ecoinvent

Year in Review 2024

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Letter from the Board

Dear reader, When our institutes established the ecoinvent Association in spring 2013 —after having engaged in ecoinvent-related activities for more than fifteen years as a common project—we transferred six people to this new organization.

Since then, the team has grown by more than a factor of twelve, enabling today's ecoinvent to handle many more topics internally, but simultaneously requiring more structure to keep all these activities efficient and goal-oriented. To achieve this, the Board of Directors decided in 2021 to install a management team under the lead of a Chief Executive Officer (CEO); a management team with competences and capacities going well beyond our technical knowledge in the field of life cycle assessment—with this latter lead by our Chief Technology Officer (CTO).

2024 saw some major improvements with the arrival of our Chief Revenue Officer (CRO) and our Chief Product and Technology Officer (CPTO)—allowing ecoinvent to further develop not only the outreach to an expanding client base, but also to more efficiently and competently develop the numerous software elements required to remain at the forefront of comprehensive, up-to-date and transparent environmental data supply for a broad variety of products and services.

↘ p.16

To ensure that the management team receives the best support possible from the organization, we have also made some important adjustments to the Board of Directors, which serves as the steering body of ecoinvent. The new Board, in place since the beginning of 2025, is comprised of three representatives from our founding members (currently representing ETHZ, EPFL, and Empa), as well as two external experts from the fields of business strategy as well as product and service innovation.

↘ p.10

Last but not least, on behalf of the entire ecoinvent Board of Directors, I would like to use these few lines here to express our deep gratitude to all the people who continue to contribute to ecoinvent's success in their various roles, be that as a customer, as a team member, or as any other kind of supporter of our mission—to provide high-quality, science-based environmental information on the environmental impacts of a broad range of products and services.

↘ p.8

Sincerely,
Roland Hischier
President of the Board

Dear ecoinvent community,

As we look back on 2024, we do so with both gratitude and perspective. This has been a year of momentum and reflection—a time when the challenges of our broader world stood in sharp contrast to the clarity of mission and purpose that continues to define our work at ecoinvent. While uncertainty shapes global systems, our focus remains steady: enabling better decisions through high-quality, transparent environmental data.

2024 was a foundation-building year for ecoinvent. We began ramping up our software capabilities, grew our database expert team, and laid the groundwork for expanding global sales operations. We continued advancing our internal journey toward functional excellence and set key cornerstones for the next stage of innovation—bringing future versions of the ecoinvent database to life.

Our approach to collaboration is rooted in being a strong ecosystem partner. We support the growing range of use cases developed around our data, and throughout 2024, we saw rising demand for high-quality life cycle information. We deeply value our interactions with partners, both new and long-standing. ecoinvent data does not only inform how products are designed and how policies are shaped—it often serves as the foundational layer in other databases. We're also proud to support global organizations that are going beyond mandated reporting, embedding environmental decision-making into their strategies and gaining long-term sustainable competitive advantages.

Letter from the Management

As the first months of 2025 pass, we are reminded of our world's deep interconnectedness. This moment reinforces the need for scientific integrity, independent data, and an unwavering commitment to sustainability. In times of change, institutions like ecoinvent—built on rigor, neutrality, and transparency—become even more essential. When the world wavers, data remains the bedrock of truth. It is the foundation upon which companies, researchers, and policymakers can stand.

To our team: thank you. Your excellence, your dedication, and your belief in our mission have shaped everything we've achieved this year. To our partners, users, and collaborators around the world: we are grateful for your trust, your engagement, and your commitment to environmental sustainability.

Together, we are not only navigating change—we are building the future we believe in.

Kind regards,
the ecoinvent Management team

Nickolas Meyer
Chief Executive Officer

Emilia Moreno Ruiz
Chief Technical Officer

Ondrej Szabo
Chief Revenue Officer

Nick Van Berckelaer
Chief Product &
Technology Officer

The ecoinvent Mission & Values

ecoinvent is an internationally active, mission-driven organization dedicated to delivering high-quality, science-based environmental data. **We provide the most robust data-based insights to help our global community of users make essential sustainability decisions. Our users include policymakers, academia, private enterprises, and NGOs.**

Our dedicated team of experts comprises professionals from diverse backgrounds, including environmental science, data management, and life cycle assessment. With decades of collective experience, we are committed to maintaining the highest standards of quality, transparency, and consistency in environmental data.

Founded by Swiss research institutions ETH, EPFL, Empa, Agroscope, and the Paul Scherrer Institute, ecoinvent continues to lead in sustainability data innovation.

RARA!

In 2023, ecoinvent underwent a transformative rebranding marked by a rigorous examination of its core values. A leadership workshop was convened, reflecting on the organization's evolution since its founding two decades ago. From this introspection emerged four guiding principles— RESULTS-DRIVEN, APPROACHABLE, ROBUST, and ADVENTUROUS— capturing ecoinvent's ethos and vision for the future.
These values encapsulate the organization's commitment to delivering tangible sustainability solutions, fostering collaborative engagement, ensuring data integrity, and embracing innovation. With this renewed focus, ecoinvent embarks on its next phase of growth, poised to make a lasting impact in the realm of environmental sustainability.

We provide the most robust data-based insights to help customers make essential sustainability decisions.

results-driven

At ecoinvent, we are results-driven. We focus on achieving tangible outcomes that make a significant impact.
This principle is rooted in three key attributes:

Purposeful
Pragmatic
Realistic

adventurous

Our adventurous spirit drives innovation and forward-thinking. It is characterized by the following attributes:

Optimistic
Ambitious
Creative

robust

Robustness in our work and data reflects our commitment to promoting decision-making for sustainability.
This means that we are:

Expert
Precise
Resilient

approachable

Our approachability is central to how we interact with partners, users, and the broader community. This principle encompasses the following attributes:

Engaging
Open
Confident

The ecoinvent Board in 2024

We welcomed two new Board members to ecoinvent, introducing Natalie Robyn and Markus Popp. We also said a fond farewell to Christian Bauer and Gérard Gaillard, who have left.

Our current Board comprises three of our founding institutes, ETH, EPFL, and EMPA. Our other founders, PSI and Agroscope, remain active members of our Association and General Assembly.

Our board today:

Roland Hischier
Board President, LCA Group
Leader EMPA

The Board needs to ensure that all the activities that the management proposes are in line with the vision, mission, and the strategy of ecoinvent – and like this ensures the long-lasting life of the association.

Natalie Robyn
Board Vice President

I hope to support in establishing ecoinvent to continue to flourish as a standard sustainability decision-making tool to accelerate innovation for a business culture shift to data-driven decision making for environmental impact assessment.

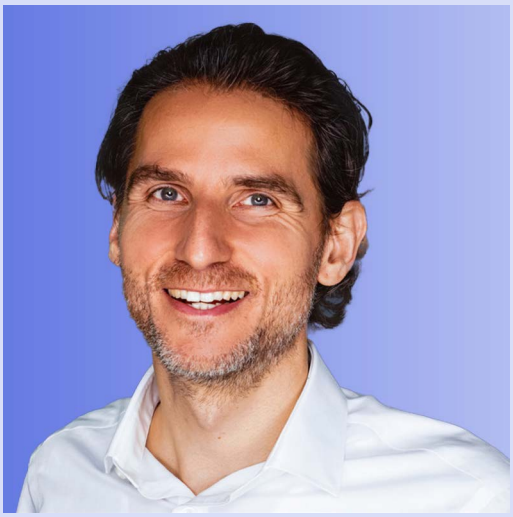
Véronique Michaud
Associate Professor EPFL

The Board needs to collaborate with ecoinvent to help them fulfill their mission, evolve, and continue to bring the most adapted and efficient tools to the growing and diversifying pool of users.

Stephan Pfister
Adjunct Professor ETH

There is a need to balance the business demand for easily accessible LCI data with the quality and transparency to maintain credibility in LCA.

Markus Popp
Founder & CEO,
mühlemann+popp



As a Board member, my responsibilities are closely aligned with my strengths in product development and general management.

2024 Highlights

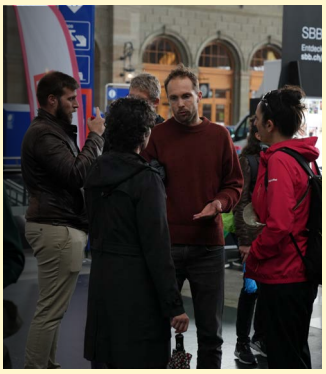
In 2024, we released ecoinvent version 3.11, which contains over 25,000 datasets, making this the largest version we have ever released. With more data available than ever before, we enable more nuanced decision-making across the many sectors of our database.

Our continued growth, new management members, events, and engagements contributed to our mission to empower data-driven decisions for a sustainable future. Read on for our highlights from the past year.

The ecoinvent Team

The ecoinvent team is international, diverse, and committed to our organization's mission to provide high-quality data by publishing the world's most comprehensive LCI database. As a team, we look forward to opportunities to come together to celebrate various festivities and successes. While fostering a collaborative and positive team culture at ecoinvent, we socialized, explored, and enjoyed lots of good food!

Keeping fit with a Zurich fox trail...



...and the Swiss Bike to Work challenge.

Networking together at apéros and our summer barbecue...

...and feeling festive at the zoo.

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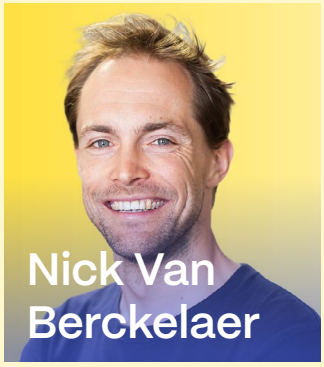
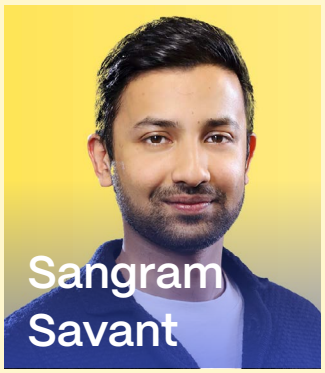
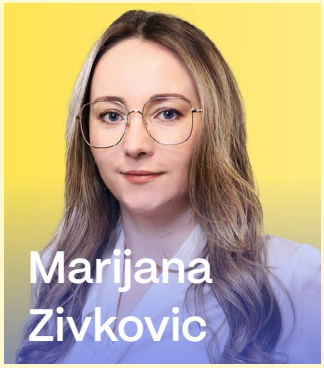
new talents

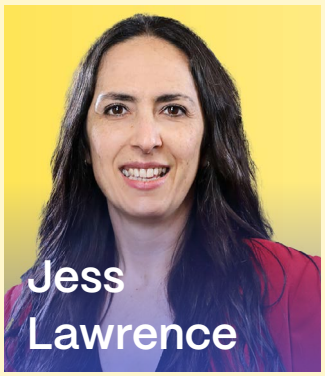
Our new team members contribute new skills and perspectives from many nations, nurturing new ideas and intelligent discussion. This growth enables us to advance our mission to promote and support the availability of high-quality environmental data worldwide.


Nick Van Berckelaer


Guy Hurford

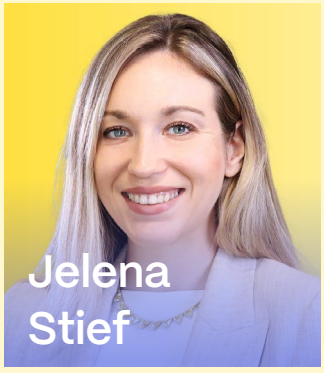

Sangram Savant

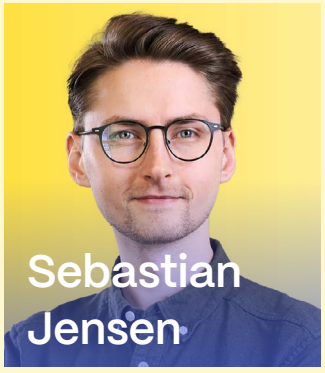

Marijana Zivkovic

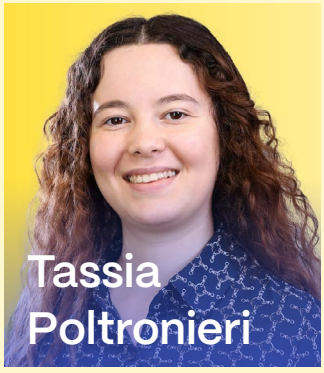

Jess Lawrence

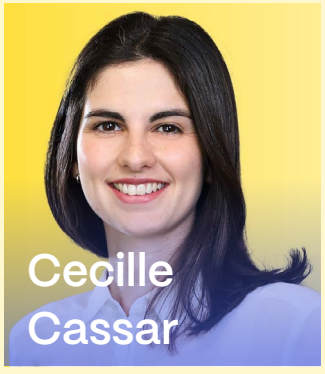

Cristian Muriel Ordoñez


Melissa Wilkinson

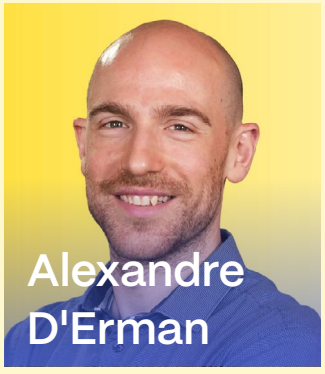

Jelena Stief


Sebastian Jensen

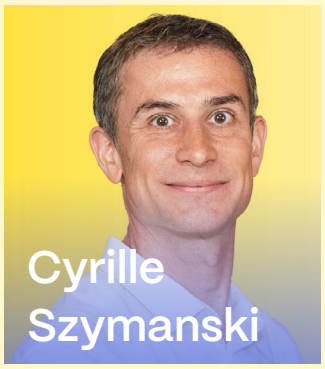

Tassia Poltronieri

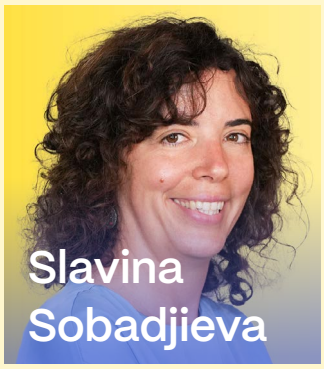

Cecille Cassar

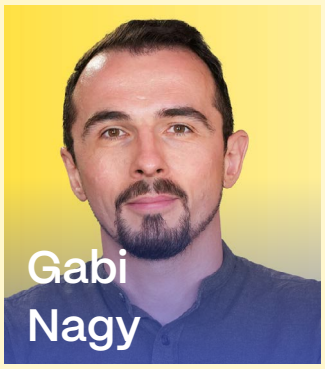

Erianna Milia

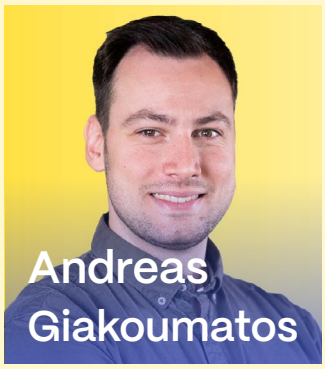

Alexandre D'Erman


Johann Leopold


Cyrille Szymanski

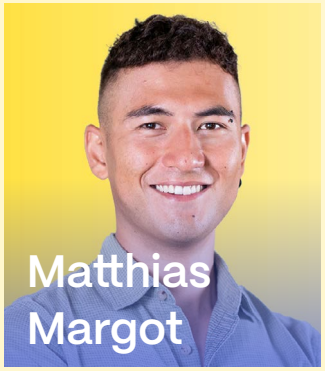

Slavina Sobadjieva

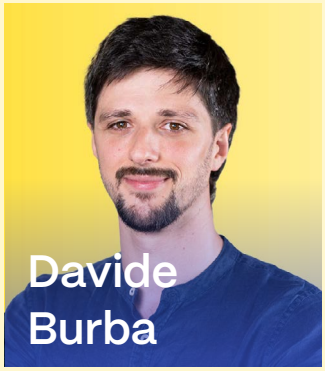

Gabi Nagy

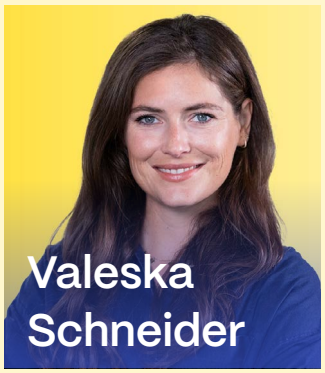

Andreas Giakoumatos

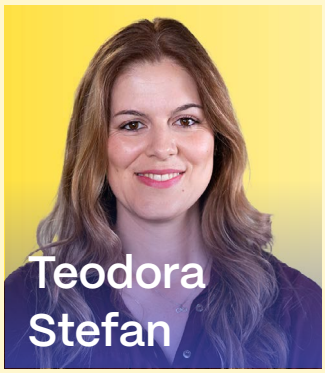
a warm welcome

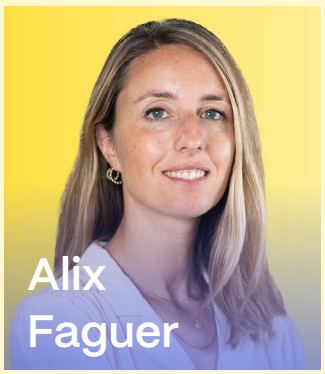
to our new colleagues

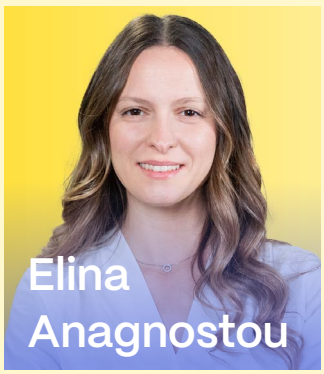

Matthias Margot

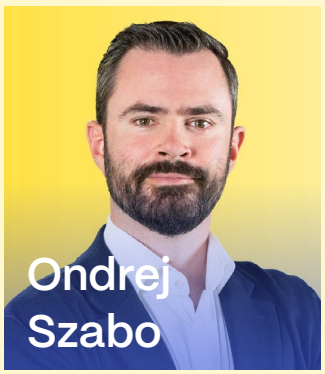

Davide Burba

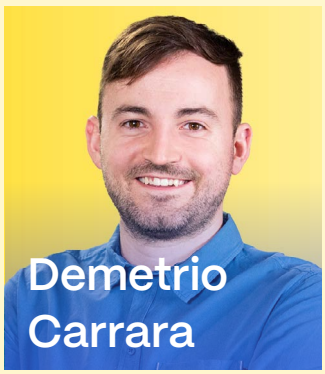

Valeska Schneider

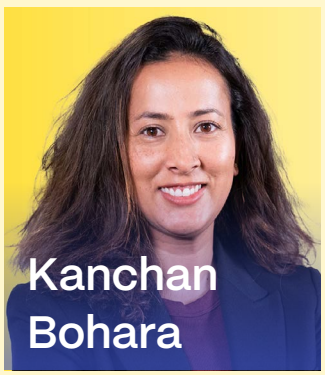

Teodora Stefan


Alix Faguer


Elina Anagnostou


Ondrej Szabo


Demetrio Carrara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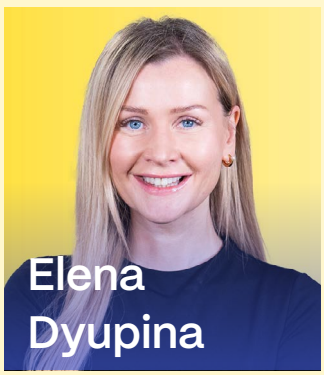
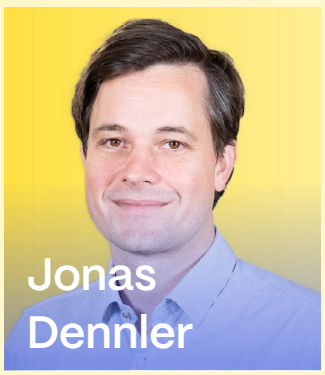

Elena Dyupina


Jonas Dennler

see our full team

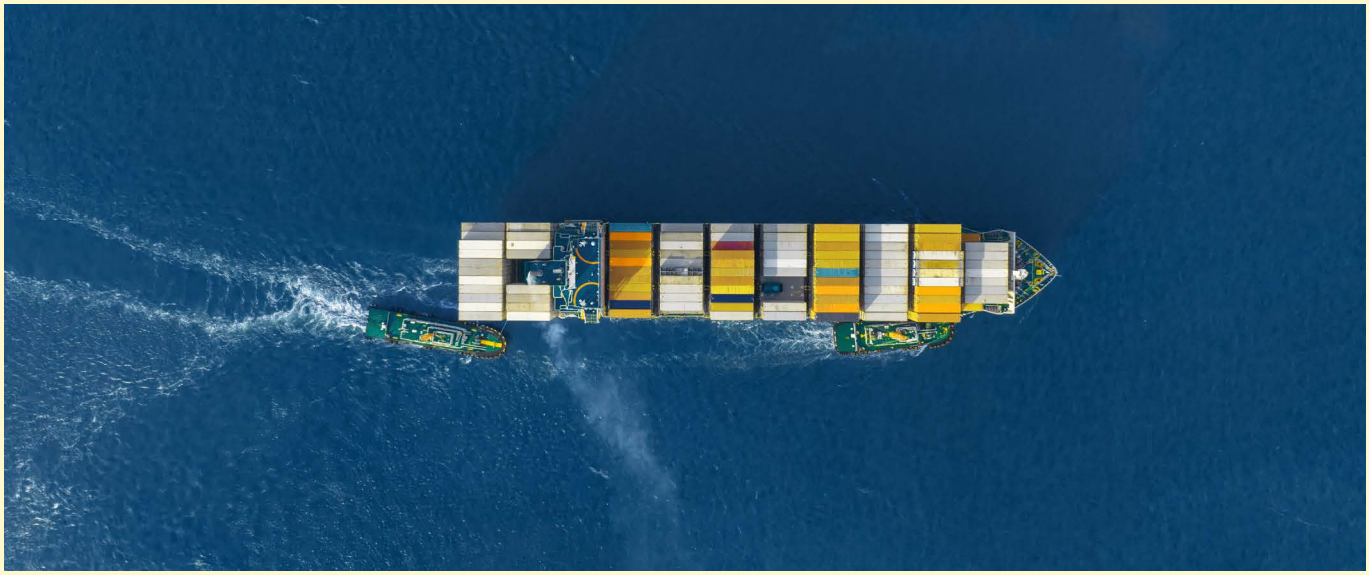
Ondrej Szabo
Chief Revenue Officer
↙

At its core, ecoinvent is fueling the adoption of sustainability analytics globally and enabling innovation across multiple domains, from academia and startups to major enterprises. In an era where scrutiny on sustainability efforts might be on the rise, it is more important than ever to double down on our commitments: To drive LCA adoption, globally and at scale. I am honored to be, together with my team, at the forefront of this through engaging with our partners and customers.

Team Spotlight: Chief Revenue Officer

Last year, we welcomed Ondrej Szabo to the management team in the role of Chief Revenue Officer (CRO).

As CRO, Ondrej is fundamental in expanding the organization's global client base and shaping a customer-centric commercial strategy. As the sustainability space continues to grow, he is committed to positioning ecoinvent at the forefront of this field, ensuring the organization continues to add value and advance its mission. With a strong background in market intelligence, analytics, and SaaS, Ondrej brings a wealth of experience from leadership positions across Europe, Asia, and South America. With Ondrej's leadership, ecoinvent is well-positioned to accelerate its growth and continue providing impactful data solutions for a more sustainable future.



Team Spotlight: Chief Product & Technology Officer

In 2024, we were excited to announce Nick Van Berckelaer's promotion to Chief Product & Technology Officer (CPTO). Nick joined ecoinvent in 2023 as Head of Software Product Development, and we are confident that his leadership in this new role will continue to propel ecoinvent forward, helping us achieve our mission and deliver greater value to our users and the broader sustainability community.

As CPTO, Nick provides strategic direction in software product development. He leads the development of innovative technology and products that will position ecoinvent to take the next leap in its growth and play a key role in redefining the sustainability data market. Additionally, he oversees the entire software product lifecycle from ideation to implementation, and he focuses on aligning product development with customer needs and emerging industry trends, driving ecoinvent's continued leadership in the sustainability sector.

Nick Van Berckelaer
Chief Product & Technology Officer
↙

His leadership also extends to mentoring and guiding our product development teams, nurturing a culture of innovation, trust, and accountability. As CPTO, Nick is a key driver of cross-functional collaboration, ensuring that all parts of the organization are aligned and working toward shared goals.

As someone passionate about both technological innovation and environmental sustainability, serving as CPTO at ecoinvent is the perfect intersection of my professional expertise and personal values. In 2024, I've applied my experience in scaling organizations and developing product strategies to reimagine how we produce and deliver environmental data. I'm energized by the foundation we've started to build this year and the expanded impact it will enable in our mission to support better environmental decision-making worldwide.

Database

With our data, stakeholders are enabled to make informed decisions and take meaningful action regarding their environmental impacts.

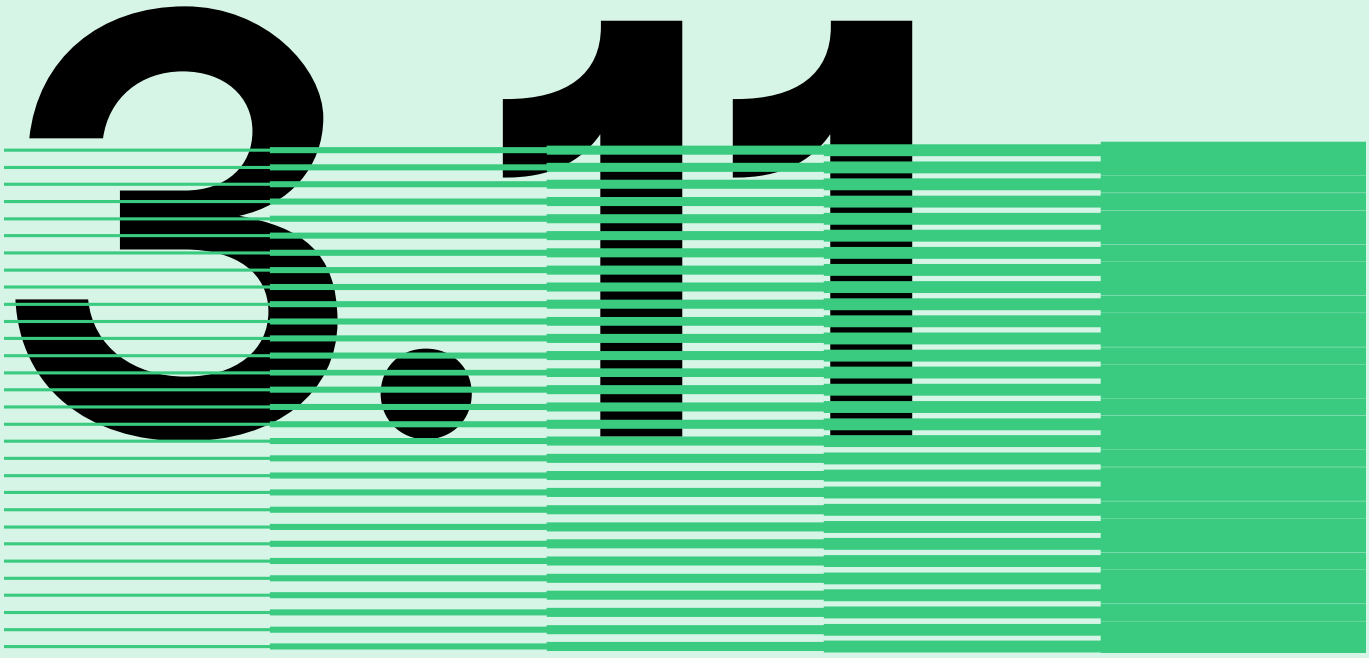
Updated annually, the ecoinvent database reflects the latest data and methodological enhancements.

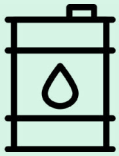
Our stringent data quality guidelines ensure robust modeling methodologies, fostering trust and reliability. Together, these efforts uphold our commitment to transparency, providing stakeholders with the tools they need to navigate the complexities of sustainability and contribute to a greener future.

ecoinvent version 3.11

In November 2024, we released version 3.11 of the database.

This release is the culmination of our work with our many partners from both industrial and scientific institutions, resulting in 2,066 new and 4,497 updated datasets. Let's delve into the highlights of our latest update.





Fuels

ecoinvent 3.11 builds on the comprehensive oil and gas updates of previous versions. We've revised natural gas data for 57 countries, reflecting the latest geopolitical shifts in supply chains. The database now includes updated estimates for pipeline and Liquefied Natural Gas transport and improved data for coal and lignite production, with enhanced regional details.

Chemicals

We've updated key chemical precursors and derivatives. From improved data on carbon monoxide to enhanced datasets for polyvinyl chloride and unsaturated polyester/vinyl ester resins, this version provides a more detailed representation of chemical production chains. New datasets also cover composite manufacturing.

Electricity

The electricity market mixes have been updated for all countries with 2021 data, and Brazil, China, and Switzerland have been updated with 2022 data.

Building and Construction

This sector has been enriched with new cement and clinker production data, reflecting specific Canadian regional practices. Updates also cover a variety of building materials.

Metals

This update expands and improves the data coverage of the metals sector with new and updated data for grain-oriented electrical steel (GOES), 3.2% silicon alloy, and gallium production. Other improvements include updates to dataset properties, such as metal content and prices, the addition of missing exchanges, and renaming.

Batteries

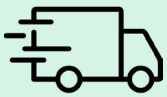
ecoinvent 3.11 introduces new datasets for lithium-ion chemistries, including NMC532 and NMC622, new and updated datasets for natural and synthetic graphite, and expands the coverage of salts and electrolytes for emerging technologies of sodium-ion batteries.

Waste Management and Recycling
We've regionalized municipal waste treatment data for 27 European countries, including Switzerland, Norway, Iceland, and the United Kingdom. New datasets on mechanical and chemical recycling processes of waste plastic in Europe and China provide deeper insights into the fate of waste plastic.

Agriculture
ecoinvent 3.11 introduces 136 new datasets, covering a range of crops across different regions in Switzerland—from apples to barley— with data on conventional and organic farming methods.

Forestry and Wood
We've updated some existing data and documentation, particularly the production volumes of forestry activities. This sector was also affected by database-wide biogenic carbon corrections.

Pulp and Paper
This sector has been enhanced with three new datasets related to paper-based packaging for fast food applications. The activities model the production of various tableware, such as paper cups and lids, burger wraps, and fry boxes.



Transport
We've updated the circulating fleet of passenger vehicles and introduced new datasets on aircraft maintenance.

↘ Find more details in our 3.11 webinar here.

Online Payments Feature

We streamlined access to our database in 2024 by providing users with a self-service option for license purchases.
We are very happy to announce that our online payment feature is active for our commercial single-user licenses. Once logged into their account, users will find a straightforward process for placing orders, ensuring a quick and seamless transaction using a credit card. Additional information about online payments can be found on our Knowledge Base.

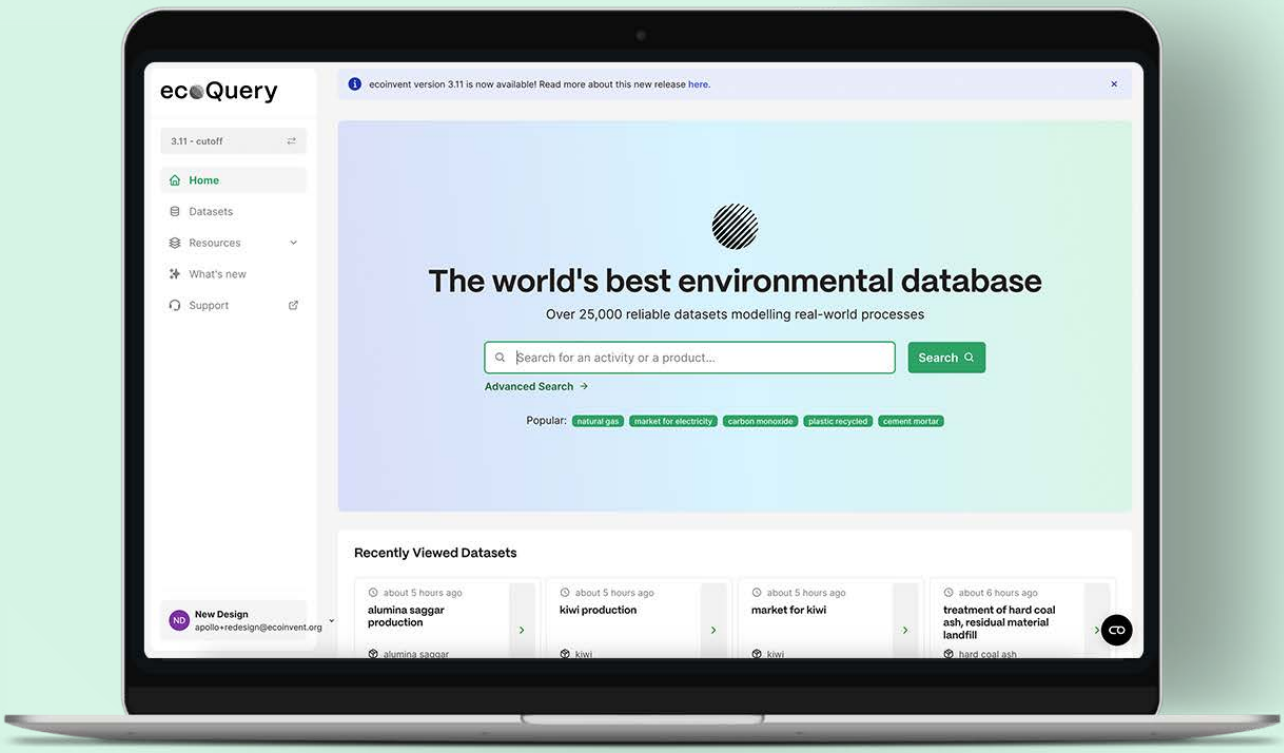
The New ecoQuery

ecoQuery allows our users to access the ecoinvent database and empowers them to leverage high-quality environmental data for informed decision-making and life cycle assessments.

In 2024, we enhanced our data-access platform with the following updates:

- **New Home Page:** Our new home page is designed to facilitate easy exploration. Users can now browse by sector, new, or popular datasets, and new users will benefit from our new guidance section with links to helpful resources.
- **Improved Search:** Users can generate better, more useful suggestions through search. It is now possible to search by product name, activity name, or CAS number.
- **Easier Overview of Results:** We have organized the results overview to reduce duplication and improve readability. Impact scores are also included in search results for users with a version 3.10 license or later.
- **Updated Design:** ecoQuery has been refreshed with a contemporary interface that supports our users' experiences through smart and accessible design choices, with the intention to present the ecoinvent database in a transparent and uncomplicated way. ↘ Read more about the ecoinvent UI

↘ Explore the new ecoQuery



Partnerships

In our commitment to fostering excellence in life cycle inventory data and database management, we engage in collaborative efforts with other organizations around the world. By sharing knowledge and developing methodologies, we advance environmental assessment practices and promote industry-wide standards across diverse sectors and stakeholders.

Partnerships are integral to our mission. With a global network spanning various industries, ecoinvent is a trusted authority in environmental life cycle assessment. From multinational corporations to esteemed universities, our partners share our dedication to sustainable practices and reliance on transparent, high-quality data. Our collaborations in 2024 underscore our commitment to fostering a more sustainable future through shared expertise and resources.

Henkel

Henkel is a global leader in both industrial and consumer goods businesses with a long-term commitment to sustainability. By making sustainability insights accessible across their organization, Henkel has empowered teams in different functions to integrate environmental considerations into their decision-making.

Henkel chose ecoinvent as a trusted and valued background database to support their efforts to measure, manage, and reduce their carbon footprint.

The Henkel approach showcases how environmental data can be leveraged strategically to drive real progress toward net zero.

Their recently defined Net Zero Roadmap (2024) sets ambitious reduction targets and relies on high-quality environmental data. Henkel uses ecoinvent for key sustainability initiatives, including Product Carbon Footprinting and Scope 3 reporting, ensuring their impact assessments are comprehensive and transparent.

Agroscope

Agroscope's LCA Research Group has researched environmental impacts and sustainability assessment in the agriculture and food sector since 2000. Our current partnership aims to combine Agroscope's extensive knowledge and LCA experience with ecoinvent's robust database infrastructure to provide high-quality data for enhancing software tools, informing decision-making processes, and contributing to international sustainability goals.

In 2024, Agroscope submitted 136 datasets, which are available in ecoinvent version 3.11. This data relates to the organic and conventional production of several crops, vegetables, cereals, legumes, and grapes across mountain, hill, and plain regions in Switzerland.

Agroscope and ecoinvent also came together for their first workshop in late 2024 to exchange methodology advancements in the Agriculture and Animal Husbandry sectors and discuss topics such as biogenic carbon and heavy metals and the elemental content of agricultural grounds.

As both a founding member of our organization and a member of the ecoinvent Expert Group and Editorial Group, Agroscope has contributed significantly to the ecoinvent database, specifically in the Agriculture and Animal Husbandry sectors.

Our Data in Action

Mura Technology: Interview with Dr. Geoff Brighty

The plastics recycling sector is at a pivotal juncture, and innovative technologies and data-driven solutions are playing a central role in shaping its future. As the world grapples with the escalating plastic waste crisis, companies like Mura Technology are leading the charge with cutting-edge approaches to turning plastic waste into valuable, sustainable resources.

Mura's Hydro-PRT® technology transforms hard-to-recycle plastics into high-quality, fossil-replacement hydrocarbons for industry, helping close the circular economy loop. Yet, as the sector grows, one of its most significant challenges remains the need for trustworthy, transparent data to guide decision-making and build confidence in new technologies. Mura's collaboration with ecoinvent is central to ensuring the credibility and transparency of its advanced recycling process. By integrating ecoinvent's independently verified datasets into its Life Cycle Assessments (LCAs), Mura can provide stakeholders with high-quality, trusted data that supports the sustainability benefits of their proprietary technology.

In this interview, Dr. Geoff Brighty, Head of Sustainability and R&D at Mura, discusses how the company's partnership with ecoinvent is helping to drive the industry's transition to a circular economy and set a new benchmark for transparency and data integrity in the sector.

Interview with Dr. Geoff Brighty ↘

Geoff, please start by sharing a bit about your journey and how you got involved in the sustainability sector.

My career spans nearly 40 years, with 26 of those working for the Environment Agency – the primary environmental regulator in the United Kingdom. My life in the Agency included science and research management, policy, strategy, and operations. In this latter role, I was responsible for regulating the waste management sector and infrastructure, such as incinerators and landfills. What surprised me was that so little was being done about plastic recycling, with so much material heading for energy recovery.

I left the Agency in 2014 to become a sustainability consultant. I joined up with my good friend Jo Ruxton MBE, who had started the UK's first plastic pollution charity, Plastic Oceans, now called Ocean Generation. While working here, I got interested in the state of plastic pollution and its impacts on marine life and our health. Following the release of our film, A Plastic Ocean, I led policy and technical solution-focused projects for the charity, and that's how I became involved with Mura Technology.

What exactly does your role at Mura Technology entail?

My role as Head of Sustainability is to ensure we can demonstrate how Mura's Hydro-PRT advanced plastic recycling technology delivers important benefits for the circular materials economy and climate through industrial-scale decarbonization of the plastics value chain. This is important for policymakers and the product and packaging value chain, which needs confidence in their LCAs.

Part of my role is commissioning science projects with our fantastic research partners, the Universities of Warwick and Ghent, where we generate new data that underpins our technology development and deployment at an industrial scale. The research includes generating data for Life Cycle Assessments of Mura's process and evaluating a wider range of polymers that Hydro-PRT could process.

Can you explain Mura's core technology and services, particularly how Hydro-PRT works and its potential to transform plastic waste management?

Mura has developed Hydro-PRT, an advanced (sometimes called 'chemical') recycling technology for processing waste plastics that are not considered recyclable via traditional mechanical processes and would otherwise go to incineration, landfill, or leak into the environment. These plastics are post-consumer (and so are considered contaminated), multi-layered, flexible, and rigid materials, so films are a prime example, alongside packaging such as yogurt pots and ready-meal trays.

Our first site will be operational in the UK in 2024 and will take waste from the UK, which means that in addition to diverting it into recycling, it will also be prevented from being exported. The waste for this site arrives in bales, which must be prepared via a series of process steps, including shredding and glass, metals, and non-target plastics removal. The mix is then heated and pressurized in an extruder and fed into the conversion unit. Our use of supercritical water as the agent of change makes us unique in the market – it breaks the carbon-carbon bonds in the plastic, donates hydrogen, and forms shorter-chain, stable circular hydrocarbon products that are sold to the petrochemical industry as a drop-in replacement for fossil oil.

The process creates a circular economy for plastic and replaces the use of fossil resources to manufacture new, virgin-grade plastics. It's also inherently scalable, as the supercritical water surrounds the waste plastic. Mura's first site in Teesside, Northeast England, will place 20,000 tonnes of liquid hydrocarbons onto the market annually.

Mura is developing several other sites in Europe, the USA, and Southeast Asia and sells licenses to the technology through our Global Licensing partner, preferred engineering partner, and investor, KBR. By 2032, Mura aims to have 1.5 million tonnes of advanced recycling capacity in development and operation.

How does Mura Technology contribute to sustainability in the broader recycling industry, and what role does data transparency play in building trust?

Coming from the NGO and regulatory sectors, I am passionate about building trust in Mura's process and the benefits it can bring as we come to a commercial scale. Advanced recycling technologies have shown immense promise in diverting plastic waste from landfills and incineration and reintegrating it into the production cycle, thereby mitigating the environmental impact of plastic consumption. Yet, despite their potential, these technologies have to earn the complete trust and confidence of regulatory bodies, non-governmental organizations, and consumers. We want to overcome this challenge.

Mura has set out four principles for the sector, drawing support from the entire value chain. Foremost of these are access to high-quality data relevant to LCA and independent verification of these data. We have done this by providing data to studies conducted by the European Commission's Joint Research Centre and the Consumer Goods Forum. However, we know that responsible value chain members will need to conduct their own LCA and need confidence in any inventory data they use. That's why we have worked closely with WMG at the University of Warwick and Innovate UK to generate the independent LCA model and, importantly, working with ecoinvent to conduct its peer review and incorporation into their Life Cycle Inventory (LCI) to support broad adoption.

We believe this partnership with ecoinvent enables commercial sustainability companies and their customers to use the data confidently. Moreover, we have agreed to continually update our data within ecoinvent as we develop the technology further and deploy it globally.

In your experience, what are the most significant data challenges faced by experts in your field, and how does Mura overcome them?

In generating models, we often work with design characteristics and expected loads; however, these need to be checked against the actual operation of the plant. We will likely see less energy consumption from some of the processes, such as the waste feed machinery not having to be worked at 'normal' operating speeds, to match the process flow of the Hydro-PRT plant. Overcoming these data challenges requires monitoring steady state operations over reasonable periods – which is crucial in providing our product off-takers with carbon intensity values for their Scope 3 assessments.

"Our data, published by a trusted source in ecoinvent, helps brands explore for the first time what advanced recycling can do to support their efforts on circularity and simultaneously reduce carbon intensity. This, in turn, enables companies to build sustainable business cases to meet their ESG targets."

Moreover, LCA has a sense of false precision—it's never that simple. For example, grid carbon intensity varies hourly, yet we always use annual averages. We are becoming aware that expressing carbon intensity as a range may be more informative to stakeholders. Above all, we should be open about this and develop a better understanding across the sustainability community about how best to calculate and interpret the values we generate.

How has Mura integrated ecoinvent data into its sustainability practices, and how does this support the company's work?

The LCA model developed by WMG at the University of Warwick was published in an academic journal in 2023 – but we realized that commercial companies could not use the data in their client's models because the data outputs had not been incorporated into a reliable LCI. One company then recommended that we engage directly with ecoinvent as they used their LCI.

We approached ecoinvent to see whether the data set – a first for advanced recycling – would be suitable for critical review and incorporation into the next ecoinvent database release, and we then embarked on a partnership approach.

Mura now uses ecoinvent datasets in LCAs for all of its sites, using OpenLCA as the modeling platform.

↘ Read the full interview on our blog

Our Data in Action

PRé: Interview with Eric Mieras

Eric Mieras, Managing Director at PRé, shares insights on life cycle assessment (LCA), the SimaPro software, and PRé's partnership with ecoinvent.

PRé provides fact-based sustainability to its users through knowledge and software. Like ecoinvent, PRé's history in the sustainability sector spans decades, so they understand the importance of data transparency for environmental assessments.

In this interview, Eric Mieras, Managing Director of PRé and a professional at the intersection of sustainability, technology, and professional services, explains how PRé's partnership with ecoinvent has evolved over the last two decades. His insights include discussions on the growing value of LCA, the current necessity for transparent, high-quality data, and the adaptability of ecoinvent's unit process data.

Eric also shares some details from PRé's latest offering, SimaPro Synergy—a product that incorporates ecoinvent data as part of its offer to provide scalable LCA calculations, data integration, and transparent environmental metrics.

Read on to discover where PRé meets ecoinvent.

Interview with
Eric Mieras
↘

Eric, please tell us a bit about your background and what led you to the sustainability sector.

My journey started in 1990 when I studied Environmental Science at University. I have even been a student assistant teaching the course, "Interdisciplinary and Science Theoretical Aspects of Environmental Science." I was lucky that this was the early days because I don't think they would have let me teach this course otherwise. Afterwards, I held a wide variety of roles but in the years before joining PRé, those focused on the intersection of Sustainability, Technology and Professional Services, which also sums up what PRé is doing. My drive to change how businesses operate towards a more sustainable model has been a common factor throughout all those years.

What does your role at PRé entail?
As the Managing Director, I'm responsible for the vision and strategy of the company. To me, the company culture is an important part of that as well. In the end, it is our people who put our vision and strategy into action. I see my role as providing the fertile ground on which our people can thrive and have a positive impact.

Please describe PRé's core activities and services, including the SimaPro software.
We see ourselves as an Intelligence company that provides LCA-based insights through knowledge, data, and software. The knowledge is our consulting team that focuses on capacity building for clients as well as methodological development and guidance. The software is, of course, SimaPro, and the data is something we do together with partners, of which ecoinvent is the most important one, so our users can build their models.

What makes Life Cycle Assessment (LCA) such a powerful tool for understanding environmental impacts, and how has the field evolved over the years?
LCA provides insights to not only report and set targets but also to improve sustainable performance and innovate products. That enables you to not only report and be compliant but also to create value by designing and producing more sustainable products. The thoroughness of LCA allows companies to truly understand what is driving the environmental impact and make decisions for lasting changes. That is why we believe that the current boom in emission-based factors will serve as a stepping stone for the LCA field in the long run. As companies start with these simpler metrics, many will soon seek deeper and more actionable insights, naturally leading them to LCA. The data transparency that LCA provides is not a nice-to-have; it is a necessity.

> "The data transparency that LCA provides is not a nice-to-have; it is a necessity."

How was the partnership with ecoinvent established, and how does PRé use ecoinvent data?
One of the first databases we included in SimaPro in 1992 was the Swiss BUWAL (Bundesamt für Umwelt, Wald und Landschaft) eco-inventory. This was a big step ahead at the time, bringing more information together into a single database. Later on, this database became known as ecoinvent, a more professional version. Interestingly, at the time, the BUWAL inventory didn't even include anything about CO2 or climate change. That wasn't a priority back then. We had to add all that by hand.

Ever since, ecoinvent has been the primary background database in SimaPro. People use it to build their own LCA models in SimaPro that provide them with the specific and transparent results they need to drive sustainable change.

Tell us about your latest software product, SimaPro Synergy, and how it integrates ecoinvent data.

Let me take one step back first. The demand for LCA has exploded over the last couple of years. That means that we cannot keep working like we have always done. With SimaPro Synergy we aim to innovate the process while experts keep full control over the data and the models in SimaPro. For this, we automate the data collection and the reporting parts of the process by tapping into the existing systems and processes of organizations to put it into the hands of the end users of the sustainability metrics. What remains is that experts can create and maintain their models in full detail. This is where the value of LCA is created, while the time-consuming parts of LCA are automated.

It is these models where ecoinvent comes in. The models are built including background datasets from ecoinvent. A great example is our collaboration with Autodesk in creating the EcoDesigner app, which uses ecoinvent datasets. By integrating Autodesk Fusion with SimaPro Synergy, the app helps product designers to easily incorporate sustainability into the design process, providing instant insights into the environmental impact of each design iteration. That's how we see the way forward.

SimaPro Synergy aims to scale and integrate life cycle assessment into day-to-day decision-making. Please explain to our readers why it is so important to achieve this, and how can high-quality data drive more sustainable choices.

Having insights into the footprint of products available in the daily work process enables people to take this into account. In that sense, the phrase "what gets measured, gets managed" is still applicable. That is why we believe this is essential. However, if you want to do that, you need to make these insights scalable by innovating the process. If not, the expert would need to provide this on request and increasingly become the bottleneck for the sustainability metrics. Not only can this situation place considerable stress on the individual, but it may also compromise the broader value that LCA is meant to deliver.

That doesn't mean the expert doesn't have a role to play. Actually, the role becomes even more important as the LCA expert will safeguard the quality of the data and models that are being used for these scalable, automated calculations. Both ecoinvent and SimaPro are essential pieces of the puzzle to provide high-quality data, as well as the tools that allow companies to constantly improve the quality of their data and adapt it to their improved products and operations. Ultimately, this leads to an iterative process of continuous improvement.

"Both ecoinvent and SimaPro are essential pieces of the puzzle to provide high-quality data, as well as the tools that allow companies to constantly improve the quality of their data and adapt it to their improved products and operations."

Data transparency is very important to ecoinvent. Please could you share some insights on the importance of data transparency in SimaPro Craft and PRé's thoughts on how data transparency builds trust and creates value for clients?

It is important for us as well. A few weeks back, I spoke to someone who got their footprint from a tool without knowing where it came from, how to use it, or what could be done to improve it. If you want to operationalize your sustainability strategy, you really need to know what levers to pull, and for that, transparency is key. Only if you can drill down in the value chain can you identify your hotspots. Knowing your hotspots gives clear guidance on what you can—or need—to improve. That's one aspect. Next to creating value, you also want to be able to review, verify, and check your data. If the data is a black box, you get a result, but you don't know where it comes from. Only if you can look at the sources, the choices that have been made, and so on, can you trust the data. And that is key.

Lastly, the possibility to adapt a dataset to make it company- or supplier-specific is essential to make the LCA results more accurate and representative for your company. This is something you can do with the unit process data that ecoinvent provides.

Tell us about your experience working with the ecoinvent team.

The collaboration with the ecoinvent team has always been very close, from Nic as CEO to Emilia (CTO), Lucia (Database Product Manager), and many others across both organizations. Of course, a lot has changed since the time that both of our organizations were still small groups. That growth journey has also brought a lot of positives and professionalized the way of working. At the same time, the personal connection remains most important. I'm really happy that teams from both PRé and ecoinvent will participate in the Climate Classic this year, a Dutch cycling race along what would be the future coastline, as a way to fight climate change.

With growing regulatory pressure on industries to reduce their environmental impacts, how do you see the role of LCA and data integration evolving over the next five to ten years?

I think reporting is the main driver now, although it also slowed down a bit given all the recent developments, while innovation and performance will be the key drivers going forward. In the end, reporting is the result of all the actions taken by a company, and products are the levers companies can pull to become more sustainable. That is also why embedding it in the daily work is key. And once you start improving your products and processes, you want to see that reflected in the data and models that you use. LCA and data integration are both key aspects to deliver on this promise. That means that LCI data and LCA models will (have to) become more flexible and dynamic. In my opinion, that will be the big move: from static to dynamic data and models.

Is there anything else you would like our readers to know?

At PRé, we believe we can achieve more together. That is why we aim to contribute to a vibrant ecosystem of companies in this space. That mindset was also the driving factor behind the successful partnership with ecoinvent. Don't hesitate to reach out if you want to know more. Always happy to have a chat about this when attending conferences, with a cup of coffee, or virtually. Those conversations often lead to great insights to both, and can accelerate the innovation of our beloved field!
If you're interested in staying in the loop, subscribe to our newsletter for quarterly updates, industry insights, and opportunities to connect.

Collaborations & Projects

We develop new methodologies and tools for environmental assessments through engagements with organizations such as universities and research institutions. These opportunities to share expertise enable us to promote good practices in life cycle inventory data and database management and to advance the field of life cycle assessment.

European Hydrogen Sustainability & Circularity Panel

Antonio Valente, Project Manager at ecoinvent, was selected as one of fifteen experts for the European Hydrogen Sustainability and Circularity Panel (EHS&CP). This panel, launched by the Clean Hydrogen Partnership, aims to propel the European hydrogen sector to the forefront of sustainable and circular technologies and value chains.

↘ More details and our contributions

Biogenic Carbon Project

To address the discrepancies and gaps in modeling approaches for the temporary storage of biogenic carbon within life cycle assessments (LCA), the United Nations Environment Programme (UNEP) launched the "Biogenic Carbon Project" as part of the Life Cycle Initiative.

Simone Fazio (Database Content Lead) and Francesco Cirone (Project Manager) from the ecoinvent team were accepted as members of three out of the four working groups within the Biogenic Carbon Project.

The project represents a significant step towards achieving a global consensus on LCA methodologies for biogenic carbon. By developing a unified approach, the project aims to provide stable and consistent information on the climate impacts of bio-based products. This will enable more informed decision-making and contribute to the broader goal of mitigating climate change.

↘ More details and our contributions

ORIENTING

ORIENTING consists of seventeen companies and organizations from around Europe, including ecoinvent. The consortium's main purpose was to create a life cycle approach that included analyzing environmental, social, and economic impacts in an integrated way.

On behalf of ecoinvent, Database Content Lead Thomas Sonderegger led the task of creating an ontology to facilitate interoperability between information resources, databases, and simulation software within the LCSA domain. Thomas is also listed as an author on two reports for this project.

↘ More details and our contributions

Trase

Trase is an independent, science-based initiative that empowers and enables businesses, governments, and civil society organizations to eliminate deforestation and transition toward more sustainable and equitable agricultural supply chains.

Based on an innovative approach to mapping agricultural supply chains at scale, Trase offers a powerful response to the urgent need for credible information on the traceability and sustainability performance of commodity supply chains, covering entire countries and production systems.

In 2024, Emilia Moreno Ruiz, ecoinvent's Chief Technical Officer, was invited to join the Advisory Group for Trase. This group of ten carefully selected experts helps to shape strategy and provides guidance on maximizing the impacts of their efforts.

↘ Discover our other projects

Greenhouse Gas Protocol

Within the new governance structure of the Greenhouse Gas (GHG) Protocol, new Technical Working Groups (TWG) were convened in 2024 to update the GHG Protocol's corporate standards and guidance.

Carl Vadenbo, Database Content Lead, was selected to represent ecoinvent on the TWG for the Scope 3 standard. Carl provides technical input and recommendations to inform the revision of the standard, in line with ecoinvent's mission to facilitate and support efficient, accurate, and reliable environmental assessments globally. This engagement enables ecoinvent to follow the latest developments of the GHG Protocol's data requirements to further align our database with users' reporting needs.

↘ Discover our other projects

Publications

Publications allow us to share our insights, methodologies, and advancements, fostering collaboration and bolstering credibility within the environmental assessment community. We proudly showcase the expertise of ecoinvent team members whose work was featured in high-profile publications last year.

The International Journal of Life Cycle Assessment

In March 2024, our team published a paper in the 'International Journal of Life Cycle Assessment', titled "Advancing Global LCA Data Interoperability: Insights from GLAD Nomenclature Working Group Mapping Activities".

This paper is co-authored by ecoinvent experts Antonio Valente (Project Manager), Carl Vadenbo (Database Content Lead), Simone Fazio (Database Content Lead), Thomas Sonderegger (Database Content Lead), and six other collaborators.
It provides a comprehensive overview of the GLAD Nomenclature Working Group's (NWG) methodology for mapping elementary flows among major nomenclature systems. Led by our team members, the NWG developed a robust procedure and criteria for these mappings, emphasizing the importance of multilateral agreement and iterative reviews. By promoting interoperability and data accessibility, we pave the way for a more sustainable future.

↘ Read the full paper

The Handbook for Life Cycle Sustainability Assessment

In May 2024, we published a new chapter in 'The Handbook for Life Cycle Sustainability Assessment,' co-authored by our team members Emilia Moreno Ruiz (CTO), Thomas Sonderegger (Database Content Lead), and four other co-authors.

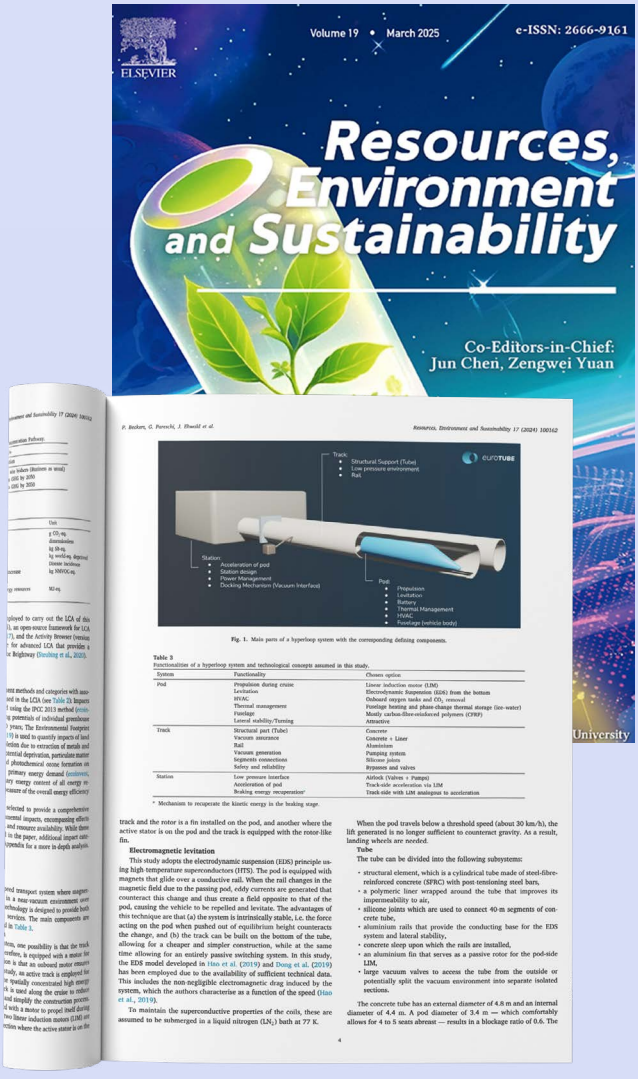
Titled "Data for LCSA – State of the Art and Outlook," this chapter delves into the intricate landscape of Life Cycle Sustainability Assessment (LCSA), shedding light on its three fundamental pillars—environmental, economic, and social—and exploring the evolving methodologies, data collection practices, and the unique challenges associated with each dimension. It paves the way forward for the standardization and operationalization of LCSA.

↘ Read the full paper

New Research Paper on Prospective LCA of Hyperloop Systems

In September 2024, Paul Beckert, a Data Analyst at ecoinvent, and Christian Bauer, a member of the ecoinvent Board, co-authored a new research paper titled "Fast as a plane, clean as a train? Prospective life cycle assessment of a hyperloop system," which has been published in the journal 'Resources, Environment and Sustainability'.

This in-depth analysis was made possible through the novel application of Integrated Assessment Models (IAM), coupled with the Swiss Energy Perspective 2050+ and the ecoinvent database within the 'premise' modeling framework.
*Paul Beckert and Christian Bauer participated in this project as researchers at PSI. ecoinvent was not directly involved in this research project as a collaborator.



↘ Read the full paper

Events & Conferences

A Year in Motion: 2024 Highlights from Our Global Team

From keynote speeches to in-depth technical presentations, our team made waves in the sustainability and LCA (Life Cycle Assessment) space throughout the year, showcasing our commitment to advancing sustainability and environmental assessment. Here's a look at some of the key moments that shaped 2024:

January

Beginning of 2024

Nic Meyer (CEO) inspired the next generation of environmental engineers as the keynote speaker at ETH Zurich's Master's graduation ceremony for Environmental Engineering students.

Daria Dellenbach (Database Development Manager) delivered the keynote address at our joint GreenBuzz Careers in Sustainability Networking Event in Zurich, while several of our team members led insightful breakout sessions.

February

May

Francesco Cirone (Project Manager) took the stage at the SETAC Europe 34th Annual Meeting in Seville and presented "Methodological Pathways for Disclosing LUC-Related Forest, Land, and Agriculture (FLAG) Emissions Using Existing Global Databases."

Events & Conferences

June

Nikolia Stoikou (Project Manager) showcased research on the mechanical recycling of waste plastics at the 4th Conference on Life Cycle Assessment of Waste in Comwell Borupgaard.

Iasonas Ioannou (Project Manager) spoke at the Future Innovation in Process System Engineering (FIPSE) Conference in Greece.

September

Nic Meyer (CEO) attended a Climate Week NYC event in partnership with Altana.

Iasonas Ioannou (Project Manager) presented strategies for improving regional granularity in chemical and plastic LCA data at the ACLCA Conference in Utah.

October

At SETAC Europe's 26th LCA Symposium in Gothenburg, **Carl Vadenbo** (Database Content Lead) explored the adaptation of global background LCA databases for carbon accounting, while **Avraam Symeonidis** (Database Content Lead) addressed municipal solid waste regionalization in Europe.

At the Batteries Event in Lyon, **Antonio Valente** (Project Manager) presented on the HiQ-LCA project, and **Lauriane Bichot** (Data Analyst) showcased a case study on updating battery cell LCA data in the ecoinvent database.

November

At the EcoBalance Conference in Sendai, **Avraam Symeonidis** (Database Content Lead) introduced the ecoinvent Database and promoted municipal solid waste regionalization in Europe.

December

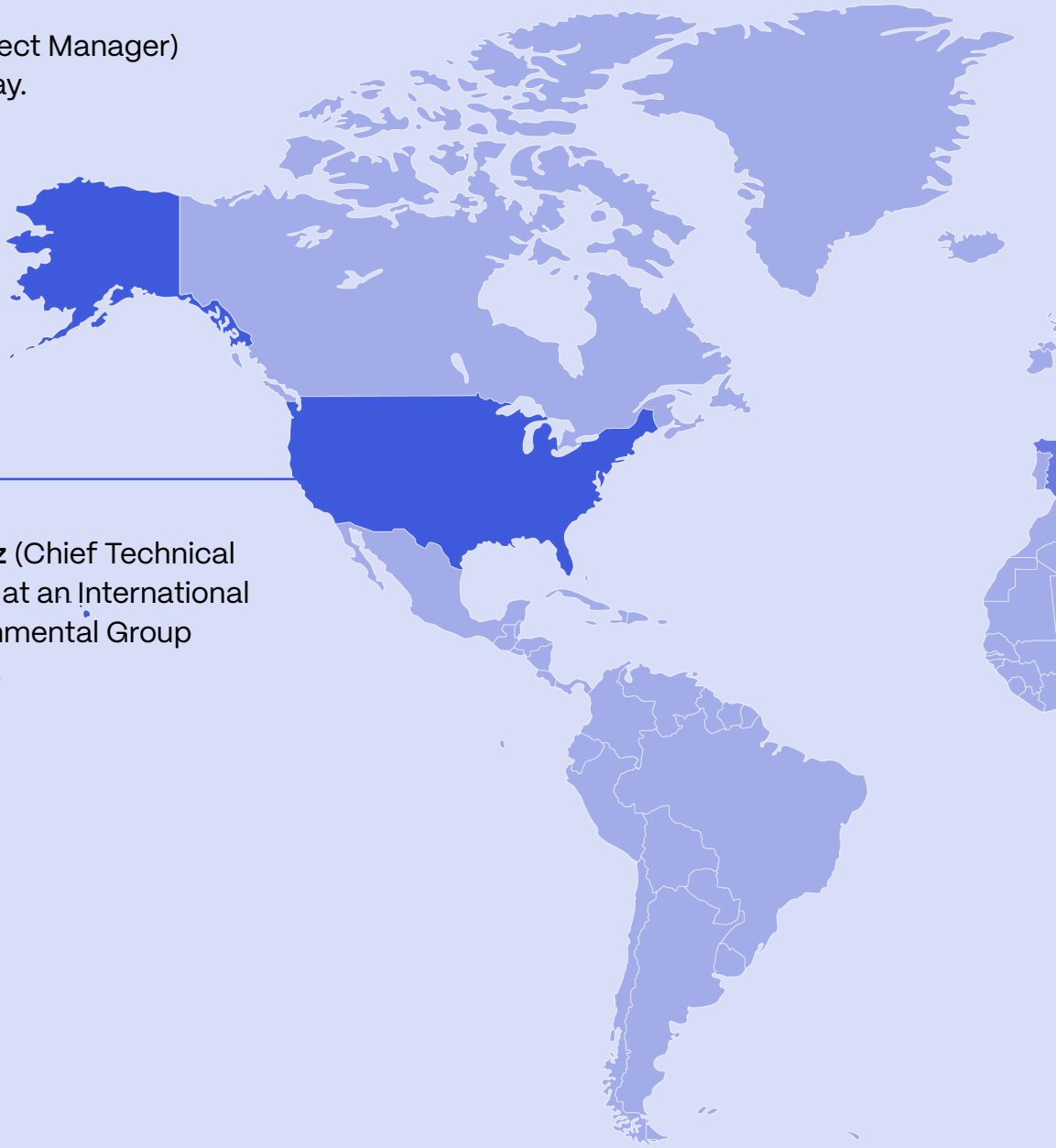
Ending of 2024

Beyond the previous milestone events, our experts contributed to sustainability discussions across multiple countries:

↘ Belgium

Nick Van Berckelaer (Chief Product & Technology Officer) spoke at a Climate Camp event and a Clean Collective Impact Meet-Up.

Antonio Valente (Project Manager) presented at SH2E Day.



↘ USA

Emilia Moreno Ruiz (Chief Technical Officer) presented at an International Aerospace Environmental Group Technical Meeting.

Michel Klüger (Software Engineer) presented to the tech community at PyConFR 2024.

Emilia Moreno Ruiz (Chief Technical Officer) presented to LCA experts at a CIRAIG workshop.

Olivia Kaarlela (Data Analyst) provided a guest lecture for the ALCASIM LCA program.

Antonio Valente (Project Manager) contributed to discussions at the HiQ-CARB and HiQ-LCA workshops.

↘ France

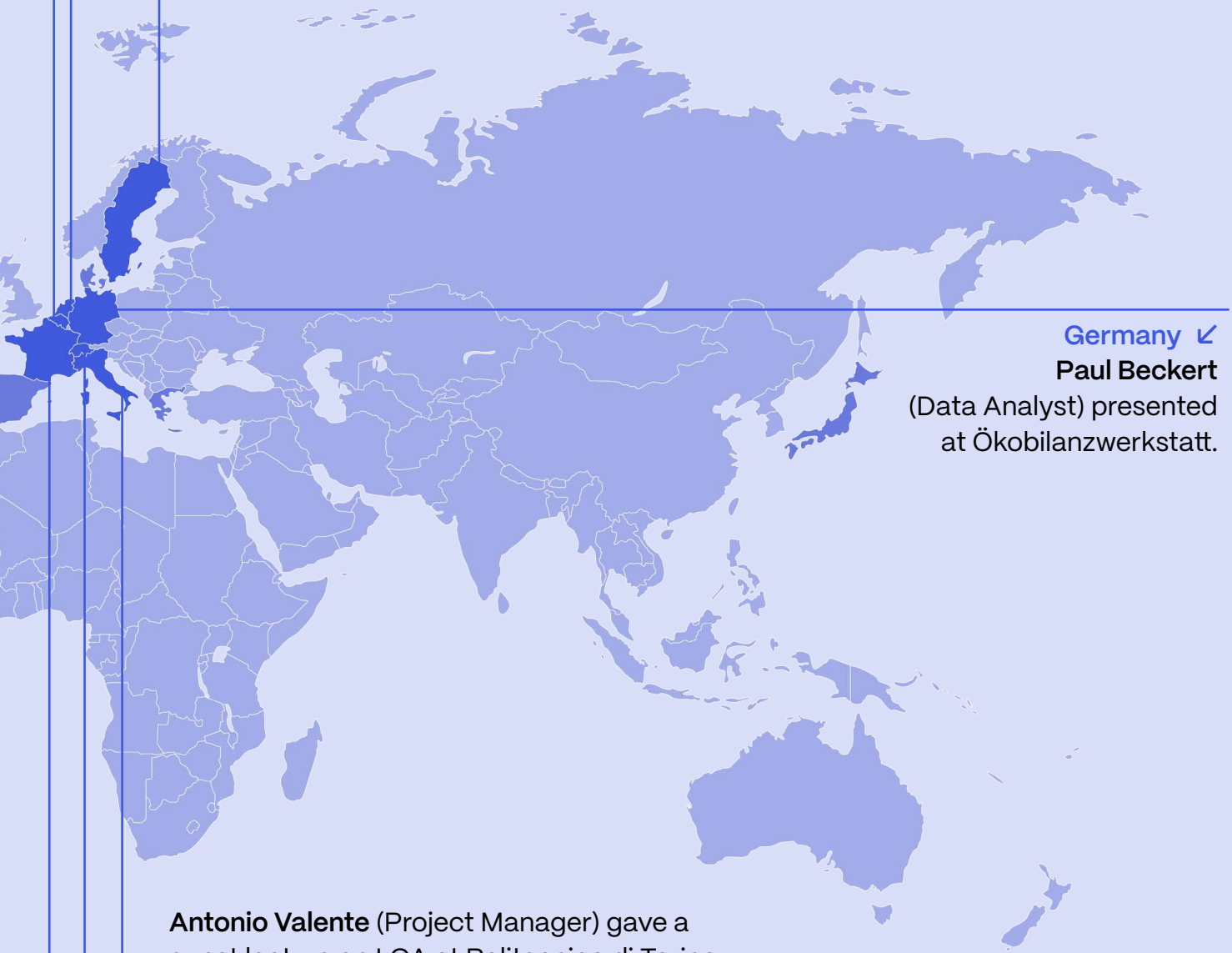
Other countries from the timeline event spread

↘ Netherlands

Enrico Bonanno (Project Manager) shared his expertise in a Pré SimaPro webinar.

↘ Sweden

Carl Vadenbo (Database Content Lead) shared insights on LCA methodologies for marine fuels at an MMCZCS webinar and presented at the Swedish Life Cycle Center's LCA Data & Methodology working group.



Germany ↙

Paul Beckert (Data Analyst) presented at Ökobilanzwerkstatt.

Antonio Valente (Project Manager) gave a guest lecture on LCA at Politecnico di Torino.

↘ Italy

Péter Toller (Key Account Management Lead) engaged in digital sustainability discussions at an Implement Consulting Digital Sustainability Knowledge Circle.

Nikolia Stoikou (Project Manager) presented on a Plastics Recyclers Europe webinar.

Thomas Sonderegger (Database Content Lead) tackled the topic of biodiversity in LCA at the 87th Swiss Discussion Forum.

↘ Switzerland

Acknowledgements

As we look back on 2024, we would like to recognize the support of our valued partners, users, collaborators, and stakeholders.

Together, with your contributions, we create the world's leading life cycle inventory database.

We want to thank everyone involved in the effort to expand our database and initiatives, and we maintain our confidence that together, we will pave the way toward a more sustainable future with transparency, collaboration, and data.

The future is in our hands.

↘ Stay in touch! Subscribe to our quarterly newsletter.

Data with purpose