Scaling climate action:

Unleashing innovative technologies in sustainable finance

December 2023

COP28 UAE

BIS Innovation Hub

مصرف الإمارات العربية المتحدة المركزي
CENTRAL BANK OF THE U.A.E.

EIF
معهد الإمارات المالي
Emirates Institute of Finance

Content

This report is published on behalf of the Bank for International Settlements (BIS) Innovation Hub through its Hong Kong Centre, the Central Bank of the United Arab Emirates (CBUAE) and the Emirates Institute of Finance (EIF) in support of the COP28 UAE TechSprint.

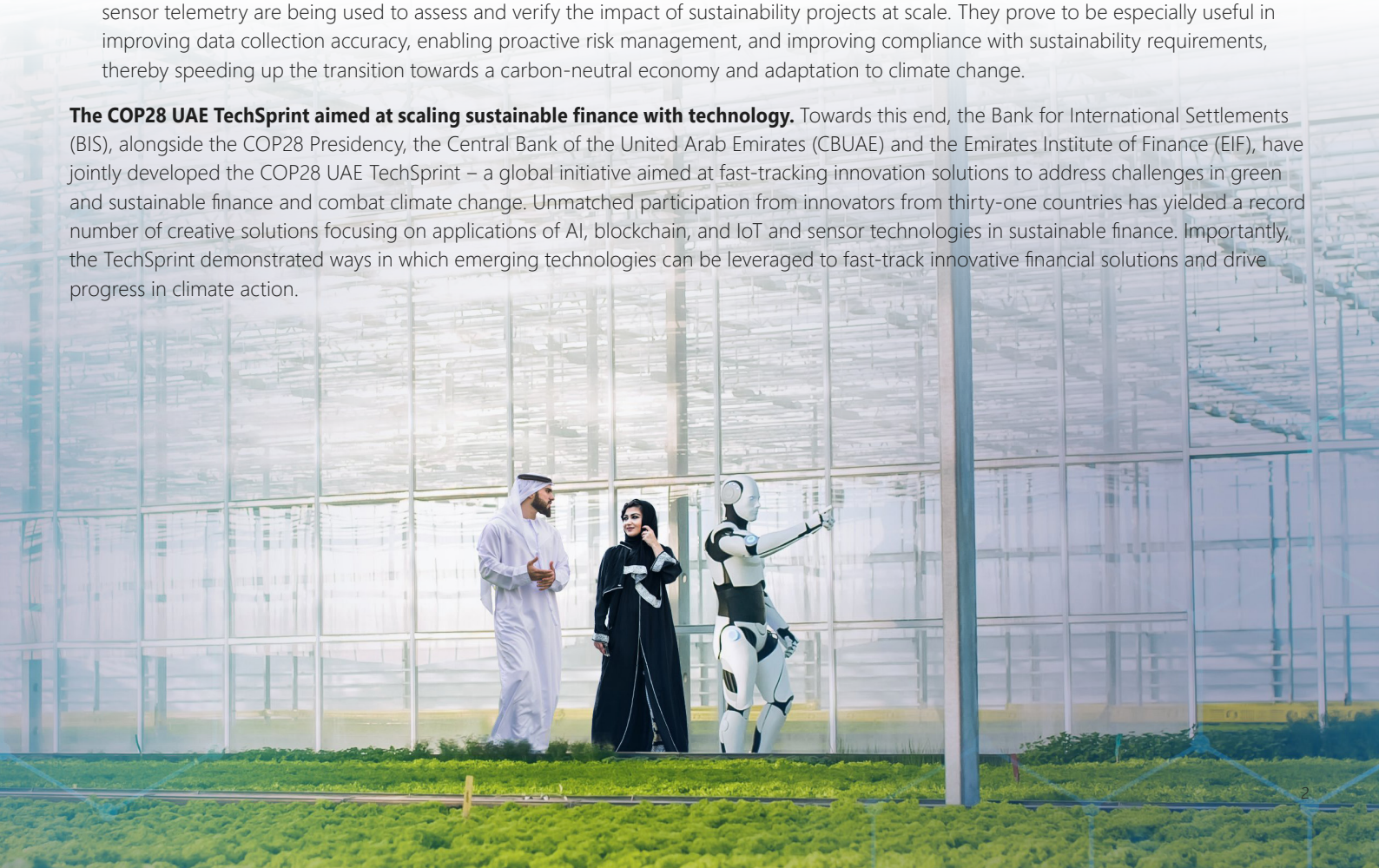
Executive summary

The financial services landscape is undergoing a transformation with an increased focus on sustainability and innovative technologies. Investors are increasingly seeking to finance sustainable solutions. At the same time, sustainability frameworks and sustainability disclosures are becoming more robust as stakeholders intensify demands for greater transparency. A broadening spectrum of sustainability themes including biodiversity, transition, adaptation and inclusive finance are taking increasingly prominent roles, while the market for green, social, sustainability and sustainability-linked (GSSS) financial instruments continues to grow rapidly. Furthermore, the growing urgency to combat climate change is driving demand for climate-related risk management, voluntary carbon offsets, increasing consumer nudging and the push towards sustainable cities, industries, and agriculture – reflecting a strengthened commitment to carbon neutrality. These trends reflect the increasingly holistic approach that public and private sectors around the globe are taking towards sustainable finance and sustainability in general as they commit to solving the ever-evolving environmental and sustainability challenges.

Technology plays a critical role in enabling sustainable finance to scale up climate action. Emerging technologies such as artificial intelligence (AI), blockchain, Internet-of-things (IoT), and sensor technologies are helping overcome challenges to scale up sustainable finance while enhancing accessibility, impact, and reach.

- **AI**, including machine learning and natural-language processing, enhance sustainability disclosures and assessments. It unlocks untapped value from vast amounts of data, helping pave the way for more comprehensive and rapid implementation and adoption of green and sustainability frameworks and practices worldwide. Predictive modeling techniques, fueled by machine learning, can help develop risk models that take into account sustainability-related risk factors. They can also help address gaps in sustainability disclosures by using AI simulations to forecast potential outcomes that may otherwise not be evident. AI can also be used to detect inconsistencies in company disclosures with other data sources to address greenwashing concerns. These data-driven approaches provide a stronger foundation for more informed sustainability-related decision-making and capital mobilization.
- **Blockchain** technologies support sustainable finance by improving data transparency, making assertions non-repudiable and detecting inconsistencies in disclosures. Blockchain digital identities and self-executing smart contracts add the ability to streamline consensus among parties undertaking climate finance workflows from verification of ESG metrics to creation of new sustainable finance products. Solutions using blockchain capabilities fortify investor and market confidence through prevention of greenwashing, heightened transparency, efficiency, security, traceability, and accountability.
- **IoT and sensor technologies,** which may also include spatial information technology and satellite remote sensing, enhance data collection and enable ongoing monitoring and reporting of sustainability-related metrics. Climate-relevant data collected from IoT devices and sensor telemetry are being used to assess and verify the impact of sustainability projects at scale. They prove to be especially useful in improving data collection accuracy, enabling proactive risk management, and improving compliance with sustainability requirements, thereby speeding up the transition towards a carbon-neutral economy and adaptation to climate change.

The COP28 UAE TechSprint aimed at scaling sustainable finance with technology. Towards this end, the Bank for International Settlements (BIS), alongside the COP28 Presidency, the Central Bank of the United Arab Emirates (CBUAE) and the Emirates Institute of Finance (EIF), have jointly developed the COP28 UAE TechSprint – a global initiative aimed at fast-tracking innovation solutions to address challenges in green and sustainable finance and combat climate change. Unmatched participation from innovators from thirty-one countries has yielded a record number of creative solutions focusing on applications of AI, blockchain, and IoT and sensor technologies in sustainable finance. Importantly, the TechSprint demonstrated ways in which emerging technologies can be leveraged to fast-track innovative financial solutions and drive progress in climate action.



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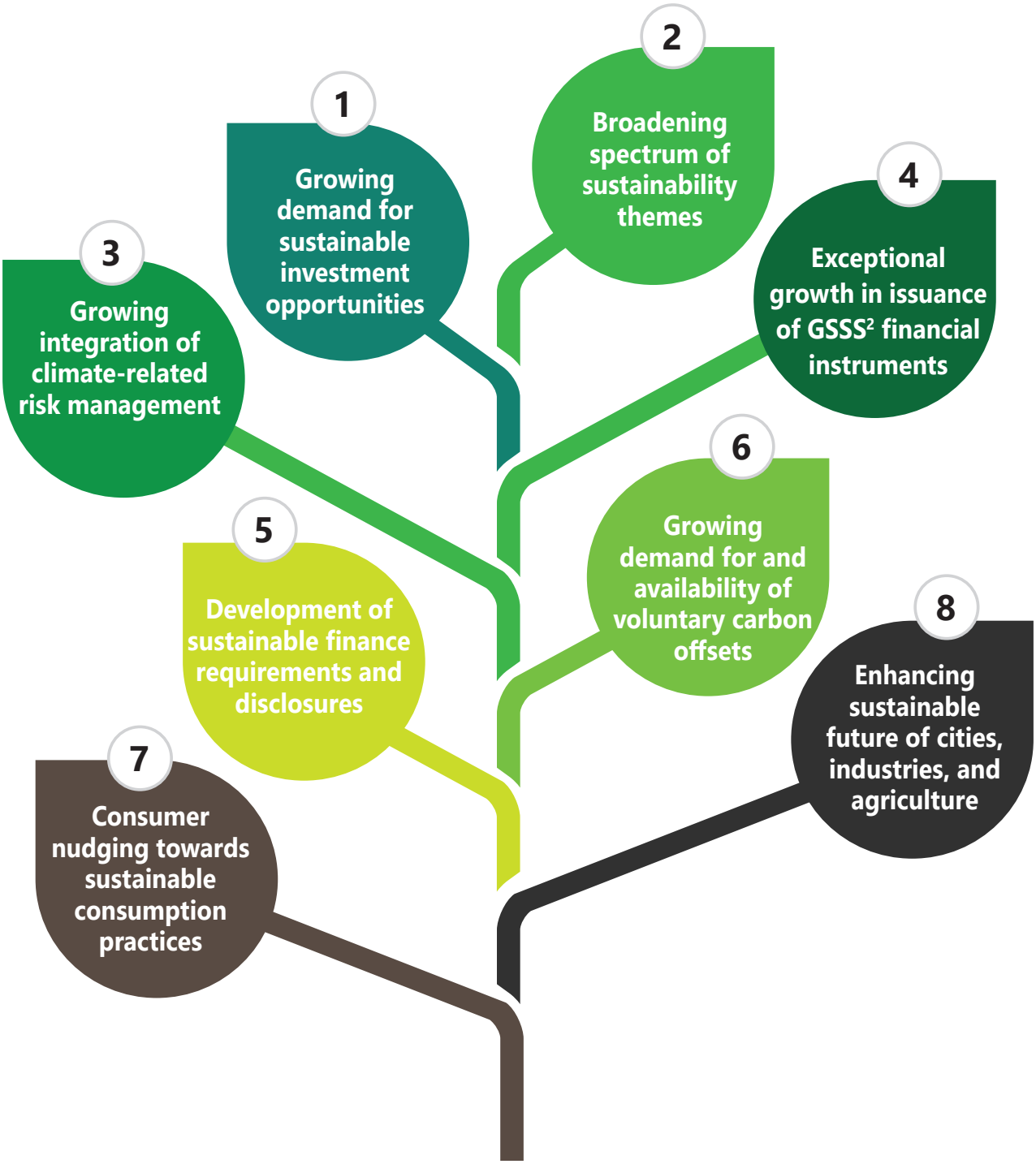
Key trends in sustainable finance and technology

Key trends in sustainable finance and technology

Sustainable finance has experienced a significant surge and transformation over the recent years and evolved as a mainstream theme in financial institutions and markets. This transformation has been catalyzed and driven by multiple factors including the climate pledges signed by more than 140 countries[1] for reaching net zero, the pressure on governments and companies to turn these pledges into actions, progress achieved in international sustainability standards, increasing requirements and greater scrutiny of sustainability actions from various stake-holders, as well as shifting customer preferences - all of which are pushing sustainability to the forefront of discussions in the financial world.

At COP 28, finance, aligned with technology & innovation were designed as emerging as pivotal cross-cutting themes. The mobilization of financial resources and innovative financing mechanisms will play an important role in realizing the sustainable transformation needed to combat climate change with multiple trends shaping sustainable finance in the next decade:



1. Net Zero Stock Take 2023, Assessing the Status and Trends of Net Zero Target Setting across Countries, Sub-national Governments and Companies, June 2023
2. Green, social, sustainability and sustainability-linked

Trend 1:
Growing demand for sustainable investment opportunities

There has been a noticeable **surge in investor demand for sustainable investment opportunities**, including sustainability considerations related to fixed income, funds, and equities across the world. For example, according to the Morgan Stanley Institute for Sustainable Investing, in the first half of 2023, investor demand for sustainable funds reached an all-time high with sustainable assets under management accounting for 7.9% of the global total.[3] In the US for instance, 85% of the general population and 95% of Millennial investors are interested in sustainable investing—with climate issues being a top priority for many of them.[4]

However, today major investors have **concerns over the availability, quality, and accessibility of reliable and actionable data**, which impedes their ability to make weighted and informed investment decisions to invest in truly sustainable companies and projects.

To overcome these constraints, companies are leveraging **AI, including machine learning**. This allows them to capture and compare vast amounts of data and generate insights as well as predictive modeling and analytics to gauge likely success of potential investments enabling improved investment decision-making processes.

As the integration of AI continues to evolve, it is poised to play an increasingly vital role in guiding sustainable investment strategies and shaping the future of finance, complementing traditional analysis, and assisting users in their decisions. Additionally, **natural-language processing tools** and **AI-enabled analysis of IoT and sensor data** can allow investors to identify and verify potential climate-related investments and risks, which may have potentially material impact

For example, **STACS'** ESGpedia data platform uses the power of AI to streamline data access and facilitate data standardization, ultimately empowering users to navigate the complex ESG landscape efficiently and make informed decisions. This allows them to deploy capital aligned with sustainability goals more efficiently.

Triangle created blockchain-based digital twins of real-world assets linked to climate data, allowing to report financed emissions to regulators. As part of this process, chances of greenwashing are mitigated, and banks can realize lower borrowing costs form the sustainability-linked bond market.

Trend 2:
Broadening spectrum of sustainability themes

Beyond climate action, there is a growing interest in **a broader spectrum of sustainability themes**, including biodiversity and nature conservation. In addition, transition, adaptation, and inclusive finance, and socially beneficial use of proceeds, are set to become a major area of interest for investors, reflecting a growing recognition that social issues and impact on a society at large are important for the long-term success of sustainable development.

However, to date, it has been challenging to quantify the impact of environmental and social agenda given the **lack of unified definitions and criteria for measurement (beyond carbon footprint)**, as well as standardized frameworks, allowing to quantify the potential implications for sustainable investments.

AI and IoT improve the measurement of different environmental and social components and integration into active decision-making by consuming vast amounts of data and allowing investors to better assess price, risks, and value of sustainable investments. For example, to measure the carbon footprint of agricultural activities and track crops, AgriTech companies enabled the in-field carbon measurement through the installation of on-machine and remote climate sensors which are then interconnected using the IoT techniques.

6th Grain utilizes mobile fintech, geospatial datasets, and integrated mobile data collection system to accelerate the sustainable Arabic gum crop practices across the African Sahel and help smallholders establish themselves as commercial players with access to credit, insurance, and traders.

Similarly, **MistEO,** harnesses the power of automated technology and weather data analytics to provide farmers with crop analytics, data-centric science-based parametric insurance and a climate decision intelligence platform, minimizing the risk of financial loss and equipping them with the information needed to navigate the challenges posed by climate change.

3. Morgan Stanley Institute for Sustainable Investing, Navigating the Next Decade: 10 Demand Signals for the Next 10 Years of Sustainable Finance, 2023
4. Morgan Stanley, How to Tackle Climate Change in your Portfolio, December 2022, https://www.morganstanley.com/articles/how-to-combat-climate-change-in-investment-portfolio

Trend 3:
Growing integration of climate-related risk management

Globally, policymakers and financial authorities increasingly see **climate change implications arising from both physical and transition risks** for financial sectors and adopt **climate-related financial risk** managements as a component for risk management frameworks for banks, insurance companies and other financial institutions. This involves identifying and assessing climate-related risks related to adaptation and mitigation, and monitoring and assessing impact. Additionally, there are efforts to develop a consistent and coherent approach for conducting climate-related scenario analysis. For example, the Network for Greening the Financial System (NGFS)[5] provides scenarios for estimating the potential impact of climate change with the aim of a common reference framework.[6]

However, when it comes to executing climate-risk management, stakeholders face multiple challenges from **lack of granular data** to difficulties in **translating climate-related variables** into quantifiable economic and financial impact. In view of considerable uncertainties, conventional risk management approaches might not be sufficient to determine the financial implications of climate-related hazards to an appropriate level of confidence.[7]

Intensel provides solutions for climate resilience planning purposes, utilizing AI, satellite imagery and cloud platforms to estimate potential risks and the impact of climate change on the critical infrastructure, facilities and buildings. This helps translate climate hazards into financial value-at-risk at the asset level at very high resolution and accuracy. This also allows users to gain invaluable insights through its climate analytics platform and enables them to make climate-informed decisions around capital allocation, risk mitigation and resilience planning.

Trend 4:
Exceptional growth in issuance of GSSS[8] financial instruments

Green, social, sustainability, and sustainability-linked financial instruments, driven by increasing demand for sustainable investments are seeing exceptional growth with 2023 issuance to exceed US$ 900 billion[9] and have become a cornerstone of sustainable fixed-income strategies. These financial instruments are becoming increasingly widespread for funding sustainable projects and initiatives and providing investors with means to align their asset allocations with sustainability objectives, thus driving the global transition to sustainability

However, there is a downside to the trend with **greenwashing** becoming one of the biggest concerns for investors in addition to the high costs of measuring, labeling, verifying and monitoring proceeds.

Emerging technologies like **blockchain, smart contracts, and IoT solutions** can improve real-time traceability of the proceeds, and potentially reduce costs related to the verification of green assets. They do so by allowing banks to identify and verify the environmental impact of their labelled products, as well as monitor the usage of proceeds and underlying asset collateral, thus increasing investor confidence in the outcome of investment activities.

For example, **FeverTokens** uses blockchain technology for on-chain monitoring and oversight throughout the entire lifecycle of tokenized green bonds. This implementation boosts transparency and trust in green bonds while reducing costs for users.

Allinfra's Green Finance Impact Reporting Tool enables users to create trustless chain formulas for almost any purpose, with inputs from device and system data, manual and other third-party sources selected by an asset/entity owner, coupled with granular third-party verification and reporting, all within a single platform.

Trend 5:
Development of sustainable finance requirements and disclosures

As the global sustainable finance market moves from voluntary to mandatory governance architecture, companies must navigate an increasingly complex terrain of national, regional and international policies, standards, disclosures, and requirements. Indeed, the **complex and growing number of rules and requirements** that multiple stakeholders must adhere to may make it more challenging for companies to properly comply. For example, the European Union (EU) introduced the EU taxonomy for sustainable activities, a classification system that was developed to clarify which economic activities are environmentally sustainable in the context of the European Green Deal.[10] The EU also put in place the Carbon Border Adjustment Mechanism (CBAM), a tool that fairly prices carbon emissions linked to carbon intensive goods entering the EU, which also serves to encourage cleaner industrial production in non-EU countries.[11] Furthermore, the EU adopted transparency frameworks and reporting standards such as the Sustainable Finance Disclosure Regulation (SFDR)[12] and European Sustainability Reporting Standards (ESRS).[13]

5. NGFS is a network of Central Banks and Supervisors willing on a voluntary basis to share best practices and contribute to the development of environment and climate risk management in the financial sector. www.ngfs.net
6. NGFS Scenarios for Central Banks and Supervisors, November 2023
7. IFC Bulletin, Materiality of ESG Factors in Financial Markets and Financial Statistics, August 2022 https://www.bis.org/ifc/publ/ifcb58_18.pdf
8. Green, social and sustainability-linked
9. S&P Global, Global Sustainable Bonds 2023 Issuance to Exceed US$ 900 billion
10. EU, EU Taxonomy for Sustainable Activities, www.europa.eu
11. European Commission, Carbon Border Adjusted Mechanism https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en
12. European Commission, Sustainability-related disclosure in the financial services sector https://finance.ec.europa.eu/sustainable-finance/disclosures/sustainability-related-disclosure-financial-services-sector_en
13. European Commission, The Commission Adopts the European Sustainability Reporting Standards, 31 July 2023. https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31_en

To date, there are multiple **concerns over the lack of global consistency in sustainability standards due to numerous existing frameworks and taxonomy criteria**, which tend to have unclear definitions, leaving room for interpretation. Additionally, key disclosure metrics on environmental factors have crystalized more rapidly than those for social factors, requiring further alignment and convergence across multiple stakeholders.

The introduction of innovative technologies enhances corporate sustainability reporting. For example, **blockchain and IoT technologies** are being used to create secure registries of both regulations as well as compliance, resulting in enhanced transparency improving auditability of data. **AI** solutions are augmenting sustainability reporting and helping increase adoption of standards in sustainable finance, unlock the value of vast troves of unstandardized sustainability data, and automate sustainability reporting across numerous existing frameworks, requirements, and standards.

For example, **U-Reg** applies AI to tackle the fragmentation and standardization challenges of ESG reporting and taxonomies, and to help bridge gaps between diverse global, industry-specific, organizational, and regulatory frameworks – ensuring both efficiency and reliability of ESG data and reporting.

Similarly, **Ahya** provides an infrastructure for integrating climate action into every customer experience and empowers precise carbon accounting to help enhance the accuracy and effectiveness of the 4 core application areas: calculating, monitoring, predicting and reducing emissions.

Trustwise uses blockchain integration for efficient and transparent allocation, trading, retirement of emission allowances and integration of carbon border adjustment mechanisms in cross-border trades. This helps increase transparency, ensures that allowances are not double spent, reduces administrative burdens, and ensures uniformity in applying rules and tariffs.

Trend 6:
Growing demand for- and availability of voluntary carbon offsets

The **demand for voluntary carbon credits** is rapidly growing as private and public sector companies increasingly use offsets to help them mitigate the impact of their operations and allow them to reach goals of becoming carbon-neutral with markets set to reach more than US$250 billion in 2050.[14]

However, with the voluntary carbon credits experiencing record growth, companies still face a key challenge relating to **the quality and additionality of credits**, preventing companies to verify whether the underlying offset projects can demonstrate strong evidence of creating promised emissions reductions.[15]

Importantly, the Integrity Council for the Voluntary Carbon Market (ICVCM) developed the 'Core Carbon Principles', a global benchmark for high-integrity carbon credits, developed to build trust and unlock additional investment. Such high-integrity carbon credits, whose uptake is accelerated by emerging technologies, help channel capital towards activities and initiatives that drive climate mitigation, which are especially critical for developing economies.

To increase the efficiency of the voluntary carbon markets, multiple countries and market players have already introduced and adopted **Digital MRV systems**, allowing them to simplify the MRV process and transition to credible and compatible systems, capturing sensitive data and increasing transparency. In addition, the use of **blockchain** is another critical component for enabling end-to-end digitization of carbon markets, allowing the creation of immutable and auditable data.

For example, **Carbonbase's** carbon registry, Global Climate Registry, digitizes the process for project developers to submit real time reports, increasing the throughput and connectivity for carbon markets, and building trust and credibility in carbon markets.

ZERO13 provides an automated AI and blockchain-driven platform-as-a-service ecosystem for the trading, clearing and settlement of carbon credits and ESG real world assets. It serves as a hub connecting carbon exchanges, buy-side carbon emitters and custodians, with supply-side ESG project owners globally and their carbon offset projects in multiple registries to drive distribution.

14. Morgan Stanley, Where the Carbon Offset Market is Poised to Surge, 2023
15. The Integrity Council for the Voluntary Carbon Market, Core Carbon Principles, 2022. https://icvcm.org/the-core-carbon-principles

Trend 7:
Consumer nudging towards sustainable consumption practices

Government and businesses increasingly recognize the role of consumers in contributing to sustainable agenda and spurring positive changes to address some of the most pressing issues. Companies across the world progressively build understanding of **consumer attitudes** to identify required policy interventions, **collect behavioral data** and use it for **consumer nudging purposes** to foster sustainable finance choices and motivate customers to prefer environmentally and socially friendly products over traditional ones.

Some banks have already launched digital tools and applications that enable consumers to track, monitor and reach certain sustainability targets.

For example, **Genify's** carbon footprint tracking services enables retail banking users to track the carbon footprint of transactions. Using their carbon accounting mechanism, Genify communicates to users their main sources of carbon emissions and provides tailored insights from a curated database, ultimately helping individuals and businesses reduce their carbon footprint.

Trend 8:
Enhancing sustainable future of cities, industries, and agriculture

As the risks of climate change intensify, leading to more frequent natural disasters and heightened social issues, **cities** – home to over half of the world's population – have a unique **opportunity and pivotal role in reducing greenhouse gas emissions and spearheading efforts in climate finance**.

Many cities are economic hubs with diverse industries and financial activities; they are also hubs for innovation and technology adoption. Importantly, policymakers have the possibility to shape and implement policies surrounding sustainable finance as well as the overall sustainability of large- and small-scale infrastructures, buildings and other essential elements of the ecosystem of cities. Concentrated city infrastructure offers fertile ground for strategic placement of innovative **IoT sensors with AI** solutions making sense of the telemetry they produce.

Beyond cities, **industrial and agricultural activities** can benefit from the adoption of sustainable practices. Industrial activities are major contributors to emissions through their burning of fossil fuels, manufacturing processes, and waste generation, whereas agriculture is the main contributor to a lack of biodiversity and industries substantially contribute to pollution. The ongoing expansion of agriculture remains the primary driver of forest degradation and associated loss of biodiversity in ecosystems.[16] Sustainable finance mechanisms can incentivize industries to transition to cleaner production methods such as renewable energy sources and more sustainable supply chains.

For instance, **OpenEarth's** CityCatalyst empowers sustainability officers in local governments with a data and AI product platform, enabling them to efficiently and cost-effectively collect, enhance, and manage climate emissions and mitigation data to scale finance. Using data from diverse global sources, including satellite data, IoT and machine learning modeling, local governments can build their greenhouse gas inventories for cities and accelerate finance via data-driven acceleration plans.

Evercomm solves problems associated with traditional methods of emission disclosure and verification, which are manpower-intensive and can be prone to errors or delays. In Evercomm's platform, digital systems and IoT devices instantaneously collect data at the emission sources for industrial emission reduction strategies, which ensures up-to-date information is always available for processing, verification, and compliance.

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16. UNEP, Five Drivers of the Nature Crisis, 5 September 2023, https://www.unep.org/news-and-stories/story/five-drivers-nature-crisis

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COP28 UAE TechSprint

Challenge overview

Under the COP28 UAE Presidency, the Central Bank of the UAE (CBUAE), the Bank for International Settlements Innovation Hub (BISIH) and the Emirates Institute of Finance (EIF) have joined hands to launch the COP28 UAE TechSprint – a pioneering initiative designed to call innovators from around the world to fast-track climate action by integrating advanced AI, blockchain, and IoT and sensor technologies in sustainable finance.

Three problem statements have been developed along the theme of scaling up climate action through advancing innovative technology solutions in sustainable finance.

AI Technology

How can we automate and increase adoption of standards in sustainable finance using AI technology to unlock the value of vast troves of unstandardised sustainability data?

Blockchain Technology

How can we ensure data integrity in sustainable finance using blockchain technology to increase investor and market confidence by enhancing transparency, traceability, and accountability?

IoT and Sensor Technology

How can we enhance data collection in sustainable finance using IoT and sensor technologies for monitoring and capturing data to improve accuracy and ensure informed assessments of impact, risk and compliance?

AI Technology

- What practical and scalable solutions can leverage generative AI to accurately implement (e.g., measure, report, and verify) green frameworks internationally, while allowing issuers to quickly leverage multiple data sources to comply with disclosure, standard, and taxonomy-related requirements?
- What practical and scalable solutions can leverage AI tools to enable financial institutions, asset managers, and investors to make informed underwriting and investment decisions accelerating sustainable finance?

Blockchain Technology

- How can using blockchain in the context of capital markets (e.g., green bonds), enable efficient auditing processes, enhanced transparency, and seamless traceability in sustainable finance while harnessing blockchain's potential to disintermediate, increase speed and reduce costs?
- What practical and scalable solutions can effectively track and validate the environmental impact of investments, ensure compliance with sustainability standards, and foster a high level of trust among stakeholders?

IoT and Sensor Technologies

- How can creative combinations of IoT and sensor technologies (all types of on-site, off-site, and remote sensor technologies, which may also include spatial information technology and satellite remote sensing) revolutionize the collection, analysis, and reporting of sustainability metrics in sustainable finance?
- How can secure and globally scalable IoT and sensor technology solutions facilitate accurate data insights, enable proactive risk management, and empower asset managers to seamlessly comply with sustainability requirements, thereby driving the transition towards a carbon-neutral economy?

Other innovative AI, Blockchain, and IoT and sensor technology solutions have also been considered.

Dr. Sultan Ahmed Al Jaber

COP28 President

Dr. Sultan Ahmed Al Jaber, COP28 President, highlights innovation in finance as being critical to the objectives of positive climate action foundational to COP initiatives.

The TechSprint was structured precisely to support these objectives.

> The world must urgently accelerate the energy transition in an orderly, just and equitable way that accounts for energy security and ensures that finance and technology is available for developing countries to implement the transition.

> Finance is a critical enabler of climate action. But to unleash its power, climate finance must be affordable, available, and accessible to developing countries

> Tackling climate change requires available, accessible and affordable finance. By introducing advanced technological solutions that support the development of sustainable finance standards and instruments, we can help to foster investor confidence and better ensure that capital reaches those who require it the most. COP28 looks forward to working with its partners to drive real solutions to scale up climate action and fast-track sustainable finance initiatives around the world.

Messages from the sponsors

Combating climate change is more urgent than ever. It calls for a profound change in the way economies operate and grow. To finance the needed transformation, investors need certainty that their funds are channelled to their intended uses. Technologies that promote the timely measurement and disclosure of climate-related information are part of the solution. The BIS Innovation Hub has explored how to apply technologies such as AI, blockchain and internet-of-things to green finance instruments and climate-related disclosure. This TechSprint in collaboration with the COP28 UAE, the CBUAE and EIF will complement these efforts to address remaining gaps in the green finance market.

Agustín Carstens
General Manager of the BIS

In line with the vision of the UAE's leadership, and its endeavours to address the challenges of climate change; we value the partnership with COP28 UAE and the BIS in launching this international initiative aimed at encouraging innovators across the globe to leverage financial technology in developing new green and sustainable finance solutions.

Khaled Mohamed Balama
Governor of the CBUAE
and Chairman of EIF

TechSprint at a glance

The COP28 UAE TechSprint has attracted creative submissions from participants around the world. A record number of submissions were received, representing a broad spectrum of innovative solutions and demonstrating a global commitment to addressing sustainability challenges in the financial sector.

3
Challenges

31
Countries

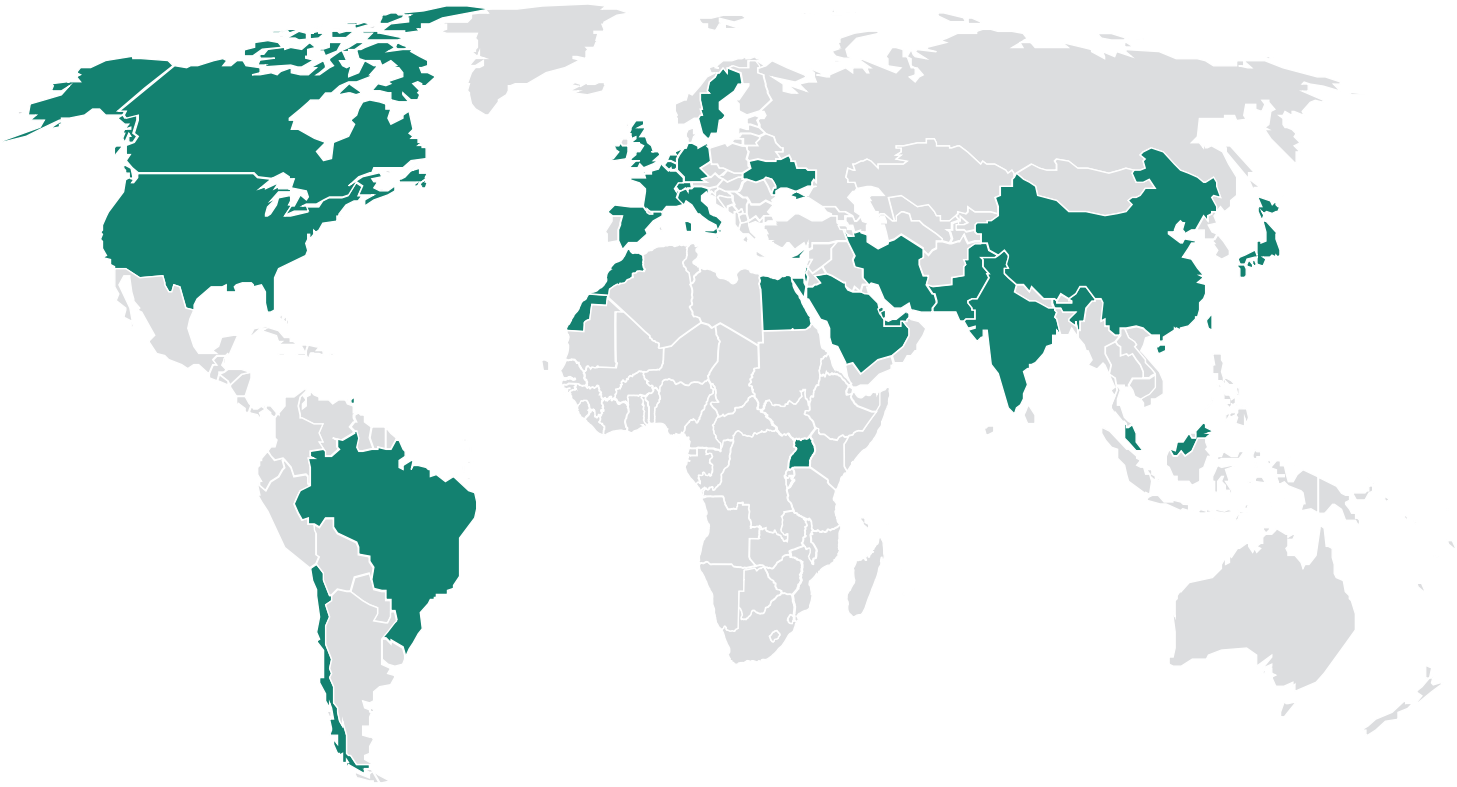
126
Submissions

82%
Production-ready for implementation

76%
Received awards and recognitions

60%
of startups have undergone incubation or acceleration programs

The participation of innovators and problem solvers from various parts of the world has enriched the competition with a multitude of perspectives, experiences, and expertise. This global collaboration not only broadens the pool of creative solutions but also ensures that the resulting innovations are more adaptable and applicable to the complex and varied challenges faced on a global scale.



Distribution of submissions based on the problem statements:

41%

Artificial Intelligence

Automating and increasing adoption of standards in sustainable finance using AI to unlock the value of unstandardised sustainability data

42%

Blockchain

Ensuring data integrity in sustainable finance using blockchain to increase investor and market confidence by enhancing transparency, traceability, and accountability

17%

IoT and Sensor Technologies

Enhancing data collection in sustainable finance using IoT and sensor technologies for monitoring and capturing data to improve accuracy and ensure informed assessments of impact, risk and compliance

Finalist showcase

15 finalists have been selected out of 126 submissions.

Problem Statement 1: Artificial Intelligence

Ahya

Native infrastructure for integrating climate action into every customer experience and empowers precise carbon accounting to help enhance the accuracy and effectiveness of the 4 core application areas: calculating, monitoring, predicting and reducing emissions.

Genify

Offers banks an innovative API-based service, enabling retail banking users to track the carbon footprint of every transaction by providing personalized insights to customers and any SME corporation and business on their carbon footprint based on spend data and supply records.

Intensel

Climate analytics platform that leverages AI, satellite imagery and numerous climate and financial models to translate and effectively measure and disclose climate hazards into financial value-at-risk at the asset level, and at very high resolution and accuracy across all regions globally.

STACS

STACS' ESGpedia data platform leverages AI to streamline data access and facilitate data standardization, ultimately empowering users to navigate the complex ESG landscape efficiently and make informed decisions and allowing them to deploy capital aligned with sustainability goals more efficiently.

U-Reg

Leverages AI to tackle the fragmentation and standardization challenges of ESG reporting and taxonomies, and to help bridge gaps between diverse global, industry-specific, organizational, and regulatory frameworks – ensuring both efficiency and reliability of ESG data.

Problem Statement 2: Blockchain

Carbonbase

Develops a next generation digital native Global Climate Registry, which digitizes the process for project developers to submit real-time reports, increase throughput and connectivity for carbon markets, rebuilding trust and credibility.

FeverTokens

Open-source, modular solution that extends two block-chain frameworks (so|bond and CAST) for capital markets and provides on-chain monitoring and oversight on reported data throughout the tokenized bond lifecycles, boosting transparency and trust in green bonds.

Triangle

Big data platform for sustainability and infrastructure finance, which links big data sources (IoT sensors, billing and API data) to assets to create digital twins that aggregate and report operational, economic, climate and insurance data in a market data construct, thereby providing efficiency and elimi-nating greenwashing.

Trustwise

Leverages blockchain technology to enhance the verification of emission data, facili-tates the emittance of emission allowances, the allocation of allowances and the facilitation of emissions trading, and stream-lines the implementation of Carbon Border Adjustment Mechanism for cross-border trade.

ZERO13

Automated AI and blockchain-driven international carbon exchange, registry and climate fintech services aggregation hub and multi partici-pant ecosystem, empowering market participants to access, trade, and invest in ESG assets with security and ease.

Problem Statement 3: IoT and Sensor Technologies

6th Grain

Leverages mobile fintech, geospatial datasets, and inte-grated mobile data collection system to accelerate sustainable Arabic gum harvest across the African Sahel and help smallholders establish themselves as commercial players with access to credit, insurance, and traders.

Allinfra

The Green Finance Impact Reporting Tool enables users to create trustless on chain formulas for almost any purpose, with inputs from device and system data, manual and other third-party sources selected by an asset/ entity owner, coupled with granular third-party verification and reporting, all within a single platform.

Evercomm

Digital emission disclosure and verifi-cation platform powered by AI and IoT that also tracks emission reduction activities in real-time for green financing or carbon credit applica-tions, ensuring appropriate disclosure and compliance are met for the companies and/or projects.

MistEO

Harnesses the power of automated technology and weather data analytics to provide farmers crop analytics, data-centric science-based parametric insurance and climate decision intelligence platform – safeguarding them from financial losses and equipping them with the informa-tion needed to navigate the challenges posed by climate change.

OpenEarth

CityCatalyst empowers cities to finance decarbonisa-tion with AI, IoT, and other advanced technologies, enabling sustainability officers in local governments to efficiently and cost-effectively collect and manage climate emissions and mitiga-tion data.

Problem Statement 1:

Artificial Intelligence

Ahya

MENAP's unified, AI-powered platform for scaling climate action.

Company description

A climate-tech & AI business with products for measurement, reporting, reduction, analysis and offsetting of GHG emissions. At the core is AhyaOS – an emissions operating software and Tawazun – omni-channel VCM. AhyaAPI is our ecosystem product, providing digital infrastructure for integrating footprint estimation and offsetting into every financial experience.

> At Ahya our vision is to facilitate the regions enterprise-led transition towards net-zero with accuracy, transparency & equitable economic growth.
>
> We harness the power of technology in computation, data science, climate science and artificial intelligence to help FI's and their clients; measure, report, reduce & analyze their emissions and purchase offsets with transparency, verifiability & environmental robustness.
>
> With our proprietary products financial institutions can integrate climate action into every customer experience.
>
> **Salaal Hasan**
> CEO

Solution proposed

The first bilingual (Arabic & English) API that allows our clients to integrate climate action directly within their customer experiences, via three proprietary and patentable endpoints.

Technology

AhyaAPI is digital / native infrastructure in the form of: (I) Emissions Search Endpoint, (II) AhyaAi Estimate Endpoint – process data to estimate GHG footprint, (III) Ahya AI Offset Endpoint – converts a footprint estimate to an offset quote & order.

At a glance

Year Founded
2023

Location
Riyadh, Saudi Arabia

Website
www.ahya.ai

Key people
- CEO: Salaal Hasan
- COO: Junaid Qureshi
- Board: Dr. Jaleed Khawaja
- Board: Dr Johannes Bruski
- Board: Mr. Max Scheder Bieschin
- Lead, Climate Science: Shiza Ali
- Lead, Product: Kamrul Islam
- Director, KSA: Al Hareth Al Suhaibani

Ownership
Private

Number of staff
12

Have you received funding?
Yes

% of gender diversity in workforce
30% F, 60% M

Notable investors
NA

Genify

One API universe for spending transparency & credit access

Company description

Genify allows banks and fintechs to make personal finance management a reality in their mobile app via SaaS APIs covering data enrichment (categorization, merchant logo, website, clean name, CO2 footprint), spending analytics, spending event-based notifications, product recommendation and alternative credit decisioning.

> Banks sit on a treasure trove of transaction data. Genify believes in leveraging transaction data to empower individuals with real-time insights on their carbon footprint, driving eco-conscious choices and shaping a sustainable future-one transaction at a time.
>
> **Alexandre Boulenger**
> CEO and Co-founder

Solution proposed

Genify's proposed solution is a carbon footprint calculator,enabling users to track the carbon footprint of every transaction. Genify's approach integrates seamlessly with banks, informing users of environmental impacts, enhancing eco-conscious decisions.

Technology

Using a proprietary methodology validated by IMF statisticians, Genify offers personalized insights to retail and SME customers. By categorizing transactions through advanced machine learning, Genify communicates emission sources and proportions.

At a glance

Year Founded
2022

Location
Abu Dhabi, United Arab Emirates

Website
www.genify.ai

Ownership
Private

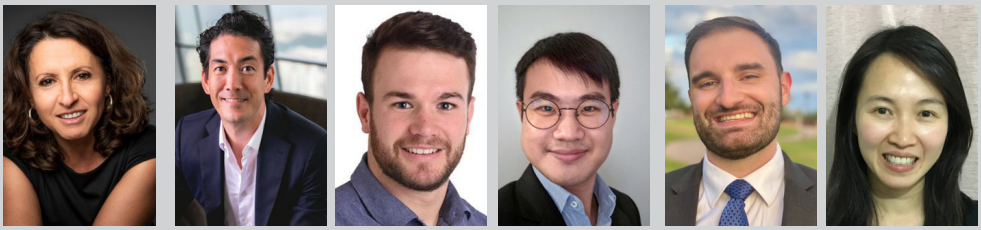
Number of staff
11

Have you received funding?
Yes

% of gender diversity in workforce
20%F, 80%M

Notable investors
HUB71/Mubadala

Intensel



Quantifying climate risk & opportunity down to the asset level

Company description

Based in Hong Kong and Singapore, Intensel is a global climatech company that combines deep climate science data and analytics with financial expertise, enabling companies, asset managers and institutions to measure, analyse, and value climate risks down to the asset level.

> Even in a net-zero world, the impacts of climate change are locked in – we need to invest in both mitigation and adaptation urgently.
>
> Our mission is to see climate risk analytics integrated into all financial decision-making and asset allocation, thereby building a more resilient global economy.
>
> **Dr Entela Benz**
> CEO and Founder

Solution proposed

Intensel's technology and digital platform enables institutions to conduct forward-looking climate scenario analyses on a street level resolution globally. Our solution provides comprehensive and granular insights on climate risk for disclosures, portfolio risk management, real estate due diligence and supply chain risk assessments.

Technology

Leveraging AI/ML and models, we determine current and future financial climate risks. Our rigorous methodology relies on authoritative scientific sources and a robust projection of location-specific multi-climate hazards, combined with high-resolution topography, asset-level build exposure and asset vulnerability.

At a glance

Year Founded
2019

Location
Hong Kong SAR

Website
www.intensel.net

Key people
- Dr Entela Benz, CEO
- Ashley Hegland, COO
- Brendon Nell, Chief of Staff
- Jeffrey Tong, Climate Solutions Manager
- Samuel Monschein, Director of Strategy and Product
- Yvonne Chan, Climate Risk Specialist

Ownership
Private

Number of staff
14

Have you received funding?
Yes

% of gender diversity in workforce
15% F, 85%M

Notable investors
ADB Ventures, Dragon Capital, AEC Hong Kong, Planetrise, HKUST

STACS

ESGpedia by STACS – Asia's one-stop digital ESG platform

Company description

STACS (Hashstacs Pte Ltd) is Asia's leading ESG data and technology company, headquartered in Singapore. Its ESGpedia platform powers the ESCAP Sustainable Business Network (ESBN) Asia-Pacific Green Deal digital platform and the ASEAN Single Accesspoint for ESG Data (SAFE) pilot initiative, and is a technology partner of the Monetary Authority of Singapore's (MAS) Project Greenprint. ESGpedia serves as the Nexus of ESG, empowering the financial sector, corporates, and SMEs to attain their ESG goals.

> ESGpedia has the potential to revolutionize sustainable finance by serving as a comprehensive hub of ESG data, empowering financiers, investors, businesses, and regulators with invaluable insights on environmental, social, and governance factors, thereby driving responsible and informed financing decisions for a more sustainable future.
>
> **Benjamin Soh**
> Managing Director

Solution proposed

STACS' ESGpedia platform aims to provide a comprehensive view of a company's ESG efforts through tapping on the use of generative AI. Through data collection, cleansing and harmonisation, ESGpedia intelligently matches disparate datasets, extracts relevant ESG data from various sources and generates standardised ESG company profiles, mapped to financial sector regulatory formats. This provides financial institutions, asset managers and investors with a holistic view of companies' ESG efforts and disclosures, empowering informed decisions and allowing them to deploy capital more efficiently.

Technology

ESGpedia utilizes advanced AI technology to aggregate, standardize and harmonize more than >5M sustainability data points. This technology employs natural language processing (NLP) algorithms to extract data from various sources, such as reports, online sources, and standardizes this data, ensuring consistency and comparability across different datasets. ESGpedia then harmonises these disparate data into single ESG profiles. This provides users with a comprehensive source of ESG data, facilitating better-informed investment and decision-making for sustainability. Today, ESGpedia has one of the most comprehensive global company coverage, with 200K+ companies' sustainability data, of which 114K+ company profiles have full corporate data overlaid and standardized.

At a glance

Year Founded
2019

Location
Singapore

Website
www.stacs.io

Key people
- Benjamin Soh, Singaporean, Managing Director
- Jin Ser, Singaporean, Director of Engineering
- Benjamin Tan, Singaporean, ESG Business Development Manager
- Kimberly Lee, Singaporean, Senior Strategy & Business Development Manager

Ownership
Private

Number of staff
43

Have you received funding?
Yes

% of gender diversity in workforce
42%F, 58%M

Notable investors
Wavemaker Partners, PWC, Tribe Accelerator

U-Reg

Meet ESG reporting obligations with accuracy and simplified ease.

Company description

U-Reg is a Singapore based RegTech. U-Reg's ESG reporting module, U-Green, has been adapted from the technology developed and used for RegTech reporting as we apply RegTech expertise to ESG processes.

> U-Green streamlines operations and enhance decision-making processes. This bolsters the resilience of both public and private financial markets as we implement an approach that ensures reliable, standardized measurement, tracking, and validation of regulatory ESG data across institutions.
>
> With a harmonized methodology across stakeholders, we can achieve a unified approach to further supporting sustainable capital allocation. By simplifying the convoluted ESG reporting domain, by fostering data consistency, we help optimize efficient resource allocation for the deployment of ESG- capital.
>
> **Florian Dumas**
> Founder & Executive Director

Solution proposed

U-Reg's introduces an innovative AI-driven solution designed to tackle the fragmentation and standardization challenges of ESG reporting, which today impedes efficient ESG implementation for organizations and for investors.

Technology

U-Green combines Artificial Intelligence with RegTech technology. We leverage the latest advances in AI or machine learning to efficiently integrate and manage the complexity of ESG data, in particular the need to process unstructured data such as ESG Disclosure data, at scale, through NLP-based algorithm or classification models.

At a glance

Year Founded
December 2019

Location
Singapore

Website
www.u-reg.com

Key people
- Florian Dumas – Founder and Executive Director
- Ashutosh Jadhav – Chief Technology Officer
- Vincent Caldeira – Advisor to U-Reg

Ownership
Private

Number of staff
15

Have you received funding?
Private Investors

% of gender diversity in workforce
50%F, 50%M

Notable investors
Private Investors

Problem Statement 2:

Blockchain

Carbonbase

The world's first digital native climate registry

Company description

Carbonbase is a APAC climate technology company that leverages data science and blockchain for creating enterprise solutions for measuring, managing and reducing individual and corporate carbon emissions.

> We aim to bring data credibility, technological scalability, evidence transparency to revolutionise the carbon markets, and create a global "preserve-to-earn" economy.

Max Song
CEO

Solution proposed

We are developing the Global Climate Registry, the world's first digital-native carbon registry - with a key focus on on-chain data records for project audibility, data-driven methodology standards, unique digital ID accounts for individuals and corporates, API frameworks to support 3rd party ecosystem, standard setting frameworks under the IEEE Standards body.

Technology

We are developing the Global Climate Registry, the world's first digital-native carbon registry - with a key focus on on-chain data records for project audibility, data-driven methodology standards, unique digital ID accounts for individuals and corporates, API frameworks to support 3rd party ecosystem, standard setting frameworks under the IEEE Standards body.

At a glance

Year Founded
2022

Location
Hong Kong SAR

Website
www.carbonbase.co

Key people
- Max Song
- Kartik Kulnari
- Karen Robbins
- Stella Zhou
- Maria Blanca
- Saharsh Khicha

Ownership
Private

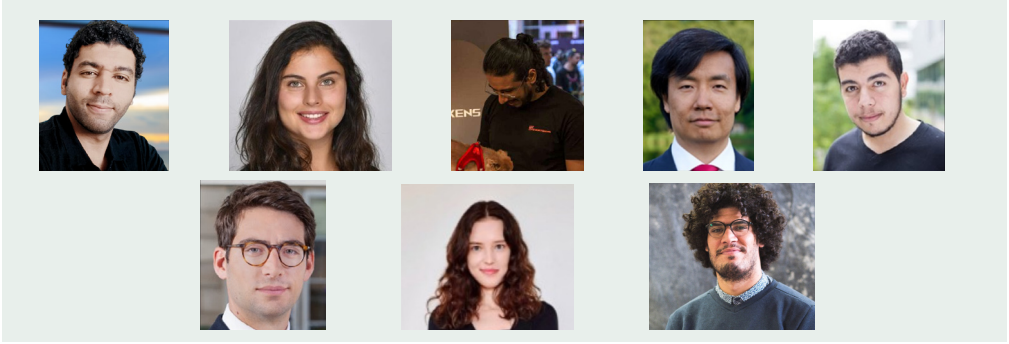
Number of staff
15

Have you received funding?
Yes

% of gender diversity in workforce
40%F, 60%M

Notable investors
Jaan Tallin - Skype cofounder, Metaplanet CEO
Liu Erhfei - Ex-Chairman of Merrill Lynch Asia Pacific
Olaf Carlson-Wee - Founder Polychain Capital
Qi Lu, CEO of Miracleplus (former YC China)
Ding Chun, Founder CRCM Capital
Arjun Sethi, Tribe Capital

FeverTokens



Pioneering advanced blockchain protocols and real-world asset tokenization with scalable, secure, and efficient smart contract solutions

Company description

FeverTokens positions itself to be the fabric of advanced application-level blockchain protocols, including for real-world asset tokenization. Our protocol builder already underpins highly-scalable and sophisticated tokenization projects. We have a unique deeptech approach that enables both functional scalability and enterprise-grade, built-in security with formal verification.

> Encompassing flexibility, modularity, interoperability, composability, reliability, and built-in security, governance and compliance, functional scalability turbocharges the development and adoption of large-scale, sophisticated blockchain applications, for realizing significant societal impact by these apps heavily depends on overcoming the scalability limitations inherent in smart contracts.
>
> **Zakaryae Boudi**
> CEO

Solution proposed

We introduce an open-source, modular solution that extends two blockchain frameworks for capital markets that are fast gaining traction, so|bond and CAST. Specifically, we propose a green-bonds implementation of so|bond that extends the package-oriented, composable, and modular approach for which we won the CAST challenge. Its features ensure data integrity for tokenized bonds and enhance the advantages that blockchain-based digital assets promise.
It follows ICMA's Green Bond Principles (GBP) as well as EU's Green Bond Standard (EUGBS) and provides on-chain monitoring and oversight on reported data throughout the bond's lifecycle.

Technology

Our extensive open-source framework brings modularity, package-oriented design, and scalability to advanced smart contract development, all built on the Diamond Standard. Its modularity, composability, interoperability, and built-in security, governance, and compliance ensure functional scalability marked by high flexibility, scalability, and safety as well as by low cost and time-to-market.

At a glance

Year Founded
2022

Location
Paris, France

Website
www.fevertokens.io

Key people
- Zakaryae Boudi (CEO)
- Mohamed Toub (CTO)
- Jiulin Teng (Head of Growth)
- Youssef Maghzaz (CPO)
- Raphael Ben Chemhoun (COO)
- El Mehdi Lemnaouar (Project Success Manager)
- Ava Cavaglione (Tokenization & RWA Advisor)
- Margot Zenina (Marketing Manager)

Ownership
Private

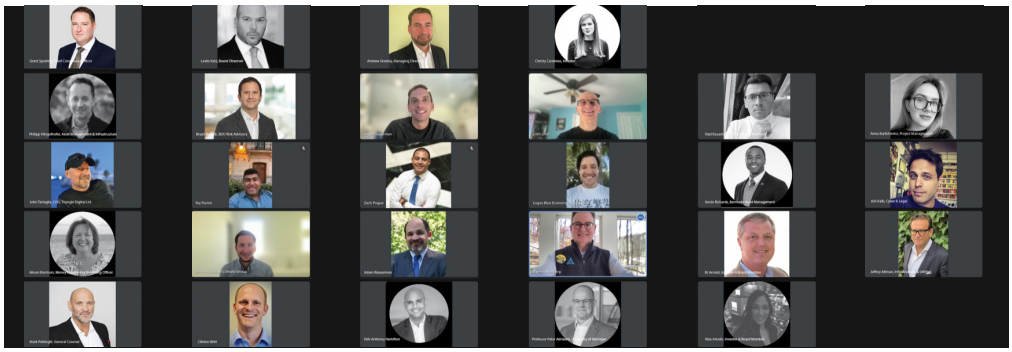
Number of staff
8

Have you received funding?
Yes

% of gender diversity in workforce
25%F, 75%M

Notable investors
[Confidential for now]

Triangle



Big Data Platform for Triangulating Climate and Finance

Company description

Climate is a Big [Data] Problem. Triangle is improves profitability while mitigating asset and compliance risk. Triangle created AssetOS, a managed platform that links big data sources with assets to create Digital Twins of real world assets to triangulate climate data with assets to deliver a unified standardized dataset.

> Climate is a Big [Data] Problem. We triangulate climate data with finance and deliver a Scope 3 superpower that eliminates greenwashing.
>
> **Darren Wolfberg**
> Co-Founder & CEO

Solution proposed

Using AssetOS, Triangle has built a 3-part kit to achieve climate resilience with each module impacting and informing the next: TCFD Compliance SAAS, Sustainability-linked Underwriting and Carbon Credit Minting. These tools together provide both the compliance and financial service tools to solve our customers problems.

AssetOS has demonstrated product market fit with 5 SAAS customers including 2 US banks (significant Ag exposure), 2 asset managers and one government.
Through our digital asset broker dealer we have signed dMRV partnerships to produce fungible carbon credits and have our first trades, 230k MT CO2e and 100m MT of CO2e for sale with transaction-based commission.

Technology

Blockchain is at the core to linking asset with verifiable information. AssetOS is a multi-chain platform (Ethereum, Polygon and Algorand) with a private ethereum ledger of tokenized assets link data attributes raging from TCFD reporting, to loan and bond data, carbon credit performance and value, and AML/KYC data like PEP, Sanctions list, and DOC ID Verification.

Today we receive IoT sensor data (SMA, Enphase, Solar Edge) from live solar assets delivering real-time power production, revenue or cost savings data for loan book risk management, carbon metrics (based on grid or utility MRV) for carbon credit or REC minting. Built an open source API framework for other IoT sensor partners to connect to, the AssetOS Asset Factory is designed to mass produce digital twins for assets in the field or portfolios of assets. Triangle also has integrated utility billing APIs from over 100 US utilities streaming into portfolios so the combine energy production metrics can be measured and assessed. The combination of the two create automated reporting with AI/ML performance training modules to identify anomalies for better risk and performance management.

At a glance

Year Founded
2018

Location
New York City, USA

Website
www.triangle.digital

Ownership
Private

Number of staff
14

Have you received funding?
Yes

% of gender diversity in workforce
35%F, 65%M

Notable investors
University of Michigan, A100X, Algorand, Elbow Beach Capital, Casseopia Ventures

Trustwise

Token-based carbon emission management solution aligning non-EU countries with EU ETS standards

Company description

Our firm excels in Enterprise Blockchain Solutions, focusing on minimizing contract fulfillment costs and boosting efficiency through innovative blockchain applications. We provide comprehensive solutions tailored for governments and various businesses, capitalizing on the transformative potential of blockchain.

> Our innovative blockchain carbon ledger is a game-changer in sustainable finance, enhancing transparency and accountability in national and cross-border emissions management.
>
> It encourages responsible green investments and paving the way for a future where financial decisions are aligned with environmental sustainability.
>
> **Hans Peter Gier**
> CEO & Founder

Solution proposed

- CO2 Coins representing Carbon Credits and Allowances.
- Reduction of CBAM Liability with national (Non-EU) Carbon Credits from Offset-Projects
- Platform for establishing EU ETS compatible national carbon emission management systems

Technology

EVM-based blockchain (Hyperledger BESU)
Blockchain-Access-layer
Postgres Database), S3 (Documents), Django (Framework), Typscript
Mobile: iOS, Android

At a glance

Year Founded
2017

Location
Basel, Switzerland

Website
www.trustwise.io

Key people
- Hans Peter Gier
- Samy Amara, Dr.
- Michal Florian
- Vladyslav Lupashevskyi
- Tetiana Gier
- Petr Tejkal
- Alexa Maingard
- Hubert Lemczak

Ownership
Private

Number of staff
10

Have you received funding?
Yes

% of gender diversity in workforce
20%F, 80%M

Notable investors
Hans Peter Gier

ZERO13

ZERO13 – The leading automated blockchain-driven platform-as-a-service ecosystem for the trading, clearing and settlement of carbon credits and ESG real world assets

Company description

ZERO13's Platform-as-a-Service is helping to achieve Net Zero by leveraging software and blockchain rails to restore trust in carbon credit markets, aggregating carbon market participants into a global ecosystem for financial and environmental gains; with a focus on Energy, Water & Food. It offers a distributed point of entry for digital issuance, trading and real-time settlement of carbon credits, with supply verification and transparent pricing and addressing greenwashing and market fragmentation. It serves as a distributed hub to connect carbon exchanges, buy-side carbon emitters and custodians, with supply-side ESG project owners globally and their carbon offset projects in multiple registries to drive distribution.

> In a world where sustainable finance is the key to a greener tomorrow, ZERO13 is the connective tissue that bridges intention to tangible change, ensuring the drive to Net Zero is collaborative and meaningful across jurisdictions through digital enablement. With ZERO13's cutting-edge use of blockchain, we're not just introducing transparency and trust into carbon markets; we're redefining the future of sustainable finance. Our platform ensures that every ESG asset and every transaction not only adheres to the highest standards but also drives real, measurable impact.
>
> **Hirander Misra**
> CEO of ZERO13

Solution proposed

ZERO13's comprehensive ecosystem (Carbon Aggregation Hub, digital Asset Settlement Network, Carbon Exchange, and Carbon Registry digital enablement layer) eliminates concerns such as greenwashing and double counting, providing a robust framework for data verification and traceability by facilitating efficient issuance, trading, clearing and settlement of carbon credits based on real mitigation outcomes. ZERO13 extends its functionality to tokenizing various ESG assets providing a secure and efficient platform for trading.

Technology

The ZERO13 technology stack embraces a cloud-agnostic architecture and as a network of networks utilises a hybrid approach,blending multiple blockchain interoperability (both public and private) and numerous APIs using proven industry standards. ZERO13 consists of:

ZERO13 Chain, a layer 2 blockchain network, which uses a public blockchain for creating Tokens that allow external transparency. It uses a private journalling network for controlling access/approvals with bridging to multiple blockchains. It also provides an immutable audit trail.

ZERO13 Hub allows for multiple registries and multiple platforms to connect. ZERO13 Hub is built on a tech stack comprising cloud microservices, all while employing de-facto standard REST APIs.

ZERO13 Markets allows for ease of price discovery and trading by Project Owners, Brokers or Banks .
ZERO13 Markets features industry-standard FIX interfaces in addition to high speed binary interfaces.

At a glance

Year Founded
2012

Location
London, United Kingdom

Website
www.zero13.net

Key people
- Hirander Misra, CEO
- Tony Harrop, CIO
- Aleksandr Kopnin, Digital Assets CTO
- Emmanuel Devedeux, Head of Business Development

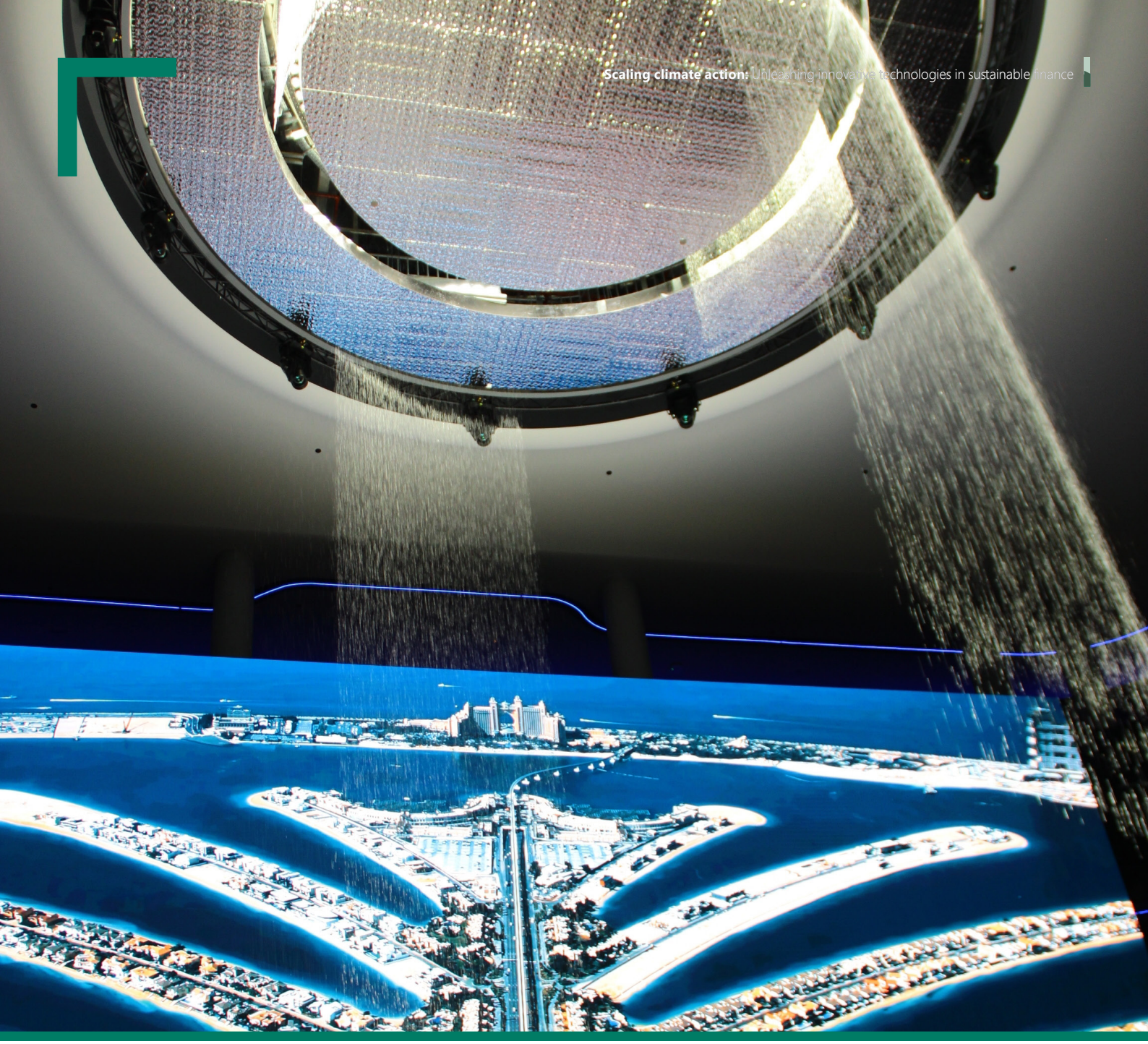
Ownership
Private

Number of staff
30

Have you received funding?
Yes, but also have a current round

% of gender diversity in workforce
25%F, 75%M

Notable investors
Hirander Misra, MD of Misra Ventures



Problem Statement 3:

IoT and sensor technologies

6th Grain Corporation

Growing the Future with Technology

Company description

6th Grain develops AI digital agriculture platforms for government agencies and private sector clients that integrate weather, soil, climate data, remote sensing and farmer-provided information for better farm and forest management decisions. We work with local country partners to implement fintech and agritech technology solutions that are suitable for specific conditions on the ground.

> Better use of remote sensing, IoT technology, AI and financial tools in low- income communities to harvest Gum Arabic can accelerate climate adaptation in the Sahel.

Molly Brown
Chief Science Officer

Solution proposed

Using mobile fintech, geospatial datasets, and integrated data mobile data collection system, we will provide a platform that can support a vibrant Gum Arabic value chain across the African Sahel. Gum Arabic can provide critical alternative livelihoods for smallholder farmers in a warming world.

Technology

Using high resolution satellite imagery of trees, yield models, field data gathering, and internet of things and support of local banks, we can provide advice, recommendations, and agronomic support to target financial investments.

At a glance

Year Founded
2014

Location
Bethesda, Maryland, USA

Website
www.6grain.com

Key people
- Molly Brown, PhD, Chief Scientist
- Vladimir Eskin, PhD, CEO
- Min Feng, PhD, Head of Remote Sensing
- Dmitry Mikhailov, PhD, AI and ML
- Charles Lufumpa, PhD, Africa lead

Ownership
Private

Number of staff
37

Have you received funding?
Yes

% of gender diversity in workforce
45%F, 55%M

Notable investors
Joseph Kasputys, PhD, Principal investor and senior advisor

Allinfra

We're revolutionizing the climate market.

Company description

Allinfra Climate is a sustainability data management software that helps institutions achieve their ESG goals. Collecting climate-relevant information directly from devices and systems, our end-to-end solution allows users to store, report or monetise this verifiable, auditable data.

Together with our asset tokenization platform Allinfra Digital, we are bringing access, choice and liquidity to infrastructure and environmental assets.

> Our solution makes it cost-effective, reliable and timely for issuers, borrowers and asset owners undertaking climate finance to collect, store and use relevant data for almost any purpose - from the reporting of ESG metrics, through to the direct on-chain creation of financial products from source data.
>
> The Allinfra Climate platform ensures that data collected, stored and used is both private to the issuer/borrower, but easily traced, transparent and immutable, allowing investors to rely upon such data, enhancing market confidence and ultimately leading to a significant increase in climate finance and provably climate positive projects receiving funding.
>
> **Dave Sandor**
> Co-Founder and CEO

Solution proposed

The Green Finance Impact Reporting Tool enables users to create trustless on-chain formulas for almost any purpose, with inputs from device and system data, manual and other third party sources, coupled with granular third party verification and reporting, all within a single platform.

The data collected can also be used within the Allinfra Climate Platform for creation of fully digital environmental financial products, like carbon credits or RECs.

Technology

Data collection direct from device (IoT), system, or manual input. A suite of technologies from smart contracts, to zk data rollups are then used for the creation, verification and publication of formulas/subformulas, reports and product creation

At a glance

Year Founded
2018

Location
Hong Kong SAR

Website
www.allinfra.com

Key people
- Bill Kentrup (Head of Origination, Co-Founder)
- Dave Sandor (CEO, Co-Founder)
- Kelvin Yuen (CFO)
- Michel Dinh (CTO)
- Toby Goodden (Product Manager)

Ownership
Private

Number of staff
19

Have you received funding?
Yes

% of gender diversity in workforce
21%F, 79%M

Notable investors
Laser Digital (Nomura), ConsenSys

Evercomm Singapore Pte Ltd

Reality of Sustainability, Real Benefits, Recognized

Company description

Evercomm provides a comprehensive net-zero planning and management platform equipped with an all-inclusive suite of decarbonization tools. Our services cater to the entire spectrum of decarbonization needs, facilitating a seamless transition to a carbon-neutral future.

> By harnessing the power of Artificial Intelligence and Machine Learning, we can now digitally assess and verify the sustainability impact of projects on a large scale. This process ensures that all funded projects meet or exceed international standards for carbon emissions reporting and environmental transparency.
>
> **Chen Chiu-Hao (Ted)**
> Cofounder & CEO

Solution proposed

Nx-Map focuses on carbon emission compliance reporting and baselining in compliance with International standards (ISO). Nx-Ops focuses on digital automation by implementing AI and machine learning for activity-level carbon emission performance tracking.

Technology

We utilize Artificial Intelligence and Machine Learning to streamline and automate the intricate process of emission compliance and reduction recommendations for complex industrial sectors.

At a glance

Year Founded
2013

Location
Singapore

Website
www.evercomm.com.sg

Key people
- Chen Chiu Hao (Ted)
- Shivam Pandya
- Phyo Ko Ko
- Peter Ong
- Robert Field-Marsham
- Velan TS

Ownership
Private

Number of staff
50

Have you received funding?
Yes

% of gender diversity in workforce
48%F, 52%M

Notable investors
Mitsubishi

MistEO

Climate Change Covered

Company description

mistEO is a climate fin tech company providing climate change adaptation know-how to private enterprises and governments to overcome the cost of climate change. We help businesses, organizations, and governments to adapt and be resilient.

mistEO's Takaful based parametric crop insurance solution uses IOT based hyper local weather observations and crop analytics to reduce moral hazard and thereby the basis risk for insuring crops.

Harnessing the power of automated IOT technology and weather data analytics, we aim to create climate resilient agricultural communities that can thrive in the face of environmental uncertainties. Rooted in the principles of the sharia, our solution seamlessly aligns with the cultural values of the region and ensures financial assistance for the farmers precisely when they require it, delivering transparency, objectivity, and free of human induced errors.

Ani Varghese
Chief Product Officer

Solution proposed

The solution synchronously uses satellite data analytics, weather observations and prediction and field instrumentation for determining payout conditions while a blockchain infrastructure is used for provenance and smart contract execution. The solution pays out the farmer in near real time as predefined indexes are breached.

Technology

IOT based hyper local weather sensors, high resolution numerical weather modelling, satellite based crop analytics, a rule based parametric term sheet engine and a blockchain infrastructure for data provenance and smart contracting.

At a glance

Year Founded
2019

Location
Trivandrum, India

Website
www.misteo.co

Key people
- Samuel John, Founder
- Ani Varghese, Chief Product Officer
- Ambarish Narayanan, CIO
- Ajith Kumar, CTO
- Maneesh M J, Geospatial Analyst
- Jeev Varghese, Meteorologist
- Hridayan Phukan, Software Engineer
- Rashmi Ranjan Singh, Software Engineer

Ownership
Private

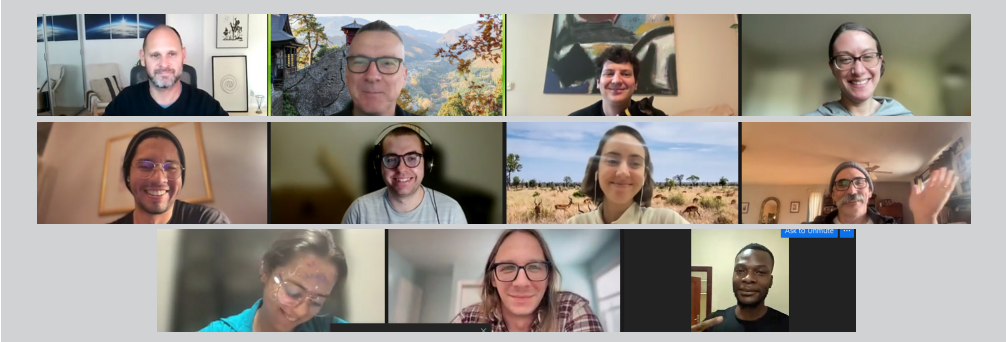
Number of staff
12

Have you received funding?
No

% of gender diversity in workforce
20%F, 80%M

Notable investors
Accubits Inc.

Open Earth Foundation



We are creating open source digital solutions for a thriving planet.

Company description

As a mission-driven organization dedicated to positively impacting planet earth through digital solutions, Open Earth Foundation leverages radical collaboration and bold innovations to unlock climate tech solutions.

Our diverse team of creative thinkers is spread across 4 continents which helps us leverage different ideas to earth's biggest challenge–climate change.

> We can help cities finance their climate action plans by providing them with the necessary data they need to access funds. By leveraging emerging tech, cities can focus on fundraising and implementing climate action instead of spending their resources on data collection.
>
> **Joaquin van Peborgh**
> Director of Product

Solution proposed

Leveraging emerging tech, including satellite data and AI, to help cities build their GHG Inventories, manage their climate data and streamline finance for projects.

Technology

We use IoT, satellite data, and AI for data harmonization, to create GHG inventories for cities in a scalable and efficient way, so as to accelerate finance via data-driven decarbonisation plans.

At a glance

Year Founded
2020

Location
Marina Del Rey, CA, USA

Website
www.openearth.org

Key people
- Martin Wainstein
- Evan Prodromou
- Joaquin van Peborgh
- Milan Gruner
- Maureen Fonseca
- Cephas Chapa
- Luke Gloege
- Greta Gawianski

Ownership
501(c)3 Nonprofit Corporation

Number of staff
13

Have you received funding?
Yes

% of gender diversity in workforce
38%F, 62%M

Notable investors
Hewlett Foundation
Carnegie Foundation

3

Conclusion

Prominent players in global finance are supporting a shift towards sustainability, driven by demand from regulators and investors for innovative and responsible solutions. Stakeholder requirements and sustainability disclosures are evolving to meet the growing need for transparency, with a particular focus on diverse sustainability themes. The rise of green, social, sustainability, and sustainability-linked financial instruments, coupled with increasing demands for climate risk management, voluntary carbon offsets, consumer nudging, and sustainable cities – all underscore the financial sector's commitment to address climate change.

Emerging technologies continue to enable and scale sustainable finance. AI's ability to comprehend, learn from and provide insights from massive amounts of data, enhances sustainability disclosures and assessments, and streamlines the adoption of green frameworks. Blockchain technologies streamline data integrity and transparency – preventing greenwashing in sustainable finance transactions facilitated by digital identities and smart contracts for complex counterparty workflows. IoT technologies produce critical sensor telemetry for AI driven learning systems, enabling real-time monitoring and reporting of sustainability metrics, enhancing data accuracy, proactive risk management, and compliance with sustainability requirements.

The COP28 UAE TechSprint challenged participants around the world to fast-track innovative technology solutions to address challenges in green and sustainable finance. In doing so, the TechSprint also highlighted the importance of cultivating a collaborative culture of innovation and working with a diverse set of ecosystem players to solve some of the world's biggest challenges. The solutions received from the innovators demonstrated ways in which emerging technologies can be successfully and creatively leveraged to scale sustainable finance – thereby aligning economic interests with environmental and social good.

4

Panel of judges

Problem Statement 1:

Innovative artificial intelligence solutions in sustainable finance to scale up climate action

Ma Jun

Chairman, China Green Finance Committee; President of Institute of Finance and Sustainability

Saqr Bin Ghalib

Executive Director, UAE Artificial Intelligence, Digital Economy and Remote Work Applications Office

Madelena Mohamed

Sustainability Director, Bank Negara Malaysia

Hortense Bioy

Global Director of Sustainability Research, Morningstar

Marcos Lopez de Prado

Global Head, Quantitative R & D, Abu Dhabi Investment Authority

Problem Statement 2:

Innovative blockchain solutions in sustainable finance to scale up climate action

Annette Nazareth

Chair, Integrity Council for the Voluntary Carbon Market

Alexander Lipton

Global Head, Quantitative R & D, Abu Dhabi Investment Authority

Sonja Gibbs

Managing Director and Head of Sustainable Finance, Institute of International Finance

Pourya Salehi

Head of Urban Research, Innovation, and Development at ICLEI - Local Governments for Sustainability

Keith Bear

Fellow, Cambridge Centre for Alternative Finance

Problem Statement 3:

Innovative IoT and sensor technology solutions in sustainable finance to scale up climate action

Jean Pesme

Global Director of Finance, Competitiveness and Innovation Global Practice, World Bank

Viviane Helena Torinelli PhD

Transversal Intelligence for Sustainability, Central Bank of Brazil

Matthew McCabe

Director of the Climate and Livability Initiative, King Abdullah University of Science and Technology

Kathrine Foster

Executive Director, Green Digital Finance Alliance

Caitlin Nash

Co-Founder, GIIG Africa