissions are calculated by comparing the new system of use with the one it substitutes.

The relevance and validity when assessing 1.5 °C compatibility and global sustainability is often much higher for step 2 assessments compared with step 1 assessments. However, as the system boundaries tend to be much wider and therefore more data points are included at step 2, system level assessments, the error of margin is usually higher for the assessments on this level.



Assessment Cases for avoided emission assessment on step 2

Step 2 assessments look very different compared with step 1 assessments and are based on the system the product is included in when it delivers on human needs, or as close as possible to where human needs are affected.

Case 1: Garment → Wardrobe → Healthy lifestyle systems

For garments the wardrobe can be seen as the system delivering on human needs. This is where most people go to put on clothing and pack the clothes they need for a trip. Assuming the wardrobe is the "system of use and delivering on human needs" highlights the limits of only assessing the impact of the individual garments. When assessing the impact of the wardrobe the total number of garments, how long they are used, how many of them are wasted before they are sold or discarded, are included.

From a wardrobe impact perspective, it is important if the garment is designed to last long, be combined with others, and possible to use in many different contexts. Such a collection of garments can result in a wardrobe that is small, resource efficient and in support of sustainable lifestyles. Another company sells garments in a way that results in wardrobes filled with garments that are designed to be part of a fast fashion culture. The result is a wardrobe that is large, resource inefficient due to the short life of the garments, as well as supporting unsustainable lifestyles. In addition, these large wardrobes also use more space in houses that need to be built, heated, etc.

A step 2 assessment also makes it clear that recycling only incrementally improves an unsustainable wardrobe, while it can make the smart, small and resource efficient wardrobe even more sustainable if used correctly.

With new business models and lifestyles an "extended" wardrobe that also includes sharing with others could be a future "system delivering on human needs". A company might also want to integrate health in a more comprehensive way so that the "system delivering on human needs" includes the wardrobe, as well as the gym and kitchen, in order to be able to deliver in a more integrated way when it comes to health and nutrition.

The fact that the "system delivering on human needs" is not a fixed entity is part of the strength of the approach as it can be an integrated part in strategy planning and other processes where the company is exploring ways forward. It also provides an opportunity for investors and companies to discuss the best strategies for impacts.

The difference between companies becomes much larger when assessments are done on the wardrobe level, compared with only comparing assessments for individual garments, as the quality of garments, how many garments companies try to sell, lifetime of garments, how garments can be combined, etc. becomes important on a wardrobe level. This difference makes it easier to understand the significant difference between different business models.

The new system of use, e.g. wardrobe that supports different human needs, will be compared with the existing system of use, e.g. the current wardrobe that support different human needs, and the difference will be the avoided emissions, or added emissions, from the system of use substitution. The business as usual (BAU) scenario for a certain system is often harder to get data for as this most data exists on a product level.

Case 2: Tire → Vehicle → Sustainable Access Systems

For tires the vehicle can be seen as a system delivering on human needs.

A company might deliver different tires. One tire might be designed and promoted to be used on fossil SUVs that are used for grocery shopping and for other human needs. Another tire might be designed and promoted to be used for bicycles that can get people to shops to buy food and exercise.

Improving the climate impact from the tire that is made for SUVs is not bad, but the system is fundamentally unsustainable so a strategy to move beyond SUVs and cars in general is needed to deliver on sustainability.

Vehicles with wheels are however only a subset of the system delivering on human needs, from the perspective of providing access to different human needs. A vehicle provider can therefore also explore a broader system of access related to what their products are a part of. For example, the use of sensors in vehicles to help cities gather better data for why people drive, and not just where they drive. Such a sensor and data driven business can be extended to everything from drones and shoes for walking, to data gathering that can be used for virtual meetings and 3D-printing.

Another approach to identify a system delivering on human needs can be to be part of a more general shift from products to services, by starting to sell tires as a service. This would allow the company to expand in other areas where such a shift can help support increased resource efficiency.

The new system of use, e.g. bikes providing access to key needs, will be compared with the existing system of use, e.g. the current vehicles, fossil cars, providing access to key needs, and the difference will be the avoided emissions, or added emissions, from system of use substitution.

Case 3: Protein → Meal → Healthy lifestyle system

For protein the system delivering on human needs can be seen as the meal that is providing the nutrition needed. While the shift from animal protein to plant-based protein, or lab-based meat, is often a significant step in the right direction, the waste over the distribution chain, and the amount of nutrition provided and the impact of the other ingredients needs to be included in a step 2 assessment.

A small amount of meat that is part of a healthy menu that provides sufficient nutrition, can be more sustainable than inefficient implementation of a system that delivers plant-based unhealthy fast-food in a way that encourages overeating and significant waste. How the meals are delivered might also become a significant part of the assessment. As a drive-in fast-food delivery system that encourages overeating of unhealthy food is very different from a meal delivery service that is delivered by bike and has a weekly menu designed to minimise food waste and encourage customers to grow food locally.

It is also possible to broaden the "system of use" to include broader health aspects by combining the nutritional offering with exercise, meditation and other features that increase the physical and mental well-being of citizens.

The new system of use, e.g. meals providing nutrition and health, will be compared with the existing system of use, e.g. the current meals providing nutrition and health, and the difference will be the avoided emissions, or added emissions, from system of use substitution.

1.3 11 Billion People Living Flourishing Lives

Question: What human needs does the company help deliver on and does it support a sustainable future where 11 billion people can live flourishing lives?

The third assessment step shifts the focus from the perspective of the company and its products to how human needs are met in society in the areas the company contributes to and what lifestyles are enabled/ encouraged by the "system delivering on human needs", identified under step 2.

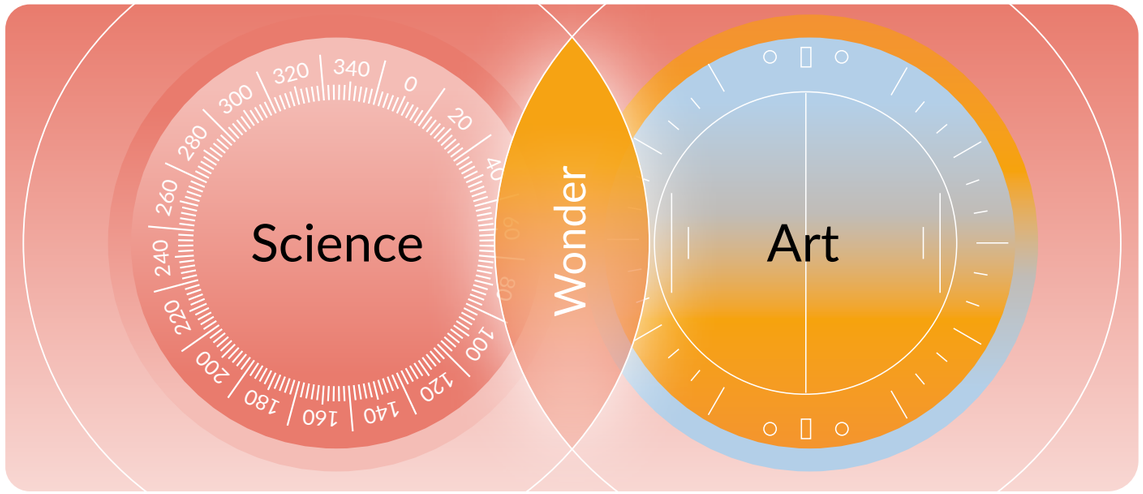
The third assessment step focuses on how companies contribute to fulfilling human needs. Instead of assessing the impact related to the company and the cluster delivering the solutions, this step assess how people meet their human needs and their lifestyles. The contribution in this step is beyond the direct use of the solution provided by the company. The third assessment step will look very different depending on the company.

At one end of the spectrum are companies that do not have any idea of how the products they provide impact on human needs. For these companies it is not possible to do a step 3 assessment until the link between the products provided and human needs is established. This lack of knowledge is valuable information for policy makers and investors as it indicates that they do not know how the market actually looks. Such companies tend to depend on assumptions for future demand for their products based on simple extrapolations where the estimated future demand is linked to expected GDP growth etc.

Companies at this end of the spectrum could be a steel, cement or energy company that only try to become fossil free, but without knowing if they are supporting high-carbon and unsustainable activities, such as building factories for SUVs and oil platforms. Obviously steel and energy is needed at least in the near future, but with a human need perspective new clusters are likely to be needed to ensure that they support sustainable clusters and not those undermine sustainability. To just depend on carbon capture should therefore not be accepted as a relevant low-carbon strategy.

At the other end of the spectrum are companies where the direct climate impact of the product is almost insignificant in relation to its impact in other areas. For such companies the third assessment step is absolutely necessary to capture its impact.

Companies at this end of the spectra are usually part of an ecosystem with supportive and educational functionality. It can be educational companies that provide books and apps for sustainable lifestyle changes, or companies providing health solutions that support



sustainable lifestyles, such as a provider of sanitary solutions or a provider of health data through wearable devices. In this group we also find many of the enablers that currently are of significant importance for a sustainable transition, such as management consultants, legal firms, PR agencies, conference organisers and digital service consultants such as providers of cloud services and AI solutions. Currently most enablers tends to focus on only their own impacts while pushing companies to only use a climate risk approach, but there are a growing number of enabling companies that are beginning to assess their impact as part of an ecosystem where they focus on improved solutions for human needs with strategic partners.

At the middle of the spectrum are companies with focus on just one human need and delivering on that in a sustainable way. In this case the second assessment step will be identical to the third as no additional human needs are impacted. This can be providers of sustainable and healthy protein that do not focus on broader health and lifestyle impacts. Such a company would just ensure that they are not part of unsustainable high processed fast-food, but beyond that they are not active.

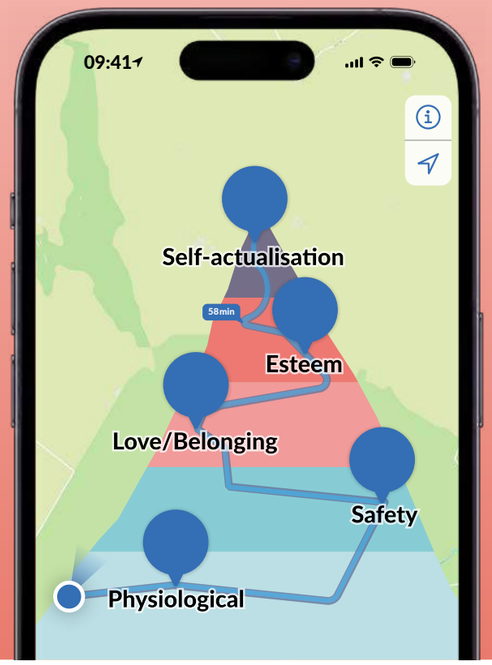
Assessing the impact on human needs and lifestyles is still very uncommon, but in a time of rapid change where new solutions are available it is more important than ever to understand how, or if, companies are contributing to improved lives for people. It is no longer enough to only improve existing products. To ensure that they are a part of the solution and be future proof a company must expand its perspective to ensure that they support the most resource efficient ways of delivering solutions.

Without a focus on the best way to deliver on human needs, companies run the risk of becoming irrelevant and holding back society by clinging to old ways of delivering services. Current assessments tend to ignore new smart ways and only ask companies to improve and commit to reduction of emissions. If such initiatives would have been around and implemented in 1992, when the climate convention was established, we would sit with fossil free typewriters and paper today.

The need to find smarter and more resource efficient solutions is the logic behind the IPCC 1.5 °C P1/Low-Energy-Demand pathway, which is the pathway that to the largest degree supports global sustainability. Still most policy makers and companies follow a P4 high resource pathway with strong focus on CCS and extreme increases in fossil free energy production that is low on innovation and undermines most other sustainability goals.[26]

Delivering on human needs in ways that allow 11 billion people to live flourishing lives

Help people meet their basic needs and beyond



Empower individuals and groups so they can flourish

The step 3 assessment allows an assessment of companies that links directly to how society is evolving and provides an opportunity for companies to focus its innovation measures and strategic planning in relation to its impact on the lives of citizens. Such an assessment is also important in a time where the same product can result in reduced quality of life in one context and improved quality of life in another. The challenge with obesity and malnutrition existing side by side in modern society is the most well-known example in relation to nutrition. In such a case it is not enough to ask for more production (of nutrition), the system of use and who in society that will receive the product is also important to assess.

Only when the impact on human needs is clarified, and knowledge exists about how to increase wellbeing, can a company have a sustainable purpose. Many companies today claim to be purpose driven, but often the purpose they provide is either vague or not at all related to human needs e.g. “help create positive, enduring change in the world”[27] or “Earth’s most customer-centric company”.[28] Statements like these do not add much value in terms of sustainably and also make it very hard to assess if they are delivering on the purpose, or even if their guiding principles are directing them in a way that is making the world a better, or worse, place.

Some companies are well aware of their links to human needs, e.g. a provider of protein that is included in meals delivering nutrition. Relevant questions for such a company are if the protein is globally sustainable, what other nutrients it might be able to provide, and perhaps also if there is an opportunity to expand the value proposition beyond the meals to also include additional health and wellbeing benefits, by collaborating with fitness and outdoor companies, for example.

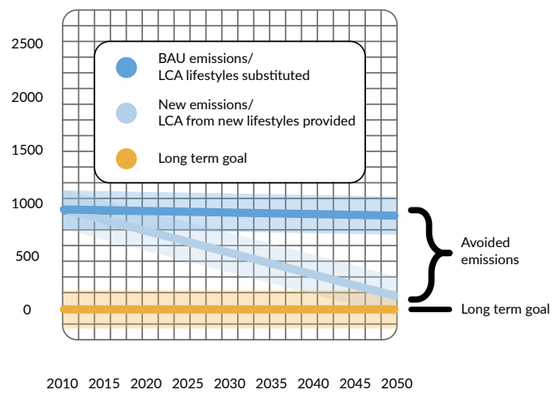
For other companies the known contribution is indirect and must be assessed based on assumptions of how much of the product is used in different contexts, such as wardrobes supporting different lifestyles. Such a company can focus on how to provide smart designs that last a long time and require only a few garments to support sustainable lifestyles. For the step 3 assessment the lifestyles that are enabled and encouraged, as well as the partners required to deliver positive impact, are the focus.

For companies far down the value chain, or in parts of the economy where the value for society is hard to assess, such as stock trading and general office support, more innovative approaches are needed. E.g. a random selection of customers can be selected to track the impact all the way to end-customers. The impact on these end-customers, and possible improvements, are then assessed.

All companies, regardless of how well they know their impact on human needs, should do a “human need contribution assessment (HCA)” as a part of their strategic planning. The exercise to assess the contribution to deliver on human needs helps clarify the role of the company and possible innovation pathways.

Even if the company is not explicitly purpose driven, all companies have marketing material, support different initiatives, and select different customers to collaborate with when they develop new offerings. Hence, no company is neutral when it comes to how human needs are met in society and the lifestyles promoted. As the world needs significant and fast change, companies that do not actively support change are supporting an unsustainable business as usual.

In order to assess how future compatible the company is, a step 3 assessment can be conducted to establish if the current way of delivering on human needs is compatible with a just transition towards a future where 11 billion citizens can live flourishing lives in a half-earth 1.5 °C future. The total use of resources needed to meet different human needs has the potential to become a leading key measure for the next generation of companies.



Step 3 Assessment

For step 3 assessments a life-cycle assessment (LCA) of the new lifestyles and an LCA of the existing lifestyles the new lifestyle is substituting (BAU emissions) are used. The avoided emissions are calculated by comparing the new lifestyle with the lifestyle it substitutes.

Assessment Cases for avoided emission assessments on level 3

Step 3 assessments shift the reference point from the company to society and asks what human needs are met, in what ways, and what lifestyles that are supported and encouraged. The unit of service where the company meet human needs, as identified under the level 2 assessment, is used to assess the impact. The avoided emissions, or added emissions, how human needs are met and the lifestyle changes are compared with the baseline of the BAU development.

Case 1: Wardrobe supported lifestyles

A step 3 assessment of a clothing company providing garments starts with their "system of use", such as the wardrobe, and asks what kind of lifestyles it enables and encourages together with marketing and other measures.

- Is the business model based on trying to sell more fast fashion clothing by trying to make people feel insecure and then encourage them to consume as much as possible to feel less insecure? Are a high amount of shopping goods used to signal status and establish a culture where constant consumption is encouraged? If this is the case then the lifestyle promoted is likely to be one of high consumption, often of low-quality fashion goods, that is accelerating current unsustainable trends.

- Is the company and the wardrobe it promotes encouraging a reconnection with nature, local/train-accessible vacations that support increased understanding of science, encouraging cultural creativity and co-creation, and highlighting low consumption lifestyles with healthy nutrition in contexts where open discussions in social contexts is promoted? If this is the case then the lifestyles the company encourages and promotes have the potential to support a globally sustainable future.

To quantify the step 3 impact, the lifestyles changes that are enabled and encouraged are assessed. For a company with a sustainable lifestyle business model this might include assessing support for walking/biking to get access to exercise and nutrition, encouragement of local vacations that reconnect people to nature and initiatives that enable high-quality low-consumption lifestyles. These changes are then compared with current lifestyles as assessed in relation to 1.5 °C globally sustainable pathways. For companies with unsustainable business models the assessment will show how they encourage continued unsustainable lifestyles with shopping vacations by plane, high material consumption driven by a fast fashion culture, or unhealthy food habits driven by stress and models that communicate that only external beauty is important.

The new lifestyles, e.g. local vacations and a low-material consumption life, will be compared with the existing system of use, both local and global when relevant, e.g. shopping holidays by flight and high material consumption lifestyles, and the difference will be the avoided emissions, or added emissions, from lifestyle changes.

Case 2: Vehicles providing access to human needs

A step 3 assessment for a tire company providing different tires starts with their "system of use", e.g. the different vehicles using tires, and asks what kind of lifestyles these vehicles enable and encourage together with marketing and other measures.

- Is the company manufacturing tires as part of an ecosystem that is encouraging individual ownership of fossil vehicles as a way for people to shop for food and get access to nature? Is a culture of status related to ownership of resource intensive goods such as large mansions, private jets and fashion goods promoted rather than a reflective culture that support art and science? If this is the case, the company can assume that they are accelerating current unsustainable trends regardless of how much they reduce the emissions from the tires.

- Is the company part of an ecosystem that supports customers switching from cars to bikes, sharing of vehicles, and cities to become more walkable? Is a society with focus on creativity and citizen science supported? Perhaps, even supporting a resource efficient sharing economy where contributions to art and science are seen as important contributions to society? If this is the case, the company is in a position where they are likely to be well positioned for a sustainable transition.

The new lifestyles, e.g. biking and walking to meet different needs, will be compared with the existing system of use, e.g. car driving and flying to meet different needs, and the difference will be the avoided emissions, or added emissions, from lifestyles changes.

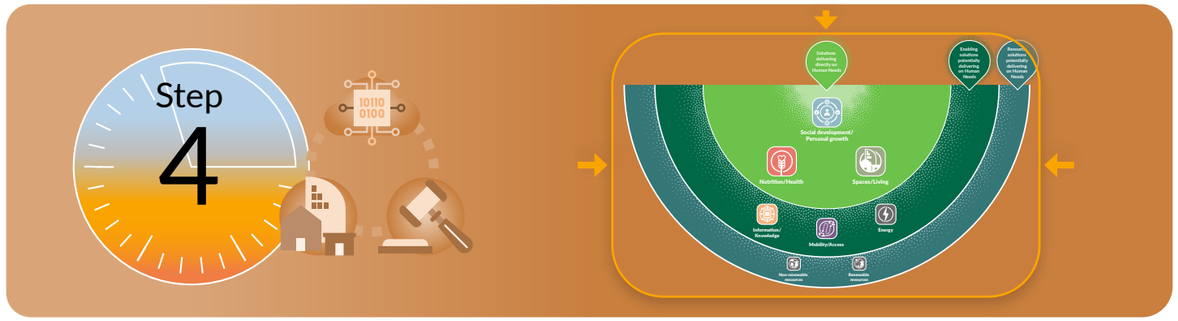
Case 3: Meals providing nutrition

A step 3 assessment for a company providing protein starts with their "system of use", e.g. the meals providing nutrition, and asks what kind of lifestyles these meals enable and encourage together with marketing and other measures.

- Is the company providing meals as part of fast-food chains in shopping centres that encourage car use and promote unhealthy food and excessive consumption among children? If this is the case, the company can assume that they are accelerating current unsustainable trends regardless of how sustainable the protein is.

- Is the company part of an ecosystem that provides healthy nutritional meals that are compatible with a half-earth future and supports low waste meals and better understanding of nature? If this is the case, the company can assume that they have significant opportunities to be part or a sustainable nutritional revolution.

The new lifestyles, e.g. a healthy plant-based diet, will be compared with the existing system of use, e.g. an unhealthy meat-based, highly processed fast-food diet, and the difference will be the avoided emissions, or added emissions, from lifestyles changes.



1.4 Feedback systems: Shaping the society of tomorrow

Question: In what ways does the company and its products influence the structures and values in society?

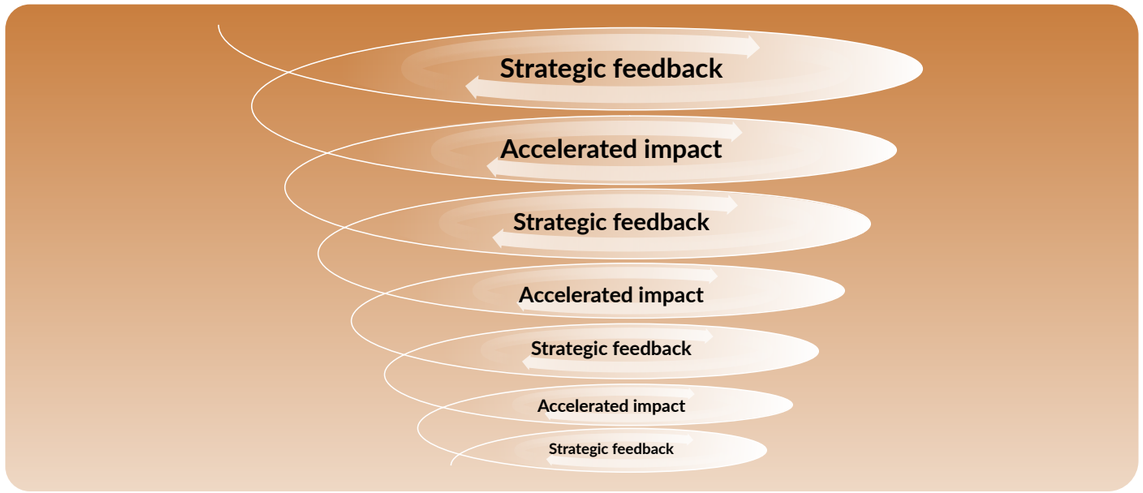
The fourth assessment step focuses on how the company is changing structures and values in society through different feedback mechanisms, including the product itself, the infrastructure it contributes to, and the institutions that are changed through marketing, advocacy, etc.

The fourth assessment step is based on the fact that current systems will, and need to, change the assumption that companies are not passive stakeholders in the shaping of the fourth industrial revolution with regards to values and structures in society. To different degrees all companies contribute to changes in society and the market they operate in. The changes companies can contribute to range from legal changes though lobbying, via value changes though communication in different fora, to new infrastructure and consumption habits though the products they provide. These system changing contributions are especially important to assess if society is changing rapidly, so small contributions can result in significant changes, or if fast and deep changes are needed.

Today we are in the 4th industrial revolution and climate change, biodiversity loss and global inequity require transformative system change with significant changes in society's values and structures.

On this level quantified assessments are difficult, but a traffic light system together with assessment of different kinds of feedback loops can provide insights into how a company is contributing to changes in society. E.g.

- Is the company contributing to more sharing, or more resource intensive individual ownership of products?
- Is the company promoting art, science and other activities supporting a sustainable and flourishing society, or one where humanities weaknesses are exploited to provide mentally and physically unhealthy products?
- Is the infrastructure the product depends on linear and resource intensive, or circular and resource efficient?
- Is the company making people less secure and only encouraging people to be customers, or is it empowering people and supporting people to be active citizens?



- Does the company have clear goals for making the world a better place for everyone (8 billion today and most likely about 11 billion in a few decades), or does it only want to sell more products and maximise profit?
- Does the company support a culture where a small group of affluent people use extreme resource intensive products and assume extreme inequity, or does the company support an expansion of our ethical sphere to non-human animals and future generations and work to ensure that all people can live flourishing lives?

The main purpose with step 4 assessments is not to find an exact answer for each of the assessment criteria, but, through a traffic light system, provide an indication for what kind of future, and what human needs in that future, the company is affecting by influencing values, culture, infrastructure, institutions, and structures in society.

Step 4 Assessment

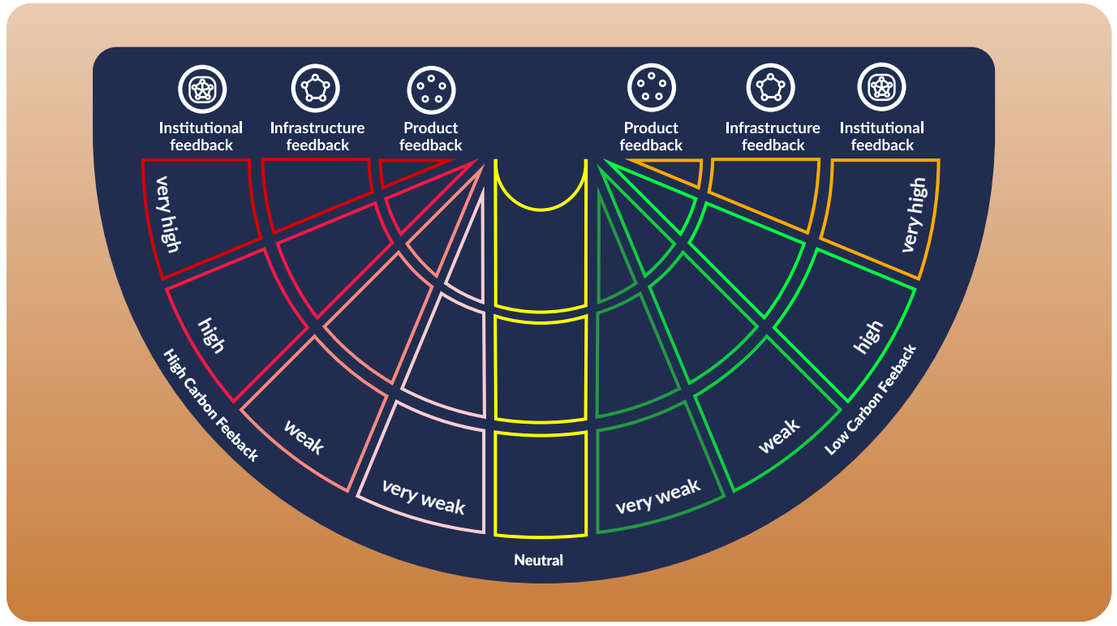
For step 4 assessments a traffic light system is used to assess if the action by the company is contributing to low-carbon feedback (continued reductions in a sustainable way) or high-carbon feedback (increased emissions and/or high carbon lock-in where initial reductions support systems where further emission reductions are difficult/impossible). The assessment is done on three levels:

1. **Product feedback**
Assessing the products that will be promoted or discouraged due to the product sold.

2. **Infrastructure feedback**
Assessing changes in infrastructure that promote or discourage 1.5 °C compatibility as a result of the innovation due to the infrastructure the company supports. This includes both the physical and virtual infrastructure.

3. **Institutional feedback**
Assessing institutional changes, such as new values, business models, laws, regulations, etc. and how this will affect 1.5 °C compatibility due to actions by the company.

For more information please see: https://www.misolutionframework.net/pdf/21st_Century_Climate_Innovation_Assessment_V0.9.pdf



Assessment Cases for leadership and system feedback for step 4 assessments

Step 4 assessments shift focus to how companies are changing the playing field, or if they are trying to protect the current status quo.

Case 1: Garment → Wardrobe → Healthy lifestyle systems

Product feedback: When selling the garments, will the company encourage and inspire consumption of other products that also are of high quality and where low consumption is encouraged? Then the product feedback generated is likely to encourage more sustainable products. Or, is the company promoting mass consumption of low quality goods that do not really meet any human needs beyond short-term consumption satisfaction due to high-stress and frustration? Then the product feedback generated is likely to encourage more unsustainable consumption.

Infrastructure feedback: Is the company supporting innovation and investments in a resource efficient infrastructure, where bikes, sustainable vehicles and 3D-printing are used for high quality modularly designed products with the possibility to upgrade? Then the infrastructure feedback is likely to support other sustainable systems. Or, is the company supporting continued investments in a resource intensive infrastructure with air transport and long haul shipping of low quality products that are marketed for impulse shopping and part of a marketing strategy that track people in order to sell them things that they would not want given the opportunity to reflect. Then the infrastructure feedback is likely to support an unsustainable infrastructure.

Institutional feedback: Is the company supporting new values, such as half-earth, that can guide how companies operate, but also how society as a whole is relating to nature? Is the company challenging growth as the leading guide of society and helping society develop tools to reconnect with nature? Then the company is likely to support a future system in support of global sustainability. Or, is the company lobbying for public investments in CCS and hydrogen as a way to keep a product based business model where increased volumes of resource intensive products is the only way to make profit? Does the company only focus on how to report net-zero and use offsetting instead to deliver goods and engage in marketing of unsustainable lifestyles? Then the company is likely to support an unsustainable future.

Case 2: Tire → Vehicle → Sustainable Access Systems

Product feedback: Is the company providing tires as a service and/or integrating sensors that allow for smarter city planning? Then the company can support other smart products. Or, is the company trying to sell a maximum amount of tires and trying to establish a fast fashion approach to increase further sales of products that are not really needed? Then the company is likely to support current unsustainable product trends.

Infrastructure feedback: Is the company supporting a shift from mobility to access with new business models where data is used for smarter city planning? Then the company is likely to support a sustainable infrastructure. Or, is the company supporting a continued car infrastructure? Then the company is likely to contribute to locking society into a resource inefficient society.

Institutional feedback: Is a multigenerational perspective encouraged where the wellbeing of future generations and other species is included and a system for access is supported? Then the company is likely to support structures and values in society in support of sustainability. Is a short-term perspective highlighted and a culture where individual car ownership is seen as a norm? Then the company is likely to support structures and values that undermine global sustainability.

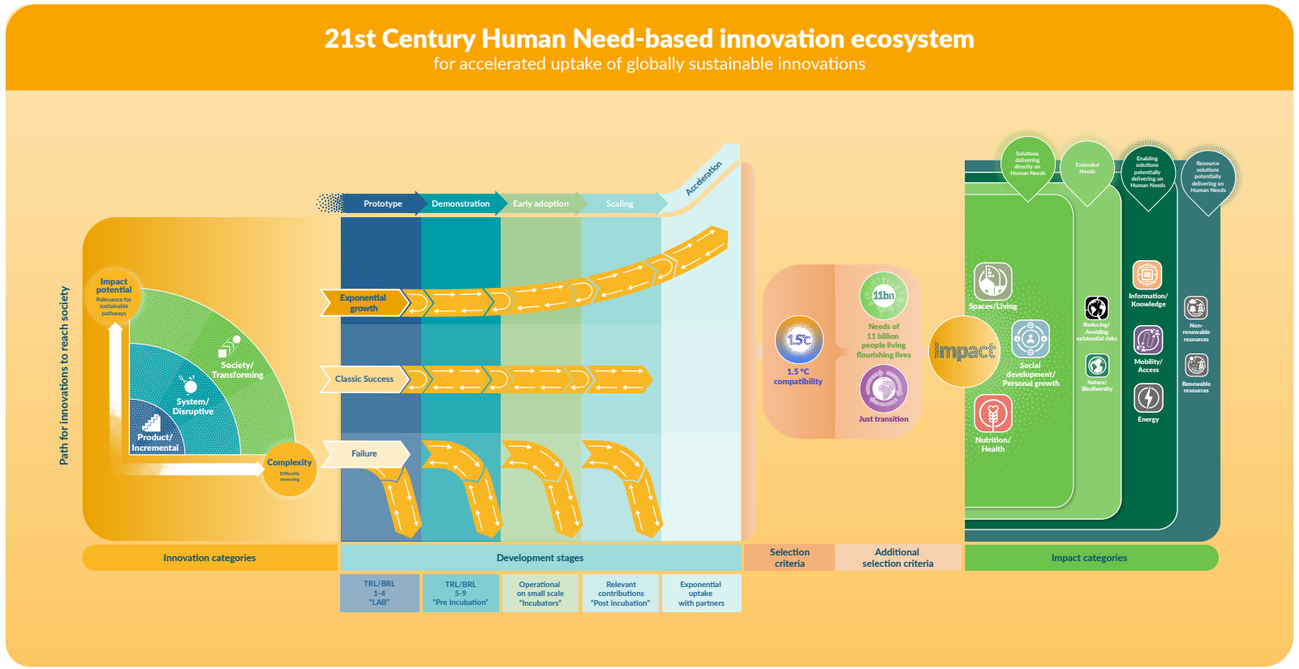
Case 3: Protein → Meal → Healthy lifestyle system

Product feedback: Is the company selling products as part of meal packages, allowing an individual or family to get healthy sufficient nutrition over weeks/months? Is the company transparent so that the end-customer can get information about the whole value chain and the innovations that profits from the product will be invested in? Then the company is likely to support other products that are based on delivery on human needs rather than maximum product sales. Or, is the company selling its products in fast-food restaurants and grocery chains that encourage overconsumption? Is the profit from the unsustainable fast-food used to promote further consumption of fast and highly processed food? Then it is likely to support increased consumption of unsustainable products.

Infrastructure feedback: Is the food production and distribution system resource efficient and designed to meet multiple local needs and sustainable supply chains? Then the infrastructure supported is likely to support more sustainable solutions. Or, is the food system the company depends on extremely centralised with significant losses due to long and resource intensive transport systems? Then it is likely to support a resource intensive infrastructure based on mass consumption.

Institutional feedback: Is the company supporting a half-earth future where 11 billion can live flourishing lives and where both physical and mental health are priorities? Then the company is likely to support structures and values in society that support of global sustainability? Or, is the company promoting excess consumption of resource intensive and expensive goods that result in obesity among the rich and contribute to malnutrition and starvation among the poor? Then the company is accelerating current unsustainable values and structures.

2. How a Full Climate Impact Assessment can be used: Opportunities and Challenges



The full climate impact assessment is part of a broader shift from the traditional static problem approach to innovation and sustainability, to a dynamic solution approach where human needs and solution providers take centre stage. While the full climate impact approach can support individual companies and innovation, it is also part of a process where a new innovation ecosystem is emerging.

During most of the 1900's the focus for both sustainability and innovation was on optimisation of existing systems with single technological solutions. Now we face a situation where human needs and a global perspective are starting to shape our goals, tools and initiatives. A new generation of initiatives and tools focus on global sustainability that supports a future where 11 billion people can live flourishing lives. To deliver the extreme resource efficiency and ensure that no one is left behind, an innovation ecosystem is needed that helps us rethink how we can deliver on human needs with the help of a new generation of tools.

This convergence of a new sustainability agenda and a new innovation ecosystem provides a number of exciting opportunities. A new generation of tools and stakeholders are being developed with the aim of creating flourishing lives for all in the 21st century and are moving to the centre stage. But there are also challenges as old tools and stakeholders, with a focus on making the broken and outdated system of the 20th century less unsustainable, are still dominating the discussion. The idea of sustainability leadership for most people is still having a company reduce its impact to "zero",[29] often also with a disregard for the global sustainability implications. The idea of companies, and other stakeholders, as solution providers, where leadership is measured in relation to their contributions to human needs in a globally sustainable way, is only emerging now within the sustainability community. And in the innovation ecosystem, the need for globally sustainable solutions, not just anything making money, is also just emerging.

Existing structures and sectors, with a focus on optimising existing solutions, are not well equipped to direct and support globally sustainable innovation. However, that is what current resources and thinking tend to gravitate towards. In most organisations, including companies, there is currently a mix between those on one side who focus on the future, with an understanding of the disruptive innovation available but a lack of understanding of the scale and time of change required to deliver global sustainability. On the other side, most of the sustainability organisations, consultants, and initiatives today focus on optimising existing systems with tools like "best in sector", scope 1-3 reporting, a global carbon tax and environmental product labels. All important tools, but primarily for optimisation and product substitution. What the world needs now are new, exciting system solutions that deliver on human needs and that the fourth industrial revolution enables. The kind of solutions that are required for a sustainable future where 11 billion people can live flourishing lives.

1 Impact	2 Strategy	3 Stakeholder interaction	4 X-factor	5 Warning
1. Full impact mapping	1. Purpose driven strategy	1. Cluster identification/attraction/building	1. Explore blue ocean opportunities	1. Using the assessment as part of the scope 1-3 emissions compliance/ risk agenda
2. Cluster impact guidance	2. Expanded innovation strategy	2. Investor identification/attraction	2. Attract and engage transformative staff	2. Cherry pick solutions for communication
3. Opportunity impact focus with focus on human needs	3. Exponential growth strategy	3. Enabler identification/attraction	3. Lead agenda setting processes	3. Use for climate snapshot assessments
4. Dynamic climate impact	4. Future secure strategy	4. Customer identification	4. Move from simple incremental solutions to difficult transformative solutions	4. Link total impact assessment to offsetting
	5. Springboard strategy for global sustainability in an unsustainable society	5. Staff identification/attraction		

Opportunities

Four areas of opportunities from the full climate impact assessment have been identified:

- **Impact**
  Understanding the full impact and how it can be improved in different ways is almost always part of the reason why stakeholders conduct a full climate impact assessment.

- **Strategy**
  Many find the full impact assessment very helpful in their strategy work. The opportunity to become a solution provider and use the rapid changes and need for sustainability providers can guide the strategy in most companies.

- **Stakeholder Interaction**
  Many of the challenges today are hard to address as our society, in structures and thinking, is stuck, to a large extent, in structures that were created for another era. The full impact assessment encourages stakeholder interaction with a focus on globally sustainable solutions for human needs. Most strategy tools and experts still focus on optimising existing systems and use a static problem approach when it comes to the climate challenge, if they even acknowledge climate as one of the most important drivers at all in the strategy development process.

- **X-factor**
  In a time of rapid change and need for transformative system solutions, there must be space to explore the new and unknown. Too often sustainability initiatives are built on ideas that only support incremental improvement in existing systems which makes it very hard to embrace a disruptive agenda. The full impact assessment addresses exponential change and disruptions, and includes a structured way of identifying and assessing different feedback mechanisms that can allow the company to lead disruptions instead of only being surprised by them.

Challenge

- **Warning**
  In addition, there are also challenges related to the use of a full impact assessment. Five of the most significant are listed under the heading “Warning”.

The opportunities and challenges are discussed in more detail below.

Who can use the assessment

Different stakeholders can use a full impact assessment in different ways. While the approach is described from the perspective of companies with solutions, many others also need to rethink their approach to companies.

- **Companies (and also cities/regions and countries)**
  Any company can use the full impact assessment, but those with solutions are the main target group, from large companies to small start-ups. However, more traditional companies, far down the value chain, can also benefit significantly from human-need scanning to understand if they are supporting, or undermining, human needs, and if the clusters they belong to are part of the problem or part of the solution. In a few years it will hopefully be mandatory for companies to assess what actual value they provide in the world, beyond selling their products.

  In addition to companies, this four step approach for solution provers can also be used by cities and regions, as well as countries, to assess their contribution through export and dissemination of new sustainable system solutions, something a few have already done.[30]

- **Investors**
  Any investor can use the full impact assessment, but for most institutional investors it will require a total rethinking compared with the current sector-based, simple assessment based on risk, while those actually investing in companies and understanding innovation, such as VC companies and companies involved in project financing will have an easier time using the full impact assessment.

- **Enablers**
  Most enablers today, including management consultants, professional service providers, PR agencies, legal firms, digital consultants, and data experts, tend to optimise existing systems and count any relative improvement in existing systems. This four-step assessment for solution providers can support enablers in becoming solution providers by quantifying their contributions to globally sustainable solutions that deliver on human needs.

- **Customers/users**
  With a human need perspective, rather than only addressing the source of the emissions, a new generation of innovation can be unlocked.[31] Instead of only viewing companies as providers of products, a total climate impact assessment allows customers, such as region/cities and large companies, to engage with solution providers and become an active part in the innovation ecosystem. Most large customers also have innovation zones, incubators and start-ups of their own that can become part of the ecosystem.

In addition to these four groups, that work directly with companies, policy makers can also benefit from full climate impact assessment knowledge. Less for assessment of individual companies and more in the way policy makers approach companies and the tools they develop.

1

2.1 IMPACT

The first category of opportunities relates to the positive, or negative, impacts in society that the company contributes to through different parts of its core business. This category of impact opportunities is important for two very different groups.

- **Innovation leaders**
  Companies, individuals in companies, and those supporting innovation, who are currently leading the development of disruptive innovations are the main target groups. This group is very eclectic, and while some know that they are important for sustainable solutions that deliver on human needs, many do not know how important they are, or could become. Many start-ups, including deep tech, already deliver important contributions to a more sustainable society, but do not use the need for sustainability as a driver and have almost never been acknowledged, as they operate in a society that very seldom looks for solutions based on human needs.[32] Even companies that know that they deliver sustainable solutions often only know their impact based on product substitution, not the actual impact in society due to more sustainable ways to deliver on human needs. These companies and individuals can use the full climate impact to assess impact to help expand the climate innovation agenda.

- **Own emission reduction leaders (scope 1-3)**
  Companies, individuals in companies, and others who support companies in reducing their own reductions, i.e. those who currently only approach companies as sources of emissions, with a focus on reporting scope 1-3 emissions, is the second category of users. From this static problem perspective, the best a company can do is to focus on its own emissions and reach zero. With a full climate impact approach the goal is all of a sudden shifting to the needs in society and the possibility to link increased sales with a better future for people. Many leading CSR/ESG experts understand that the current limited approach is ignoring, and sometimes even undermining, the most important parts of the company's climate innovation work. For these stakeholders, assessing impacts is an opportunity to expand the current risk innovation approach with a solution innovation approach.[33]

1. Full impact mapping
Understand the full climate impact on society from the company with a focus on the products the company provides and what is needed in society

Most companies still only use tools and assessments that focus on their own emissions (scope 1-3) and do not assess the actual climate emissions in society. Only if the whole society was static, and the future would be the same as today with no new companies and no new solutions, would such an approach make sense beyond a risk perspective. The major change with a full climate impact assessment is that the focus now is on the impact in society, not the company itself, from different perspectives. With a full climate impact assessment, including an understanding of the impact on human needs and dynamic feedback mechanisms, it is possible to assess the full impact of the company in society.

Initially a full impact approach can be daunting in a compliance driven culture, where external reporting and risk management, rather than actual impact in society has been the focus for a long time. However, even a rough assessment of the different impact areas often helps companies identify areas that are orders of magnitude more important than their current compliance drive work. In addition, many companies realise that the current risk/reduction climate agenda is only one part of a full impact strategy that involves many more parts of the company. A focus on the core business and the possibility to link increased sales to increased positive climate impact provides the opportunity to engage not only new parts of the company, but also opens up for new interactions with other stakeholders, far beyond reporting consultants and offsetting organisations.[34]

Assessment focus (Steps 1, 2, 3, 4)

An initial overview of the potential positive impacts in society requires all the four assessment steps, as such an overview will provide insights into new areas that most companies do not include in their current innovation and climate strategies. To view the need for globally sustainable solutions in society as an innovation driver, a focus on human needs and the inclusion of dynamic feedback mechanisms are still new areas of inquiry for most organisations, so surprises are almost guaranteed. An initial overview also allows many different parts of the company to engage and a new generation of innovation to flourish. Based on such an overview, different ways forward can be discussed.

> In any given moment we have two options:
> to step forward into growth or to step back into safety."
>
> —Abraham Maslow, 1908–1970

2. Cluster impact guidance
Identify ways to increase positive impacts in society through clusters

By shifting the focus from the internal emissions to the impact in society, the assessment allows for identification of potential collaborations that would increase the positive impact in society. An understanding of the clusters required to actually deliver on human needs is also established. By identifying the systems and clusters the solutions belong to when it delivered on human needs, it is also possible to explore new business areas, and new clusters of partners, that can move into new areas where positive impacts can be delivered.

A cluster including all the stakeholders relevant to deliver a solution, ranging from those with different technologies, legal advice, marketing and financing, to those on the demand side that are able to purchase and use the solution.

Assessment focus (Step 2)

The second assessment step helps the company to identify the clusters that are needed to deliver solutions in society. Rather than only comparing with other companies in the same sector, such an assessment provides insights into existing and possible new collaborations for increased positive impact in society. The second assessment step also helps to identify totally new ways to deliver on needs in society in ways that are beyond the current capacity of the company.

3. Opportunity impact focus with focus on human needs
Demonstrate links between increased sales, profit, and positive impacts in society

With much climate action focused on reducing costs, avoiding regulatory and reputational risks, the need for winners in a low-carbon economy is an opportunity driven approach, based on the assumption that new solutions are needed in society. Most companies have never done an assessment of how they can contribute to a future where 11 billion people can live flourishing lives, and especially not from an opportunity for growth perspective.

For any company, and especially start-ups, the possibility to engage with investors from a cluster and human needs perspective is also valuable. Likewise, many investors also benefit from an expanded climate and innovation agenda. Investors with a risk/ESG approach to climate can explore an approach where companies are solution providers. Investors with an innovation perspective can move beyond improvement in existing systems, or transformative solutions that undermine human needs, and explore how they can assess if the innovations they invest in make the world a better or worse place.

Assessment focus (Steps 2 , 3)

The second- and third assessment steps allow the company to understand how it affects society from the perspective of human needs, rather than just providing a better version of a product that might be part of unsustainable systems. Currently a climate leader can use scope 1-3 reporting and deliver low-carbon solutions to coal power plants that are providing energy to construct new oil platforms, or solar panels to schools and hospitals, without the current assessments indicating any difference between these.**Dynamic climate impact**

Move from a static/incremental approach to a dynamic/transformative approach

Almost all tools and assessments today were created and designed for a world with slow and incremental changes. For most of the industrial revolution it was enough to assume that the next year would bring only gradual changes and just assume 2-5% annual changes. Today, the need for exponential uptake of sustainable solutions and a fourth industrial revolution brings disruption in many areas. The changes are not just technology driven, but business models, regulations, customer values as well as shocks to systems from pandemics, wars, ecosystem collapses, cyber warfare and social media are also accelerating disruptions in many ways. The paradox is that in our current world the safest short-term strategy is to stick to business as usual, while business as usual is also a guarantee of failure in the long term. So, with single-year budgets and initiatives, a business as usual strategy is the safest bet, but it is also the strategy that undermines the kind of innovation required for a sustainable future where 11 billion can live flourishing lives. Even a rough overview of different feedback systems and how the company contributes to those can help identify new impact opportunities and avoid static lock-in strategies.

Assessment focus (Step 4)

The fourth assessment step allows the company to understand its role in the fourth industrial revolution. By assessing the impact from the company's products, its contribution to different infrastructures and institutions from a feedback perceptive, the company can identify ways to support accelerated uptake of sustainable solutions as well as find collaboration opportunities with likeminded stakeholders.

2

2.2 STRATEGY

The second category of opportunities relates to the capacity to develop future proof strategies based on insights from a full climate impact assessment. Most companies still have a narrow product driven strategy with a focus on a few technological drivers. Most also assume linear change in a world that both requires and delivers exponential change in many areas. The strategic opportunities are of importance for anyone who is involved in developing strategies and particularly for five groups:

- **SMT**
  The senior management team can benefit from a full impact assessment as it provides an overview of many key trends and key stakeholders that will influence future revenue flows.

- **CEO-networks**
  CEO-networks that bring together CEOs from different sectors can use the full impact assessment to bring clusters from different sectors together and explore innovative ways to collaborate, in order to develop sustainable solutions for human needs. Many CEOs are trying to find ways to explore business opportunities in the 4th industrial revolution, and the need for globally sustainable solutions should be part of these discussions.

- **Boards**
  The board of directors can use the full impact assessment to understand the new landscape that the company operates in and move beyond classical metrics and sector approaches.

- **Management consultants**
  Currently many management consultants are more a part of the problem than the solution when it comes to an expanded climate innovation agenda. They often have teams dedicated to supporting companies in strategy development, but these teams usually ignore the opportunities companies might have as climate solution providers delivering on human needs. A reason for this missed opportunity is that companies tend to ask management consultants to help them as risk/report/compliance experts, and with few proactive management consultants they tend to reinforce the limited static problem agenda.

- **Policy makers**
  In most governments the approach to companies in the area of climate change is limited to a static reduction agenda, often based on sectors. Development of an expanded climate and innovation agenda is emerging and most organisations can apply a full impact assessment on the companies they engage with, as well as their own organisation as an enabler.

Below are five different strategy applications that a full climate impact assessment can support and inspire.

1. Purpose driven strategy
Delivering on human needs in a sustainable way

The full impact assessment can support the development of purpose driven strategies in two ways:

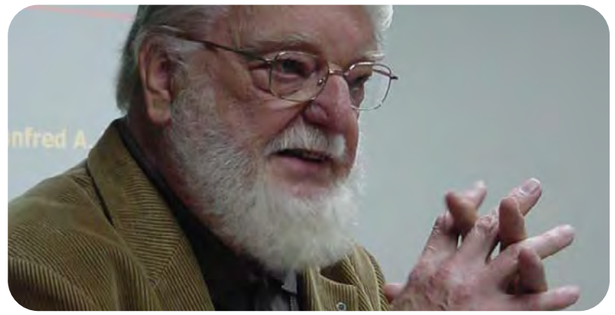
- First, to provide data and strategic options to those that are already purpose driven companies. It provides hard data regarding impacts on human needs in society, impacts that can be used to communicate with investors, suppliers and companies and different enablers that are not used to working with companies with goals beyond only the economic.

- Second, to help those that are interested in becoming a purpose driven company. Many start-ups are very interested in exploring a purpose driven agenda even if they initially focus only on a specific technology without much consideration for the sustainability impact. This is particularly true for companies that realise that they have solutions in areas where society needs exponential growth.

Assessment focus (Step 3)

The third assessment step focuses on human needs and allows companies to understand how they can deliver on human needs in sustainable ways. To be able to quantify and assess the ways the company supports human needs can be a transformative event in itself, as most companies have intuitive ideas about their contributions to society that often turn out to be very wrong when actual data is collected.

> I also know that one must do what one can do. No matter how little it is, it is nonetheless a human testimony and human testimonies, as long as they are not based on greed or personal ambition for power, can have unexpected positive effects."
>
> —Manfred Max-Neef, 1932–2019



2. Expanded innovation strategy
An opportunity driven innovation strategy for increased revenues and sustainability

In our society technological innovation is often the only innovation that is acknowledged. However, for many purpose driven companies the technological innovation is one part of a broader set of innovations needed to deliver globally sustainable solutions. A full impact assessment allows companies to expand from only technical innovation to also include areas like business model-, communication-, recruitment/HR-, and advocacy-innovation in their strategies. For many innovation driven companies the link to human needs also help guide investments and priorities in unexpected ways. Most companies still develop their strategies without actually knowing their impact in society, which is bizarre in a situation where there has never been more data available, and more need to direct our innovation towards sustainable solutions.

Assessment focus (Steps 2, 3, 4)

With a focus on the third assessment step, that focuses on how human needs are met and lifestyles are changed due to the company, it is possible to explore what is needed to accelerate the positive impacts, and avoid the negative impacts. How markets can change with communication innovation, and how business model innovation can deliver what is needed in clusters that must be built, are examples of areas where companies can explore an expanded innovation agenda. The second assessment step can help map the needs of different clusters, that can range from financial innovation to the need to attract new skills. The fourth assessment step can help companies to identify ways that they can support feedback mechanisms that support accelerated uptake of globally sustainable solutions which deliver on human needs.

3. Exponential growth strategy
Delivering what is needed, not what most see as possible

Most companies assume growth strategies based on old business models and theories. Investors and enablers such as business model and digital consultants tend in a similar way to assume gradual growth rather than exponential. For many companies this still make sense, but those with the solutions society needs should think beyond that. With an assessment that shows how different solutions from the company are making the world a better place by delivering on human needs in a sustainable way, the company can identify exponential growth strategies in support of current climate and sustainable targets.

Assessment focus (Steps 3, 4)

By combining the insights from the human needs based assessment in step 3 with the feedback assessment in step 4, the company can identify different exponential pathways for growth that deliver positive impact in society.

4. Future secure strategy
A significant challenge in the area of assessments of climate impacts is the urge to identify rapid, and easy to assess, avoided emissions. These drivers often result in "high carbon lock-in", i.e. a situation where fast and inexpensive emission reductions are achieved by investing in optimisation of fundamentally unsustainable systems. As many companies still approach climate change as a compliance, reporting risk area, it is especially important that they develop strategies that include assessment of their offerings from a human needs perspective.

For companies using the full climate impact assessment to develop a strategy for growth this is easier if investors, the board and SMT, understand the benefit of a strategy that is sustainable over the coming decades, rather than one that maximises short-term gains while locking the company into an unsustainable strategy where revenues are reduced over time. A serious assessment will show that the emission reductions achieved are part of the problem instead of the solution.

Assessment focus (Steps 3, 4)

With a focus on human needs and an 11 billion filter, together with assessment of the feedback systems the company contribute to, a future secure strategy can be developed.

5. Springboard strategy for global sustainability in an unsustainable society
Dancing with the devil towards a sustainable future for all

Many start-ups need to scale before they can find clusters that are delivering sustainable solutions, so they find themselves in a situation where they need to find markets to help them grow and scale, even if these customers are not the most sustainable. In most areas, from energy and mobility to garments and nutrition, many of the dominating companies are unsustainable and many actively undermine sustainability, so scaling without being part of the problem is almost impossible.

By exploring exponential growth paths from a globally sustainable perspective with the full impact assessment, a springboard strategy for global sustainability can be developed. These springboard strategies focus on maximising the positive impact through a rapid scaling strategy that often includes initial collaboration and sales to unsustainable customers. A springboard strategy for global sustainability often requires sophisticated investors that focus on the impact in society rather than the often simple metrics used today to assess investments.

Assessment focus (Steps 2, 3)

By using assessment step 2 and 3 it is possible for companies, in collaboration with the right investors and enablers, to map out a springboard strategy for global sustainability.

3

2.3 Stakeholder relations

Many of the challenges today are hard to address as our society, in structure and thinking, to a large extent is stuck in structures that were created for another era. The full impact assessment encourages stakeholder interaction with a focus on globally sustainable solutions for human needs. Most strategy tools and experts still focus on optimising existing systems and use a static problem approach when it comes to the climate challenge, if they even acknowledge one of the most important drivers at all in the strategy development process.

Discussions beyond optimisation of existing systems are often very vague and conducted by people who seem to think that workshops and reports are more important than actual results in society. With its focus on human needs and clusters, the full climate impact assessment can provide guidance for those who want to explore a new generation of collaborations with a focus on impact in society.

All organisations, and especially intrapreneurs in different organisations, can explore a full climate impact assessment to identify new and relevant collaborations.

1. Cluster Identification/attraction/building
Identify and build relevant clusters for growth and impact

The first step to build tomorrows stakeholder relations, beyond existing bilateral and value chain relations, is to understand what current, and potential future, clusters that the company can belong to in order to deliver on human needs in a sustainable way. Assessment steps 2 and 3 provide a great combination to assess the clusters the company is involved in today (2) in delivering on human needs, and tomorrow (3).

Assessment focus (Steps 2, 3)

2. Investor identification/attraction
Identify, invest in, and grow intangible assets

Assessment steps 2 and 3 allow for many different dialogues. One relation that is often problematic today is the one between companies and investors.

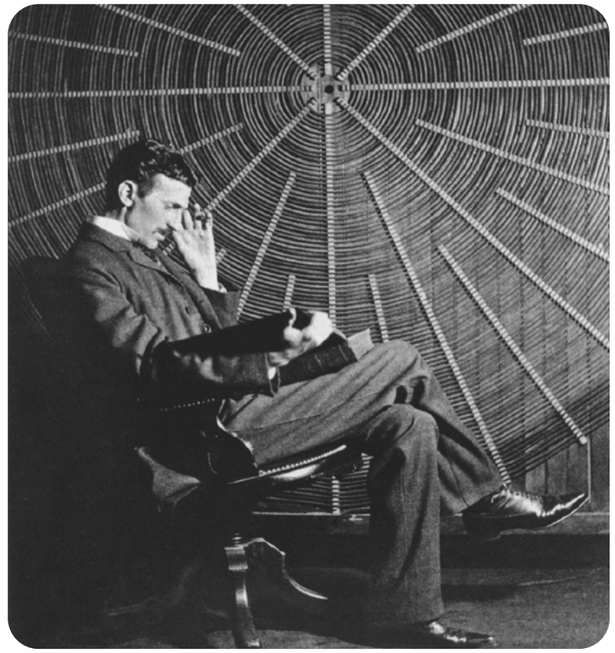
The second and third steps in the assessment allow progressive companies to show traditional investors the value of a purpose driven strategy, but also for purpose driven investors to support traditional companies to move in a purpose driven direction. Instead of a simple bilateral discussion the company/investor discussions can be expanded to clusters based on delivering on human needs and possible synergies in different investor portfolios.

The second step can also provide insights into possible clusters of tomorrow with a focus on human needs, something that can help companies build strategic partnerships, and investors can build impact driven portfolios. Currently most investors are sector focused and do not assess impact in society. Hence, before a full climate impact assessments becomes truly relevant for the investor they often need to develop a strategy were the core business is linked to positive impact in society.

However, even if a specific investor is not focused on positive impacts in society, or not even interested in climate change, a full climate impact assessment, from a purpose driven company, can help to explain the economic potential to an investor that is used to only assessing based on classic sector criteria, where the product in isolation is the only factor they know how to assess.

Assessment focus (Steps 2, 3)

> “The most important product of a creative mind is an invention. Its ultimate aim is the rule of mind over nature and the use of its forces for the needs of mankind.”
>
> —Nikola Tesla, 1856–1943



3. Enabler Identification/Attraction
Support in filling in the gaps with the right network

Enablers such as management consultants, legal firms, PR agencies, etc. can use assessment steps 2 and 3 to better understand how to support purpose driven companies, or companies that might benefit from becoming purpose driven.

The full climate impact assessment was developed together with, and especially for, enabling companies providing solutions as they are needed for transformative system change. While most enablers have been start-ups the full climate impact assessment can also be used by established enabling companies, such as management consultants, legal firms, PR agencies and event organisers, to assess their impact.

As enabling companies often help shape rules, regulations, business models and values in society, the fourth step is of particular importance.

Assessment focus (Steps 2, 3, 4)

4. Customer Identification
Finding the right markets for the right company

With leading strategic customers, including large companies and regions/cities, also exploring an expanded climate innovation agenda, the potential for mutual benefits are significant. But the majority of customers are still either not paying much attention to climate change, or just looking for reduction in existing systems. Step 2 and 3 assessments can identify those that are caught in high-carbon inefficient systems and low innovation agendas.

Assessment focus (Steps 2, 3)

5. Staff identification/attraction
Building the company of tomorrow with the right staff

The potential to identify both the clusters today and the potential clusters of tomorrow allow the company to identify the skills that are relevant. By being engaged in new exciting clusters and being able to demonstrate current and future positive impact, the company also becomes a magnet for leading talent.

Assessment focus (Steps 2, 3, 4)

4

2.4 X-factors

In a time of rapid change and need for transformative system solutions there must be space to explore the new and unknown. Too often, sustainability initiatives are built on ideas that only support improvement in existing systems, which makes it very hard to embrace a disruptive agenda. The full impact assessment addresses exponential change and disruption. In addition, it is structured to identify and assess different feedback mechanisms that can allow the company to lead disruptions, instead of only being surprised by them.

All of the below areas are enabled by assessment steps 3 and 4.

While anyone can support and be active in the below areas, it tends to be a smaller group of purpose driven, and more risk willing, that move from talk to action in these areas. How the existing stakeholders, especially those that claim they support innovation, can support action in these areas is important as they tend to be ignored or marginalised when innovation support is developed.

1. Explore blue ocean opportunities (Intrapreneurs in)
The capacity to identify potential clusters of tomorrow, based on the actual human needs that ultimately drive demand, rather than only assessing trends related to different product groups. With the urgent need for sustainable ways to deliver on human needs, companies can use step 3 to find new low-probability, high-impact solutions that can be part of blue ocean strategies.

2. Attract and engage transformative staff (Intrapreneurs in)
The leading companies of the future need the leading staff of the future. Assessment step 3 allows companies to find those that are at the forefront of delivering on human needs in the areas most relevant to them. By establishing the company linked to human needs they also become attractive to leading people that care about actual impact. For the companies at the bleeding edge, assessment step four allows them to engage in transformative and disruptive processes, as well as understand the drivers behind them. This opens up opportunities to recruit the next generation of positions in companies.

3. Lead agenda setting processes (Intrapreneurs in)
Most companies today innovate on the margin, and many are stuck in an approach where only technological innovations that optimise existing systems are in focus. By using assessment step 3 to explore new ways to deliver on human needs, and especially step 4 for feedback systems, the company can identify processes that are part of shaping tomorrow's society.

4. Move from simple incremental solutions to difficult transformative solutions (Intrapreneurs in)
While the majority of resources, most of the time, will be on ensuring that current offerings meet the current demand, this is not enough to stay competitive. Providing products that fit in existing systems is easy, and sometimes important, but the important innovations require much more than this.

4

2.5 Warning

There are challenges related to the use of a full impact assessment. Five of the most significant are listed below. Most of them relate to the challenges when stakeholders, with a static problem perspective, pick selected parts of a solution assessment as part of a communication/ greenwashing agenda.

1. Using the assessment as part of the scope 1-3 emissions compliance/risk agenda
The idea with the full climate impact assessment is to support companies in becoming solution providers by providing strategic guidance. The need for solutions that provide for human needs in a sustainable way should be seen in the context of companies as active organisations that through their activities contribute, or undermine, different futures. This should not be mixed with compliance reporting, and often has no place near classical ESG/ CSR reporting.

In most cases it is better to keep the climate opportunity agenda separated from the climate risk agenda, as most of the staff and those engaged in scope 1-3 work are stuck in a static problem approach.

Recommendation: Use the total impact assessment internally as part of the strategic work to identify new revenue streams, business model innovation and the potential to be a purpose driven company. Often it helps if the initial work is done without any external communication, to ensure that the focus is on core business, and keep a distance from the traditional compliance/reporting work. Once a climate opportunity strategy is in place, synergises with the climate risk strategy/scope 1-3 work can be explored.

2. Cherry pick solutions for communication
To strategically pick solutions to assess their positive (or negative) impact in society is often a first step towards an expanded innovation agenda. Such an assessment can show the order of magnitude impact and help shape a new strategy for companies. As many companies' climate work is dominated by staff with responsibility for reporting and PR, rather than the core business and the strategic direction of companies, i.e. the parts where the most significant impact in society and business innovation lie, it is, however, important to state the obvious: Do NOT use a total impact assessment to cherry pick a few solutions where the maximum positive impact can be found and then communicate these, and absolutely do NOT mix these avoided emissions in society with the scope 1-3 emissions.

Recommendation: Focus less on traditional marketing and more on establishing credible and strategic relations with stakeholders that are interested in your company as a solution provider.

3. Use for climate snapshot assessments
As much of the current climate work is driven by risk/compliance, much of the work is also looking backwards. The main benefit with a full climate assessment is to direct and support a strategy for the core business that is linked directly to human needs in society. Only assessing current contributions is therefore less important and runs the risk of being used for communication efforts rather than strategy.

Recommendation: Focus on the direction of the company, rather than where it is, or has been. Use the total impact assessment as part of the strategic work and link it to key metrics such as increased sales in key markets, exponential growth of key solutions and new partners in support of a purpose driven approach. Use the assessment to assess how future secure the current business strategy is.

4. Link total impact assessment to offsetting
The one activity that is probably furthest away from the purpose with a total impact assessment is offsetting. The drivers, knowledge, goals, etc. are all different. This has led to the paradoxical situation that "avoided emissions" are used in two very different cases.

a. To describe activities that are linked especially to offsetting, including forest projects generating emission rights for polluting companies.

b. To describe when a new low-carbon solution is substituting an older, more carbon intensive solution, with the result that emissions are reduced in society at the source of the problem.

"Reporting/communication offsetting" and "sustainable impact in society from the products a company provides" are two very different approaches that should not be mixed. The first is for those that only focus on the emissions from the company (scope 1-3), not the delivery on sustainable solutions to human needs and only see companies as a problem where the best they can do is to reach zero. If a company only cares about communication, they might even buy extra offsetting and claim that they are "climate positive", while selling fundamentally unsustainable products such as fast-food meat burgers or fast fashion, promoting over consumption. The second approach is for those that see a role for the company to deliver what society needs and contribute to a future where 11 billion can live flourishing lives.

Recommendation: Develop a strategy with a focus on improving the actual impact in society and human needs through the core business, and keep this separate from (creative) accounting relating to the company's own emissions (scope 1-3) and use of offsetting.

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1 https://www.misolutionframework.net

2 https://www.unep.org/news-and-stories/story/world-headed-climate-catastrophe-without-urgent-action-un-secretary-general

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3 https://history-of-avoided-emissions.misolutionframework.net

4 There are exceptions such as the 1.5C playbook, and WBCSD newly released guidance regarding avoided emissions. There are also theoretical opportunities to provide some data though risk-oriented framework and initiatives such as CDP and GRI. But the dominance of a static problem approach is very strong with initiatives such as Science based reduction targets and race to zero still totally excluding avoided emissions and dynamic effects.

5 https://unfccc.int/resource/docs/convkp/conveng.pdf

6 https://unfccc.int/kyoto_protocol

7 In most cases <10% reductions between 1990-2012, as agreed in the Kyoto protocol.

8 The projects that offsetting schemes can fund is not the question here. There are many nice projects that are very valuable, but the question here is what kind of innovation they support and the kind of solution approach they assume. A PR driven accounting approach will tend to focus on simple solutions that are easy to calculate, do not cost much, and are easy to communicate. Hence the existence of forest offsetting or other projects that make for nice images in PR reports rather than prioritizing business model and product investments in what is needed for global sustainability.

9 https://www.ft.com/content/b724128d-eb37-4b5a-a906-6ada59dfecc3

10 https://www.responsibletravel.com/copy/carbon-offsets

11 This fourth step can also be used to assess companies that undermine global sustainability with their marketing and lobbying, but the focus is on solution providers.

12 https://www.oxfam.org/en/5-things-you-need-know-about-carbon-inequality

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27 https://www.mckinsey.com/about-us/overview/our-purpose-mission-and-values

28 https://www.aboutamazon.com/about-us

29 Or other values based on concepts such as planetary boundaries.

30 https://www.misolutionframework.net/Publications

31 https://www.oecd.org/publications/redesigning-ireland-s-transport-for-net-zero-b798a4c1-en.htm

32 The few initiatives that look for sustainable solutions tend to use very simple assumptions, or even just rely on how companies self-declare their contributions.

33 https://www.misolutionframework.net/pdf/Next_Gen_Climate_Innovation.pdf

34 In most full impact assessment processes scope 1-3 reporting consultants and offsetting organizations are not even included ,as they often try to undermine a process where the company does not only view itself as a problem and pay them money to be able to claim compliance and sometime even label products that they know are not sustainable with some kind of “net-zero” claim.

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