Rethinking Net-Zero Frameworks:

Enabling Climate Solutions Companies to Drive Societal Decarbonization

THE ORIGINAL OATLY! SE ADVISORY SERVICES

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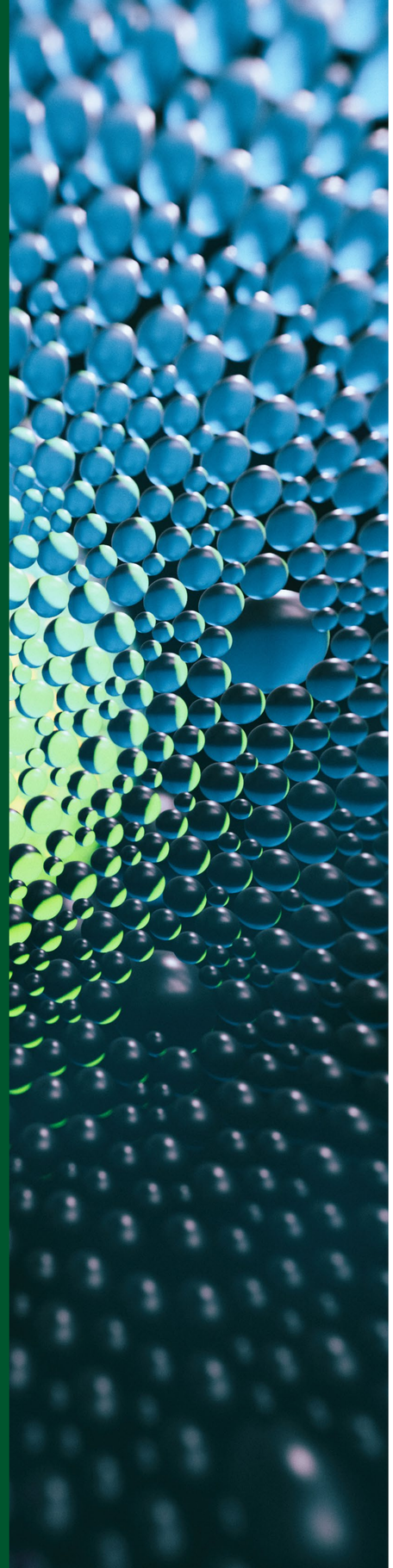

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Rethinking Net-Zero Frameworks:

Climate change has become one of the most critical challenges of the 21st century. Extreme weather events are now more frequent and intense than ever before, disrupting life as we know it, critically impacting humans, ecosystems, and broad-scale economies.

Based on current emission levels, exceeding the 1.5°C global warming threshold identified by the scientific community is considered increasingly certain, highlighting the need for rapid and significant emission reductions. Policymakers and industry leaders have a crucial role to play in making this a reality.

The rise of net-zero frameworks, such as the Science Based Targets initiative (SBTi)[1], has significantly advanced efforts to hold companies and their suppliers accountable for absolute climate emission reductions. These frameworks offer a systematic approach to achieving real change in operations and the decarbonization of our society.

A Missed Opportunity

While existing net-zero frameworks are essential for supporting companies in reducing their carbon emissions, they may inadvertently limit a key opportunity: promoting the growth of new products and services that can actively contribute to positive climate impact. These climate solutions can fundamentally reshape how industries approach the transition to net-zero.

Similarly important are the organizations developing and scaling these low-carbon products and services - known as ‘climate solutions companies’. By offering alternatives to carbon-intensive conventional options, these companies provide the tools needed for society-wide emissions reduction. Despite their critical importance to achieving global climate goals, current frameworks may hinder rather than help these companies scale their impact.

1 https://sciencebasedtargets.org/

How do these framework challenges manifest in practice?

The challenge lies in how existing net-zero frameworks approach emissions reductions. Despite their methodological validity, these frameworks present two critical limitations that need addressing to better support climate solutions:

Requiring absolute emissions reductions regardless of context

Current frameworks prioritize short and long-term absolute reduction targets for all companies, regardless of their current emissions or the products they offer. For companies that provide climate solutions as alternatives to high-emission options, achieving absolute reductions would mean limiting production growth, even though their emissions are typically already low. This has two important implications:

- Companies that commit to absolute reduction targets would need to restrict growth, which would limit the availability of climate solutions in the market and thus hinder broader societal decarbonization.
- Companies that choose not to adopt these frameworks risk being perceived as “less sustainable,” potentially losing investment, customers, and sales.

Cascading requirements throughout supply chains regardless of context

When companies require their suppliers to set absolute reduction targets, it creates a particular challenge for climate solutions companies in the supply chain. Specifically, there is a risk of being excluded from supply chains by conventional companies if climate solutions companies choose not to adopt absolute reduction targets during their growth phase.

To better understand the implications of different approaches, we present two potential pathways toward decarbonization: one where all companies are required to adopt absolute reduction targets for net-zero alignment, and another where companies providing climate solutions implement intensity-based targets that balance necessary growth with emissions reduction to accelerate broader societal decarbonization (see figure 1).

At first glance, recognizing intensity reduction targets for climate solutions companies might appear to conflict with current net-zero frameworks, as it would permit certain companies to increase their absolute emissions while scaling. However, viewed holistically, this differentiated approach would accelerate progress toward societal net-zero compared to scenarios where high-emission conventional options remain dominant. While most companies should continue to pursue absolute emission reductions, we believe frameworks need to evolve to accommodate qualified climate solutions companies.

Figure 1
Conceptual scenarios for societal decarbonization without and with the growth of climate solutions products/services and companies.

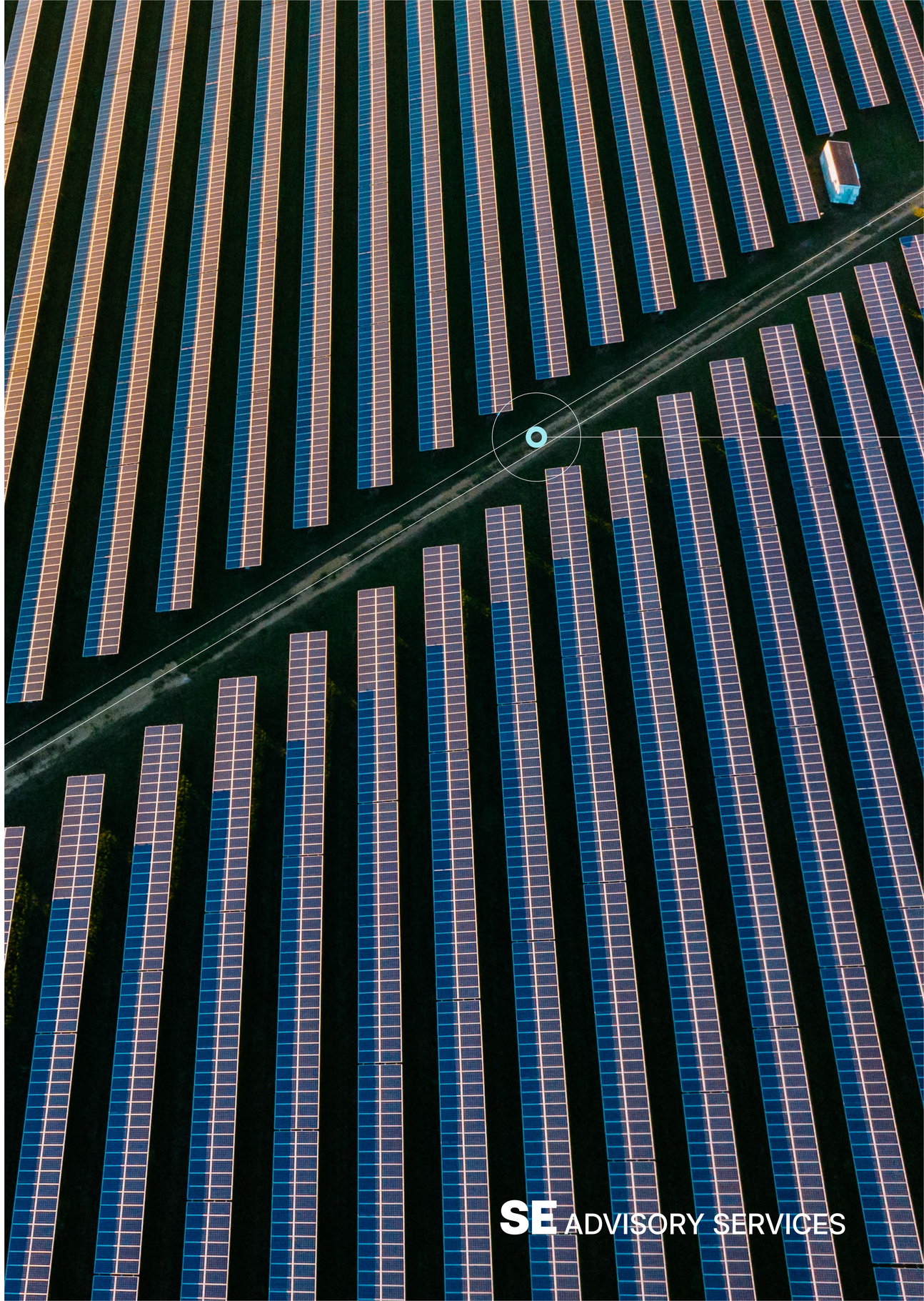
Absolute Reduction Target Pathway for All Companies	Alternative Pathway for Climate Solutions Companies
Companies offering climate solutions are required to set absolute reduction targets by stakeholders, as companies with intensity targets are perceived as “less sustainable”	The positive societal impact of climate solutions companies is recognized, and intensity reduction pathways become an option for them in net-zero frameworks
Compelled to reduce absolute emissions, climate solutions companies must restrict their growth	Companies offering climate solutions scale up quickly, bringing low carbon alternatives to more customers
Climate solutions develop at a slower pace. Reliant on these limited suppliers, conventional companies decarbonize more slowly, delaying overall societal decarbonization	Climate solutions contribute to faster decarbonization across sectors, benefiting both conventional companies and society as a whole

Consider this example:

> *A company develops a low-carbon energy solution capable of replacing fossil-based energy production. As market demand grows for this solution, the company must scale up and expand its infrastructure. While this expansion may increase the company's absolute emissions, it simultaneously displaces more carbon-intensive alternatives, creating a net-positive impact on overall emissions.*

This case illustrates an important distinction between evaluating companies in isolation versus considering their role in systemic decarbonization. Achieving the right balance may sometimes require prioritizing short- to mid-term increases in a climate solutions company's emissions to achieve greater emissions reductions across society.

Furthermore, conventional companies depend on the expansion and availability of climate solutions to achieve their own net-zero commitments. Policies that constrain the growth of these solutions can therefore become counterproductive to the ultimate goal these frameworks seek to achieve: global, societal decarbonization.



A Way Forward: The Climate Solutions Framework (CSF)

How can we resolve this tension between enabling growth in climate solutions while ensuring global reduction targets are met? The answer lies in a more nuanced approach to target-setting.

While absolute emission reductions targets remain essential for most companies and should continue to be the primary approach for conventional businesses, qualified climate solutions companies require metrics that better account for their systemic impact. As frameworks in this space continue to evolve, there is growing recognition of this need for nuance. The SBTi, in its recent draft Corporate Net-Zero Standard Version 2.0 (March 2025)[2], maintains a strong focus on absolute targets while also exploring alternative approaches, including new "non-emission" metrics like "the share of revenue derived from net-zero aligned products and services." Such approaches could potentially recognize the value of climate solutions like oat-based alternatives to dairy products. To address these challenges effectively, we need robust safeguards with clear, science-based criteria to identify genuine climate solutions and the companies developing them. The Exponential Roadmap Initiative (ERI)[3] in collaboration with Oxford Net-Zero[4] has pioneered such an approach. Their Climate Solutions Framework (CSF)[5] establishes rigorous standards that ensure accountability while enabling the growth of truly impactful solutions.

According to the Framework:

> A climate solution is a product or service that meets a need in society, contributes to the reduction of GHG emissions and has significantly lower emissions than business-as-usual options.

2 https://sciencebasedtargets.org/consultations/cnzs-v2-initialdraft | **3** https://exponentialroadmap.org/ | **4** https://netzeroclimate.org/ | **5** https://exponentialroadmap.org/wp-content/uploads/2024/07/Climate-solutions-framework_v1.0.pdf

The ERI Climate Solutions Framework sets a high bar: **to qualify as a climate solution, a product or service must demonstrate a carbon footprint at least 50% lower than the market-weighted average of alternatives OR fulfill a credible intensity threshold per functional unit for a net-zero world.** This ensures that only genuinely transformative innovations receive this designation.

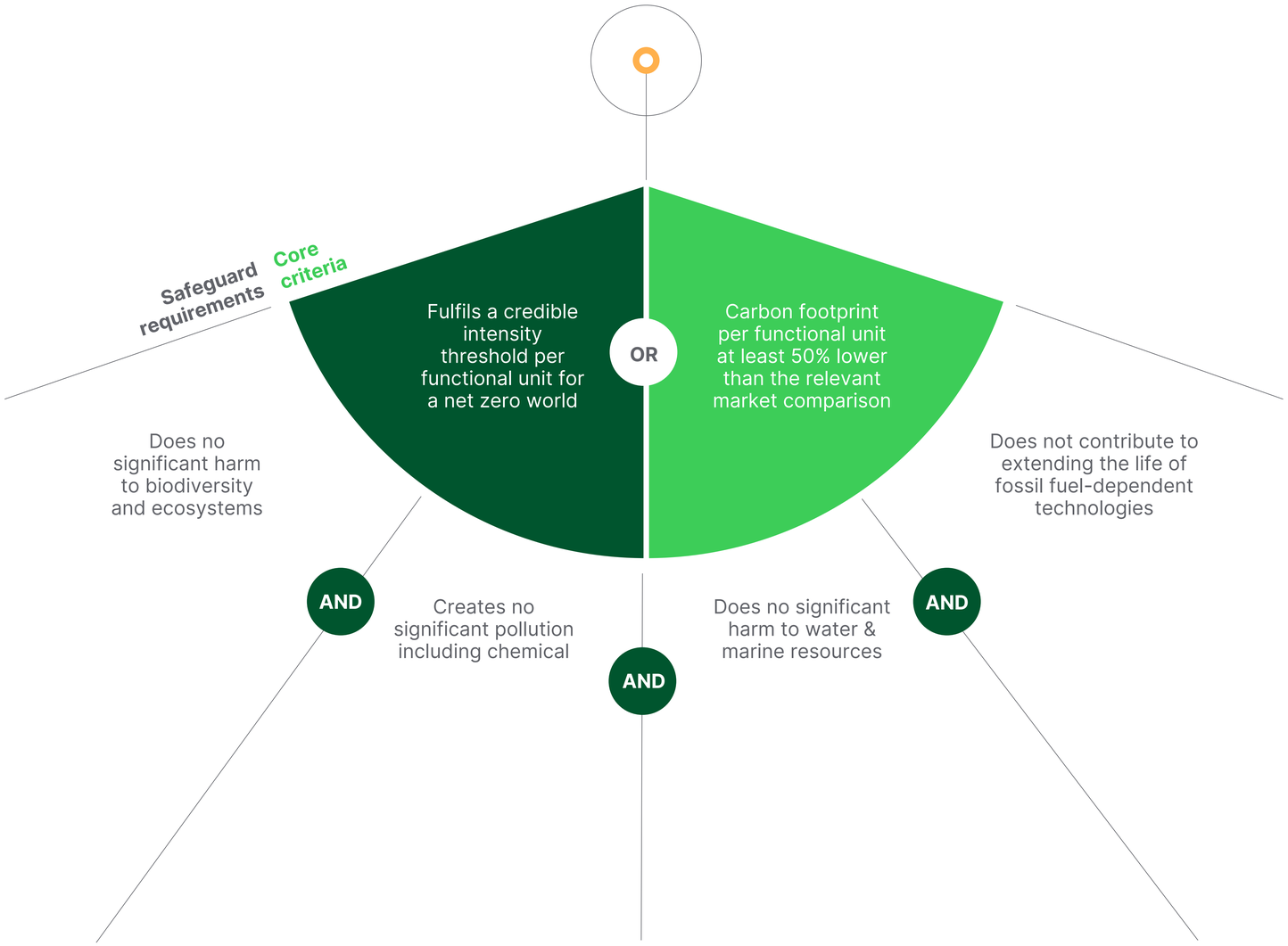


Figure 2
The Exponential Roadmap Initiative (ERI) Climate Solution Product/Service Criteria & Safeguards.

For a company to qualify as a climate solutions company, the ERI Climate Solutions Framework requires meeting three specific criteria:

1. **Science-based emission targets and transparency**
   The company must have public interim and net-zero climate targets[6] covering all emissions (Scopes 1, 2, and 3), a Climate Transition Plan, and must disclose progress annually.

2. **Climate solution-focused business model**
   More than 90% of the company's revenues must come from climate solutions.

3. **Sector transformation**
   The company must be actively working to transform its broader sector.

Climate solutions must also meet safeguard requirements, including not contributing to extending the life of fossil fuel-dependent technologies and doing no significant harm to water resources, pollution control, and biodiversity.

Real-world examples of climate solutions include electric cars in shared use, near zero steel, and plant-based food.

Each of these innovations represents a step-change improvement over conventional alternatives, not merely an incremental gain.

6 A net-zero target is defined as achieving a state where value-chain emissions are reduced to a level consistent with limiting warming to 1.5°C, and any remaining emissions are neutralized through permanent carbon dioxide removal.

Aligning Growth with Climate Action: Oatly's Implementation of the Climate Solutions Framework

The food sector is responsible for approximately one-third of global greenhouse gas emissions (GHGs)[7].

Within this sector, the production of animal-based foods generates twice the GHGs of plant-based foods[8]. 80% of the agricultural land is used for livestock, while meat and dairy provide only 17% of the global calorie supply[9]. These significant imbalances underscore the environmental challenges in current food production systems and highlight why solutions that reduce emissions intensity in the food sector are critical for addressing climate change.

As the Original Oat Drink Company, Oatly exemplifies how climate solutions companies can address these challenges. By offering oat-based alternatives to dairy products, the company provides a transformative solution for reducing the food sector's climate impact.

To accelerate climate action, Oatly believes that scaling up production is crucial. The strategy acknowledges that while absolute emissions may increase with production volume, the overall climate impact remains positive because Oatly's products have a significantly lower carbon footprint compared to the conventional cow's dairy alternatives they replace in the market[10].

To minimize the increase in absolute emissions during this growth phase, the company will prioritize reducing emissions intensity through efficiency improvements and decarbonization initiatives across its operations and supply chain.

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7 Crippa, M., Solazzo, E., Guizzardi, D. et al. Food systems are responsible for a third of global anthropogenic GHG emissions. Nat Food 2, 198–209 (2021). https://doi.org/10.1038/s43016-021-00225-9 | **8** Xu, X., Sharma, P., Shu, S. et al. Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods. Nat Food 2, 724–732 (2021). | **9** https://ourworldindata.org/environmental-impacts-of-food?insight=half-of-the-worlds-habitable-land-is-used-for-agriculture#key-insights
10 Validated based on multiple ISO conformant, critically reviewed comparative LCAs conducted by Blonk Consultants for key Oatly products and markets. https://blonksustainability.nl/news/LCAs-Oatly

The food sector is responsible for approximately one-third of global greenhouse gas emissions (GHGs).

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Setting Intensity-Based Targets: How Oatly Collaborated with SE Advisory Services

Acknowledging the constraints of existing net-zero frameworks for companies providing climate solutions, Oatly sought an alternative approach to climate target-setting that would enable business growth while being science-aligned and contributing to a net-zero world.

Oatly collaborated with SE Advisory Services, Schneider Electric's global consulting branch, to review its climate targets for 2030, 2040 and 2050. The primary focus was to assess alignment with various net-zero frameworks.

SE Advisory Services conducted a comprehensive review of major net-zero frameworks including the Science Based Targets initiative (SBTi), Race to Zero[11], ISO Net-Zero Guidelines[12], and the ERI Climate Solutions Framework[13]. This analysis identified the Climate Solutions Framework as the most appropriate foundation for Oatly's position, given the company's role in providing alternatives to higher-emission conventional dairy products.

The central question in the assessment against the Climate Solutions Framework was whether Oatly's products fulfilled ERI's requirement of having a minimum 50% lower product climate footprint (on average) than the market average category they replace, in Oatly's case the 'milk'[14] category.

The Framework also identifies more ambitious preferable targets of 75% and 90% lower emissions compared to the market average. EcoAct reviewed the assumptions behind Oatly's market average scenario for both the projected growth and anticipated decarbonization of the conventional cow's milk industry as well as the decarbonization potential and the share of plant-based milks in the category.

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11 https://climatechampions.unfccc.int/system/race-to-zero | **12** https://www.iso.org/netzero | **13** https://exponentialroadmap.org/wp-content/uploads/2024/07/Climate-solutions-framework_v1.0.pdf | **14** Weighted average of the different 'milk' alternatives in the market, plant-based milks and cow's milks according to their share in the market. This is also referred to as "BAU" in the ERI Climate Solutions Framework.

Through detailed modeling and analysis, SE Advisory Services:

- Assessed that Oatly's products qualify as climate solutions under the ERI Climate Solutions Framework (Oatly has independently received official qualification from the ERI confirming this status).
- Assessed that targets align with the global Carbon Law concept, which proposes halving global emissions every decade to support the Paris Agreement's goal of limiting global temperature rise to 1.5°C above pre-industrial levels and achieving societal net-zero emissions.
- Identified additional emissions reduction opportunities across Oatly's value chain.

Using 2020 as a base year, SE Advisory Services recommended Oatly to pursue intensity-based targets exceeding the minimum 50% threshold compared to the market-weighted average for the 'milk' category, preferably approaching 75% (equivalent to halving emissions twice, per the Carbon Law). This ambitious recommendation also accounts for a potentially higher degree of decarbonization in the 'milk' category, beyond the one forecasted at the time of this work.

Based on these recommendations, Oatly established a progressive series of ambitious targets that ultimately reach the ERI's highest preference level - 90% lower climate footprint compared to the 'milk' market average by 2050:

2030

40%

reduction in emissions per liter of product from 2020 baseline (equivalent to at least 60% lower climate impact than the 'milk' market average in 2030).

2040

70%

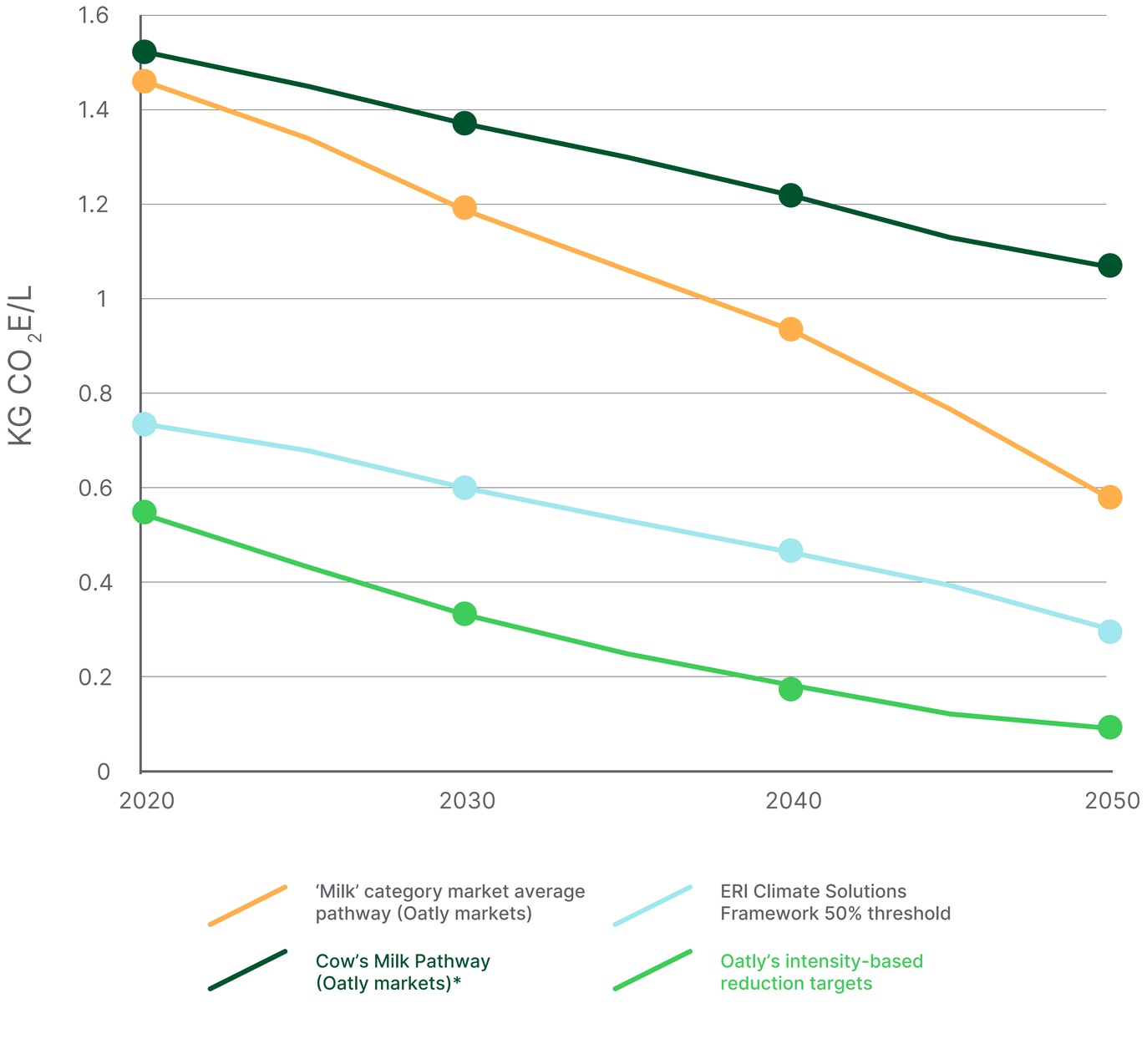
reduction in emissions per liter compared to 2020 (equivalent to at least 75% lower climate impact than the 'milk' market average in 2040).

2050

89%

reduction in emissions per liter compared to 2020 (equivalent to 90% lower impact than the 'milk' market average in 2050), with remaining emissions counterbalanced through durable carbon removals.

Figure 3
Oatly's intensity-based reduction targets (2020-2050).



* According to the SBTi dairy commodity pathway, climate impact of dairy is expected to decrease from 22% to 39% by 2050. In this graph we have assumed an average 30% reductions occurring linearly from 2020 to 2050

To establish its contribution to societal net-zero, and having set interim and long-term climate reduction targets, Oatly also applied and qualified in May 2025 as a climate solutions company under the ERI Climate Solutions Framework, making the above targets a commitment to remain a climate solutions company in the long run.

What makes this approach particularly significant is that qualified climate solutions companies remain fully aligned with the Carbon Law and 1.5°C pathways even when implementing intensity-based targets instead of absolute reduction targets. This creates a vital new option for innovative companies driving systemic change.

This approach fundamentally reframes the relationship between business growth and climate action. By focusing on emissions intensity rather than absolute emissions, Oatly can scale its production - replacing more high-emission dairy products - while still adhering to rigorous climate standards. The strategy transforms what would typically be seen as a climate challenge (growth-related emissions) into a powerful climate solution (market transformation through scaled alternatives).

By establishing these ambitious intensity targets, Oatly illustrates a crucial evolution in climate target-setting: the need to differentiate between companies reducing their own footprint and those providing solutions that enable broader societal decarbonization. This sets a precedent for how companies driving systemic change can align their growth with global climate goals.

Evolving Net-Zero Frameworks for Greater Impact

This paper highlights opportunities to enhance existing net-zero frameworks to better accommodate climate solutions companies. **We propose the following key actions:**

1.
Expand net-zero frameworks to enable climate solution growth

2.
Adopt intensity-based targets for qualified climate solutions companies

3.
Transform how industry evaluates climate leadership

1.

Expand net-zero frameworks to enable climate solution growth

Existing net-zero frameworks, while effective for conventional companies, need enhancement to accommodate climate solutions companies. Current approaches requiring absolute emission reductions from all companies, overlook how climate solutions companies uniquely contribute to decarbonization by enabling significant emission reductions across society when their lower-carbon products replace conventional alternatives. Their need to scale is essential for accelerating broader decarbonization efforts. Also, optimizing their own operations further reduces societal emissions, even if reductions are not absolute. Operation optimization leads to fewer emissions per unit, further widening the emissions gap between conventional products and climate solutions.

2.

Adopt intensity-based targets for qualified climate solutions companies

The methodology demonstrated in this case study shows how intensity-based targets can maintain alignment with 1.5°C pathways while enabling necessary growth. The ERI Climate Solutions Framework provides the science-aligned validation for this approach, offering rigorous criteria to identify which companies should qualify for this differentiated pathway.

3.

Transform how industry evaluates climate leadership

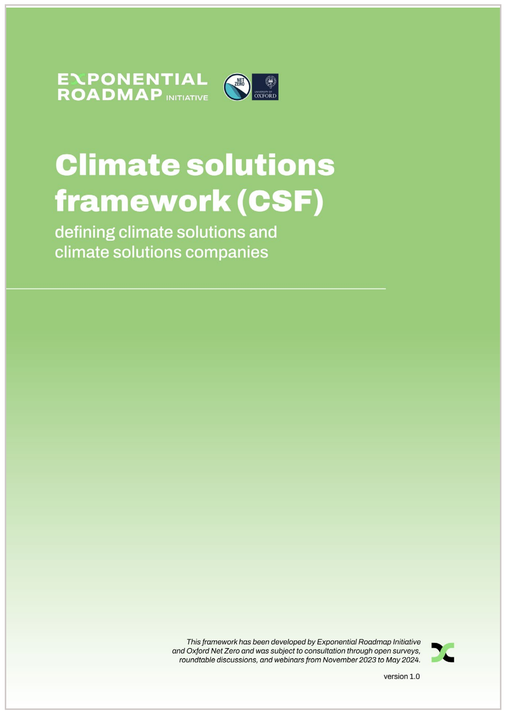
Companies, frameworks, and stakeholders must take specific actions:

- Climate frameworks should adopt the ERI Climate Solutions Framework (or equivalent) as an officially recognized pathway for climate solutions companies.
- Climate solutions companies should follow Oatly's example by qualifying under the ERI Climate Solutions Framework and setting intensity-based targets.
- Companies should accept the ERI Climate Solutions Framework qualification from their suppliers as a valid net-zero framework, preventing the exclusion of innovative solutions from supply chains.

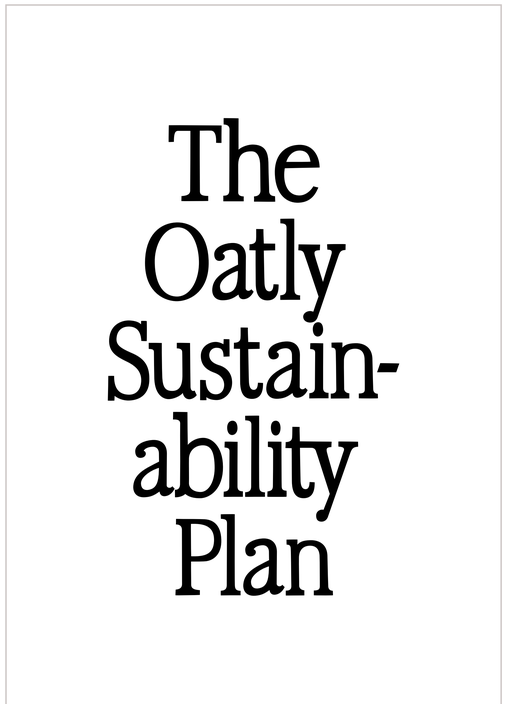
It is important to emphasize that this differentiated approach is not about lowering ambition or avoiding responsibility. For the vast majority of companies, absolute emissions reduction targets remain the appropriate and necessary method for aligning with global climate goals. However, for the specific subset of companies providing genuine climate solutions that meet rigorous criteria, a more nuanced approach can accelerate broader societal decarbonization while maintaining scientific integrity.
We acknowledge that market substitution effects are complex - increased production of climate solutions may not result in perfectly proportional reductions in conventional alternatives due to market dynamics. Nevertheless, the systemic transformation enabled by scaling climate solutions remains crucial for long-term decarbonization.
As frameworks continue to evolve, we must ensure they accommodate the full spectrum of actions needed to achieve a net-zero future.

Learn More About Oatly's Approach

Explore Oatly's Sustainability Plan 2025 and discover how we are implementing intensity-based targets while qualifying as a climate solutions company:



[The Exponential Roadmap Initiative's Climate Solutions Framework]



[Oatly's Sustainability Plan 2025]

We invite you to join us in evolving existing net-zero frameworks to effectively integrate climate solutions companies. Together, we can strengthen current standards and methodologies to drive the rapid scaling of climate solutions while maintaining scientific integrity and accelerating global societal decarbonization.

For more information on implementing this approach in your organization, **reach out to SE Advisory Services team**.

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Glossary

Absolute emissions:
The total amount of greenhouse gases emitted by an organization, expressed in metric tons of carbon dioxide equivalent (tCO2e). These represent the actual volume of emissions released, regardless of business growth or output.

BAU/market weighted average:
In the ERI Climate Solutions Framework, solutions are compared to the relevant average footprint of the products/ services being replaced. As an example, Oatly's drinks need to be compared with the weighted average footprint of the 'milk' category, which is the average of cow's milk and other plant-based drinks using their volume shares in the market.

Carbon Law:
A concept introduced by Stockholm Resilience Centre in 2017 that proposes halving global emissions every decade to align with the Paris Agreement's goal of limiting global temperature rise to 1.5°C above pre-industrial levels and achieving societal net-zero emissions.

Conventional companies:
Organizations operating with traditional business models and production methods that typically have higher emission intensities than climate solutions companies. These companies focus primarily on reducing their own emissions rather than providing solutions for broader societal decarbonization.

Conventional options:
Traditional products and services with higher emission intensities that climate solutions aim to replace (e.g., fossil fuel-based energy, animal-based foods, traditional steel production, internal combustion vehicles).

Emissions intensity:
The volume of greenhouse gas emissions per unit of economic output or physical production (e.g., tCO2e per million dollars of revenue or kgCO2e per liter of product). This metric allows for comparison of emissions efficiency across different scales of operation.

About SE Advisory Services

SE Advisory Services helps organizations turn bold sustainability, energy, and digitalization ambitions into measurable impact. Backed by Schneider Electric—the world's most sustainable company—we combine deep expertise, global implementation, and AI-powered software to drive transformation across energy and risk management, decarbonization, nature-based solutions, operational efficiency, and digital transformation. Operating in over 100 countries, we turn complex challenges into competitive advantage.

To learn more about our solutions, visit SEadvisoryservices.com.

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