



Decision Metrics and Finance



Decision Metrics and Finance

Climate-KIC's Decision Metrics and Finance theme focuses on developing and integrating novel metrics, finance and decision-making mechanisms that accelerate and scale up climate action. This underpins all economic sectors, from cities, agriculture and manufacturing to real estate and energy.

Legislation and global policy is driving greater disclosure and transparency in investment. There is a need for a clearer understanding and management of climate risk, for standardisation in reporting, monitoring and verification. There is a need to shift from divestment to green reinvestment, by identifying bankable, climate-friendly projects. We inspire change by innovating in ways that address these needs, making the business case for sustainability. Leading in this way can become a competitive advantage that others want to follow.

Key Activities

- **Metrics and Evidence-Based Targets**
From carbon management to environmental auditing, we address data and evaluation so that sectors, companies, cities and investors understand where they are now and where they need to go in order to thrive in the long term, save costs, and deliver on climate targets.
- **Unlocking Finance and Investment**
Together with our partners, we develop novel approaches to mobilise the investment needed to decarbonise sectors and catalyse the rapid uptake of innovations, often already out there. Our risk management and adaptation services determine the cost and impact of climate change currently not visible across sectors, supply chains and investments, while offering ways to build in resilience. We support investors in identifying and accessing bankable, green projects by articulating new models of value, benefits and returns.
- **Informing and Educating Decision-Makers and Markets**
With our partners, we advance cutting-edge knowledge and skills through collaboration and professional development. We inform and educate sectors, cities, markets and decision-makers, building the collective intelligence needed to implement identified climate actions.

Low Carbon City Lab – LoCaL

Summary

Between €0.36 and €1 trillion per annum of incremental investment is needed over the next 15 years to set cities on a low-carbon and resilient development path to meet climate targets, build resilience and cope with booming urban populations. Climate-KIC's Low Carbon City Lab (LoCaL) is a global innovation hub, and flagship programme within the Decision Metrics and Finance theme, that aims to unlock climate finance for cities, identifying options to raise capital, and facilitating investment in fundamental mitigation and adaptation projects.

Key Points

- The demands of a booming urban population, globally, pose challenges for infrastructure, buildings, energy, water systems and drainage, sanitation, waste management, housing and mobility
- Cities need to be resilient, and able to deal with climate risk and impact
- Between €0.36 and €1 trillion per annum is needed over the next 15 years to set cities on a low-carbon and resilient development path
- Barriers to transition include high transaction costs, uncertainty in national and international frameworks, a lack of resources in making green and sustainable projects attractive to investors, and gaps in knowledge about available finance options and mechanisms
- LoCaL has four main work components: training and capacity building, project preparation, investment mechanisms, and an impact assessment hub



Programme Background and Drivers

The demands of a booming urban population, globally, pose challenges for infrastructure, buildings, energy, water systems and drainage, sanitation, waste management, housing and mobility. Cities need to be able to deal with climate risk and impact. They must be sustainable, zero-carbon and resilient. Cities have a major role to play in improving air quality, reducing emissions, waste and resource use, and at the same time, must provide for public health and offer social balance.

Between €0.36 and €1 trillion per annum of incremental investments is needed over the next 15 years to set cities on a low-carbon and resilient development path to meet such demands. Barriers including a lack of perceived mandate from the electorate, high transaction costs, and uncertainty in translating national and international frameworks into concrete objectives, must be addressed. Cities need the resources and capacity to make green and sustainable projects attractive to investors. They need to bridge the gaps in knowledge about available finance options and coordinate complex stakeholder needs.

Programme Detail

Climate-KIC's Low Carbon City Lab (LoCaL) is a global innovation hub, and flagship programme within the Decision Metrics and Finance theme, that aims to unlock climate finance for cities, identifying options to raise capital, and facilitating investment in fundamental mitigation and adaptation projects.

LoCaL's training and capacity building work, which includes its renowned Cities Climate Finance Training initiative, helps build city capabilities in accessing finance and developing bankable projects. It delivers modular training to cities in regional clusters across the EU, north Africa and southeast Asia. Hands-on partner expertise is crucial to this work. Led by partners I4CE and FMDV, LoCaL's Cities Climate Finance Training initiative is currently training more than 20 Moroccan and Tunisian local authorities in preparation for the COP22.

The project preparation and facility strand addresses a dearth of attractive and bankable urban mitigation and adaptation projects, and looks to accelerate such investments in cities around the world. It does this through establishing multi-competence centres that evaluate the finance and technical expertise of urban projects.



LoCaL's investment mechanisms address the lack of financial mechanisms at city and project level. This involves developing novel finance initiatives, specifically for cities. For investors, it is about identifying worthwhile urban mitigation and adaptation projects that will provide a return on investment. It works to connect city administration departments across finance, sustainability and environment. There are a number of LoCaL investment mechanism schemes including Green Bonds for Cities, led by Southpole with Climate Bonds Initiative, Climate Policy Initiative and ICLEI. The aim is to develop a series of toolkits to accelerate green bonds development, with Mexico city as a pilot.

The LoCaL monitoring, reporting and verification hub (Impact Assessment hub) explores ways to remediate uncertainty in national and international frameworks, deal with high costs and address the complexity of impact assessment. It does this through the developing and innovating MRV tools for cities, which can then be used to identify the best approach. The hub also translates technological developments into usable solutions, based on internationally recognised standards.

Among the Impact Assessment initiatives are Carbon Track and Trace, Big Data platforms for cities, led by NTNU, with DTU and ICLEI. The project has pilots in Vejle and Trondheim. Another, Waste Miti2, led by Suez, with LSCE and TNO, develops monitoring tools and assistance for the waste sector. IM4CT, led by Teralytics with Southpole and Telefonica, is exploring how traffic flow and emissions in Nuremberg can be monitored using mobile phones.

These four major areas of focus are approached in an integrated manner, with a view to understanding their interactions. LoCaL has ambitious aims to become the leading innovation hub where cities, investors and solution providers gather to pilot and scale financial mechanisms for cities.

Climate-KIC Support

Climate-KIC has managed to establish a collaborative environment for cities, NGOs, public and private investors and solution providers to unlock climate finance for cities. The Climate-KIC manages to bring organisations out of their comfort zone and creates the necessary bonds between the public and private sector on climate innovation. Finally, LoCaL and the Climate-KIC empowers cities in their climate action by enabling them to pilot innovative financial solutions to fulfil their ambitions.

What's Next?

LoCaL has successfully created a community of cities, researchers, corporates and city networks, working hand in hand with investors and donors. LoCaL is part of the UN-led Cities Climate Finance Leadership Alliance (CCFLA) and chairs the Innovation Labs Working Group.

Between €0.36 and €1 trillion per annum of incremental investment is needed over the next 15 years to set cities on a low-carbon and resilient development path.

Matchmaker – LoCaL

Summary

The demand from investors for climate-friendly projects is increasing. Urban schemes can offer the greatest potential to make a difference environmentally, and produce a healthy return on investment. Finding these opportunities and investing in them, however, is far from straightforward. Matchmaker, a project led by CDP (previously known as the Carbon Disclosure Project), part of Climate-KIC's Low Carbon City Lab (LoCaL) Flagship Programme, is developing a service to bridge the gap between cities and investors, bringing them together to help ensure funds are channelled to green projects, and accelerate climate action.

Key Points

- Investors are increasingly looking for bankable, green, climate-mitigation projects
- The world's cities, responsible for around 75 percent of greenhouse gas emissions, can offer these investment opportunities
- There is a lack of knowledge on both sides of the equation, however
- Matchmaker is developing a service to educate cities and investors about green investment opportunities, and to match up the latter with suitable urban projects
- It hopes to have 15 projects on its books by the end of this year, rising to 100 within five years



Project Background and Drivers

Over the next 15 years, according to the Global Commission on the Economy and Climate, around €102 trillion will have to be invested in low-carbon infrastructure. Public sector funds can only meet around one-fifth of the total – the rest has to come from private sources. Cities have a huge role to play in tackling climate change and its effects. They account for 75 percent of global greenhouse gas emissions and 80 percent of energy consumption.

The ratification of the 2015 Paris Agreement driving de-carbonisation, pledges from institutional investors to divest €2.7 trillion of assets from fossil fuels, and investment clients pushing for portfolio diversification, are all propelling the demand for climate-friendly projects.

Capital is out there – but, as a white paper prepared for the LoCaL programme by CDP in 2016 found, a number of barriers exist between investors and climate-friendly urban projects. The main difficulty for cities lies in preparing projects to a high-enough standard that they pique investors' interest. Cities often lack the capacity or expertise to identify and market suitable projects and structure them. There can also be a lack of understanding of the wider social and economic benefits that climate-friendly projects can bring to cities. It can be difficult to align the various stakeholders, and some cities, particularly in developing economies, may have problems with creditworthiness.

Project Detail

The Matchmaker project, part of Climate-KIC's Low Carbon City Lab (LoCaL) Flagship Programme, is developing a service that aims to bridge this gap between cities and investors. LoCaL has an overarching aim to reduce CO2 emissions by 1 Gt annually and to leverage €25 billion of climate finance for cities by 2050. Central to the Matchmaker service is a marketplace where investors will be able to browse a library of suitable urban mitigation projects. Through consultations and workshops, Matchmaker also aims to demonstrate to investors the opportunities and benefits that urban projects can offer, while at the same time educating cities in how to better market their projects and attract more finance.



The idea was born out of research carried out last year by CDP, examining the barriers preventing private sector investment reaching urban climate-mitigation projects. "The main conclusion was that the finance is out there but the problem is cities are often unaware how they can attract more finance by developing climate-mitigation projects," explains Florianne de Boer, an analyst at CDP who leads on the Matchmaker project, alongside Maia Kutner, Head of Cities at CDP. "And from the other side, investors don't know these opportunities are out there."

"We wanted to use the strength of our network to connect cities and investors. The form the marketplace will eventually take is still under discussion. It could be an online platform, or a service where investors come to us and we can match them up with cities," says de Boer. "It could take different shapes."



Matchmaker also aims to demonstrate to investors the opportunities and benefits that urban projects can offer, while at the same time educating cities in how to better market their projects and attract more finance.

The workshops are opportunities for investors and city officials to gain a better understanding of each other's requirements, and showcase existing projects. The first, held in Washington DC in May alongside Climate Action's 2016 summit, and organised by ICLEI, demonstrated a need to standardise the way cities report and present their projects. As a consequence, the team developed a template with which cities could present their projects in time for the second event, held alongside ICLEI's Resilient Cities Conference in Bonn in July.



Matchmaker held its third event in September, alongside the Principles for Responsible Investment conference in Singapore. For this, the team also produced a booklet for investors containing details of six projects, ranging from retrofitting thermally inefficient buildings in Mongolia's capital, Ulaanbaatar, to a monorail and tram scheme in the Indonesian city of Balikpapan. "And we saw that investors are really interested in helping develop these projects and in asking one-on-one questions, so we also had speed-dating sessions there that city representatives found very useful," says de Boer.

The workshops have been a learning experience for the hosts, too. "Each event was quite different, and each has fed into the organisation of the next one," says de Boer. "[In Singapore], we had the cities and investors there, but we had no one in the middle, no project developers or service providers," says de Boer. These can talk to both investors and cities, who often speak a different language and have different interests. Having a connector, could help facilitate communication between the two.

This thinking will be incorporated into the fourth, upcoming, Matchmaker workshop, in Amsterdam in December – a side event to the Global Impact Investing Network Forum. "The strategic partnership between CDP and Climate-KIC has really helped us organise this," says de Boer. "We want to get some projects presented there along with people from the private sector, so investors have more people they can engage in conversation."

Climate KIC Support

Climate-KIC has supported Matchmaker and LoCaL through crucial funding of CDP's initial research, and by bringing the programme's partners together. CDP leads the project; its main partner is ICLEI, whose role is to engage cities and source suitable projects. South Pole Group is working on the criteria for guaranteeing the financial feasibility of projects, while Gold Standard, is taking this approach on the sustainability side.

"Climate-KIC works as a magnet to link us up with all these different initiatives out there, so we can transfer knowledge back to the programmes but also integrate knowledge with them," de Boer explains. As a result, there has been cross-pollination between Matchmaker and other LoCaL projects. "Climate-KIC is really promoting that," says de Boer. "There is a lot of cross-learning between the [LoCaL] projects so we are not reinventing the wheel but building on what the others are doing"

What's Next?

While Matchmaker is building momentum among investors and cities, the concurrent goal is to ensure its longer-term financial stability. By the end of 2016, Matchmaker plans to finalise its business plan, and to scale up its operation soon after. "We aim to have 15 projects available this year via the service, each of which would provide on average 130kt of CO₂ reduction, and then we want to scale that up to about 100 projects over the coming five years," says de Boer. "That's what we set out to do. Now we need to do it."

Green Bonds for Cities – LoCaL

Summary

Issuing green bonds allows cities to access low-cost capital earmarked for investment in climate-friendly municipal projects. This funding stream can be hard to access for many cities in developing countries for a variety of reasons. These can include a lack of knowledge around developing green bonds, low creditworthiness and weak or absent green project portfolios. Green Bonds for Cities has developed a set of tools to help cities navigate such obstacles to kick start new low-carbon developments and renovations to existing infrastructure. Green Bonds for Cities is currently working with Mexico City, which aims to issue its first green bond – the first issued by any city in South America – in early 2017. The city intends to direct the proceeds towards existing plans to expand its bus network, improve its water infrastructure and invest in low-emission buildings.

Key Points

- Green bonds are bonds issued specifically to fund climate-friendly and green development
- In 2015, €46bn of green bonds were issued globally, four times the amount issued in 2013
- Cities produce 70 percent of the world's energy-related CO2 emissions yet only a tiny fraction of the capital raised by green bonds has found its way to municipal projects in developing countries
- Barriers to issuing green bonds include poor creditworthiness and lack of relevant expertise
- A little support, however, can go a long way
- Green Bonds for Cities aims to help cities to overcome these obstacles
- The project expects to facilitate green bond issuance to fund up to 40 projects by 2020
- Currently the project is working with Mexico City, which plans to issue its first green bond in 2017

Project Background and Drivers

Bonds are a low-cost form of debt for the municipal, national and corporate bodies able to issue them. They lend at a fixed-rate of interest, shielding the issuer from interest-rate volatility, and are generally cheaper than long-term bank loans, which, unlike bonds, often entail restrictive covenants.

Green bonds differ from their standard cousins in one fundamental aspect, however: their proceeds must be earmarked for spending on climate-friendly projects.

For cities looking to raise cash to fund environmentally friendly upgrades to their infrastructure, or to fund brand new facilities, green bonds are a cheap way to do so – and one for which there is a huge, and growing, demand.

In 2015, the total value of green bonds issued globally was €46 billion, a fourfold increase on 2013. In 2016, more than €46 billion had already been issued by the start of October. Zurich Insurance alone has pledged to invest €2.2 billion in green bonds. But, only a tiny proportion of the money raised globally by green bonds, around 1.7 percent, has found its way to city-based projects in developing and emerging economies.

Cities contribute an estimated 70 percent of global energy-related CO2 emissions. The Cities Climate Leadership Group has found that 228 cities across the world, representing 436 million people, have pledged to reduce their emissions by a total of 13Gt by 2050. Improving their energy, transport and waste infrastructure will be key to achieving this.





“We know these sectors are crucial for reducing cities’ carbon footprints,” explains Viola Lutz, consultant at South Pole Group, the lead organisation for the Green Bonds for Cities project. Green bonds already play an important role in funding these improvements, she says. In the Swedish city of Gothenburg, for example, the first city to issue green bonds, the proceeds have been used to fund biogas production and the purchase of electric vehicles for municipal offices, among other projects. But tapping into the green bond market can pose significant challenges for cities in emerging economies for a variety of reasons.

“In developed countries, most cities are legally allowed to issue green bonds and they have decent budgets that allow them to issue debt,” says Lutz. “In emerging and developing economies, only 20 percent of cities is creditworthy in their local financial markets. That means the other 80 percent needs to find alternative avenues to issue a green bond.”

Those avenues do exist, she adds, but they all require specialist knowledge to unlock and access. Cities could look to improve their creditworthiness through credit enhancement, or they might be able to issue green bonds through affiliated municipal organisations with stronger balance sheets such as local utilities or public transport corporations, or to work with commercial or development banks. “A lot of cities fail to see this spectrum of options,” Lutz adds. “This is one of the barriers we see, and where we want to help cities structure their thinking.”

Finding a way to issue a green bond is just one step in the process, however. City officials must also make decisions – first, on which projects are suitable for funding in this way, and second, on setting-up the monitoring and reporting systems necessary to keep investors informed about the progress and environmental impact of their investment. Neither is straightforward.

Project Detail

In March 2016, the Green Bonds for Cities project began work under the umbrella of Climate-KIC’s Low Carbon City Lab (LoCaL) programme to help cities in developing economies negotiate the barriers hindering them from accessing this rapidly expanding supply of budget-friendly finance.

Green Bonds for Cities has developed a three-pronged set of tools to help cities in emerging and developing countries broach these obstacles and access the green bond market. First, it has produced a set of strategy guidelines, intended to help cities find the best pathways to access green bonds: what are the city’s bond-issuing options, for example, and what is the definition of a green project?

Second, cities will be able to use a newly developed green bond toolkit, a set of ready-to-use tools that can help identify suitable projects as well as assist in setting up the necessary reporting and monitoring systems. Finally, Green Bonds for Cities is developing person-to-person training sessions for city officials based on the information contained within the guidelines and toolkit.

Green Bonds for Cities is able to draw on the extensive municipal contacts of two of the project partners – ICLEI (Local governments for sustainability) and the Climate Bond Initiative – to make the first approach to cities’ environmental departments and, in some instances, their treasuries. Now that word is getting out, contact is being made in both directions. South Pole Group has been approached by several cities, according to Lutz.

Climate-KIC Support

The project was born out of work done by South Pole Group last year under the LoCaL umbrella to identify innovative ways to scale-up climate finance investment in cities. “It emerged clearly that green bonds are becoming more and more important for cities to finance sustainable infrastructure, but that cities in developing countries are not using it yet,” Lutz explains. “Thus the project idea was born, and South Pole Group suggested the idea to Climate-KIC.”

Most valuable about Climate-KIC’s involvement, outside the project funding itself, has been its role as a network facilitator, especially bringing partners together during the programme’s early stages. “What has been most interesting for us when setting up the project was certainly the partner network that Climate-KIC has,” she says. Partnering on the project are the Climate Policy Initiative and the Climate Bonds Initiative, both brought in as Climate-KIC partners by South Pole Group.

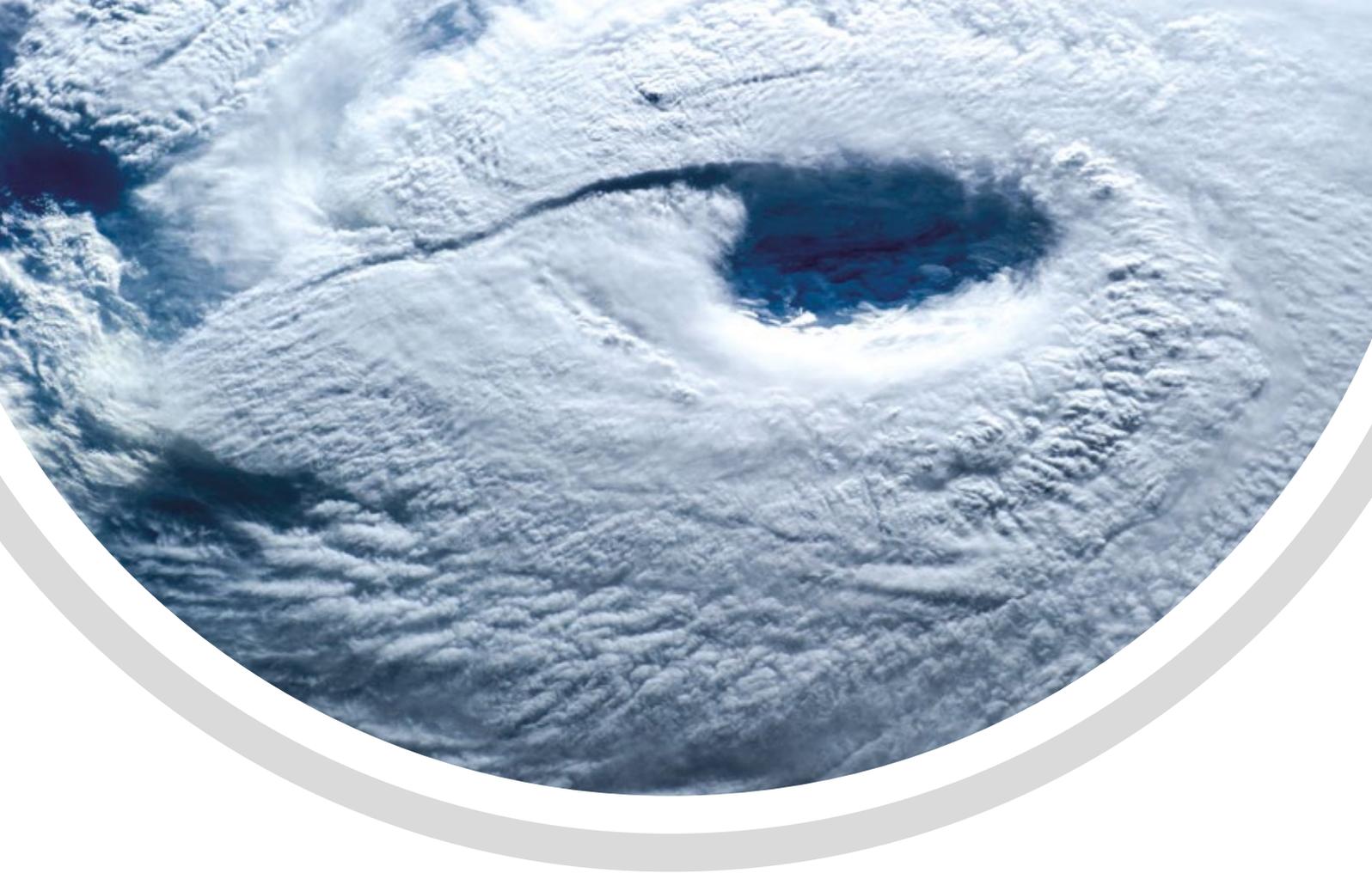


The first green bond created with guidance from Green Bonds for Cities will be issued by Mexico City next year, and will be the first green bond issuance by a Latin American city

“We are working very closely with ICLEI on this project, and that connection was also made initially through the Climate-KIC network,” says Lutz. “We also collaborate with two other Climate-KIC network partners – the Institute for Climate Economics (I4CE) on their city climate finance training and with CDP on our joint matchmaker service between cities and investors”. The connections to them have been brokered by Climate-KIC. They do some work on green bonds; we have shared our results with them, and they will be sharing their work with us, so that’s going to be very interesting.”

What’s Next?

The first green bond created with guidance from Green Bonds for Cities will be issued by Mexico City next year, and will be the first green bond issuance by a Latin American city – only the second-ever by a city in a developing economy. Mexico City plans to invest the proceeds in improvements to its metro and bus systems, as well as upgrading its water infrastructure and low-emission buildings. That is only the start: “We think this has the potential to support up to 40 projects up until 2020,” says Lutz.



Oasis

Summary

Oasis is a suite of tools and services that support catastrophe modelling and risk analytics to help understand and manage catastrophe and climate-related risk, and build resilience. At its core is an open-source loss modelling framework, with plug and play features, that allows users to feed in a range of hazard, exposure and vulnerability data, to calculate damage risk and the potential financial cost of events. The loss modelling framework, demonstrated across fire, flood and city risk sectors, currently has 43 insurance members and over 60 associate members. Oasis aims to make these vital adaptation tools and services accessible to a wider audience around the world.



By providing access to transparent and standardised modelling, Oasis aims to improve understanding and management of catastrophes and climate-related risks, facilitate greater investments in insurance and risk reduction, and make vital adaptation tools accessible to a wider audience.

Key Points

- Understanding climate impacts and the associated risk is critical in dealing with extreme events and disasters
- CAT modelling can support governments, cities and sectors in pricing the probability and severity of loss from climate-related risk
- Current modelling is limited by a lack of transparency, and protected data sources that prevent a diverse view of a given risk
- Oasis aims to improve understanding and management of climate-related risks, facilitate greater investments in insurance and risk reduction by providing access to transparent and standardised analytics
- Oasis is building a global community of users, data contributors and modellers to decrease the cost of models and widen the use of CAT modelling
- It is demonstrating its loss modelling framework in typhoon and storm surge, wild fires risk management and city flood risk and adaptation
- Oasis' 14 partners have received €3.9 million in funding from Climate-KIC since 2012
- Climate-KIC has been able to act as high risk investor in adaptation service development, but in doing so, is stimulating innovation and interest in this vital part of the green economy

Project Background and Drivers

Understanding the impacts of climate change and planning for the associated risks is critical in dealing with extreme events and natural disasters. The Intergovernmental Panel on Climate Change (IPCC) predicts a rise in sea-level, increased discharge from rivers, increased groundwater and river abstraction with greater evaporation rates fuelling drought and extreme heat. These climate impacts are likely to precipitate disasters from wildfires and flooding to intense pressure on agriculture supply chains and healthcare systems.

Catastrophe modelling, with its origins in property insurance and the science of natural hazards from earthquakes and floods to typhoons and fires, can support governments, cities, sectors and companies in assessing and pricing the probability and severity of loss from climate-related risk. The unforeseen and unanticipated losses from Hurricane Andrew in 1992 and Hurricane Katrina in 2005 both catalysed the shift towards more sophisticated and reliable CAT modelling methods, highlighting a need for cooperation across the insurance sector, to avoid insolvency that could be detrimental, not just to the sector but to disaster recovery itself.

Today, changes in European and US regulation are driving increased transparency, requiring insurers and reinsurers to demonstrate a comprehensive understanding of risk. But, the sector still suffers from lack of transparency on how risks are priced. Until recently, commercial models have prohibited insurers and reinsurers from fully understanding how risks are quantified or from questioning underlying assumptions of the model. A narrow pool of data sources prevents a comprehensive and diverse view of a given risk – reducing overall understanding and reducing the capabilities of pricing appropriate insurance products. Furthermore, in the current competitive market, proprietary data and technology, with high upfront costs, make it technically challenging and expensive for users to incorporate them in different analyses and to maintain multiple software platforms. There is a need for standardisation.



The Role of Oasis in Adaptation Services and Building Resilience

Oasis is a suite of tools and services that support catastrophe modelling and risk analytics to help manage climate-related risk, and build resilience. At its core is an open-source loss modelling framework, with plug and play features that allows users to feed in a range of the type of hazard, exposure and levels of vulnerability data, to calculate damage risk and the potential financial cost of events.

The framework provides a standard, meaning that users can access a fixed calculation tool, share assumptions, compare models and verify risk. The loss modelling framework has 43 insurance members and over 60 associate members across the insurance sector.

Expanding Sectorial use of Catastrophe and Climate-Related Risk Models

Oasis has been successfully demonstrating its loss modelling framework in three particular sectors – city risk adaptation, forest fires and honing in on the Danube area of Europe – and with considerable success. Future Danube is a multi-hazard, multi-risk model tailored to users in insurance, industry, finance and investment sectors and public authorities, providing trends and impacts. It has the potential to be used for mitigation and adaptation decision making.

City Climate Risk Adaptation creates damage, exposure and adaptation databases to assess the cost of action, and the cost of inaction of climate adaptation. Another demonstrator, Forest Fire Risk FP, is a geographical information systems (GIS) based fire risk mapping system to determine forestry risk level, fire impacts and risk reduction, supporting decisions on investment, forest carbon projects, logging and plantation and forest insurance.

Other potential offers in development include an Asian typhoon and storm surge modelling service and a health planning tool that links hospital data in UK and Germany to climate impacts. This tool can aid service and resource planning, particularly over a longer horizon.

“What we see is that there are different risks with different magnitudes in different parts of the world,” says Tracy Irvine, Director of Oasis Hub and Oasis+ Programme Manager. “These all need specialist tools, data and models.”

Expanding Oasis

This loss modelling framework is complemented by a soon-to-launch open data and model eMarketplace, which will link demand for risk analytics with suppliers of data, models, tools and services. This will host and provide a commercialisation environment for global data and tools in the risk analytics space from many providers of free and licensed data, including specialist modelling companies, research institutes and academia.

It will also provide an environment for partners who have developed data and models through the Oasis framework to commercialise their data and products. "Because of the multiple partners, the team works flexibly on innovating novel tools and services for potential customers, including city planners and industry. They can then release these models onto our eMarketplace for general use by other potential users if appropriate" says Irvine. "Because they will publish their modelling assumptions they can be used more transparently to assist city and regional planning and underwriting risk."

Oasis also incorporates education and capacity building, through its research, academic and expert partner base. This encompasses model training and instruction on how to develop catastrophe models to the Oasis LMF standard, and how to use CAT models for adaptation planning.

By providing access to transparent and standardised modelling, Oasis aims to improve understanding and management of catastrophes and climate-related risks, and facilitate greater investments in insurance and risk reduction, making these vital adaptation tools and services more accessible to a wider audience around the world. It aims to open up new markets in different sectors, encourage new entrants and data contributors, helping to decrease the cost of models.

Irvine adds: "We're using the loss modelling framework to democratise the world of risk assessment and data. It's an opportunity for research institutes, businesses and governments globally to innovate with their data and in doing so make it become more useful. By sharing the data, they help improve the reliability and comparability of the models. Equally we aim to democratise the ability of sectors beyond the insurance sector to understand their catastrophe and climate-related risk, providing standards that create a common language around risk."

Achievements

Oasis was endorsed in 2016 by The Global Innovation Lab For Climate Finance as one of four new financial instruments to catalyse billions of dollars for climate mitigation and adaptation in developing countries. Lab members include the Danish, Dutch, German, UK and US governments, Bank of America Merrill Lynch, Willis Group, development finance institutions, foundations, and other public and private investors.

Climate-KIC Support

Over the last four years, the Oasis consortium of research institutions and business partners have developed more than nine new climate, flood and forest fire catastrophe models for the market place and in doing so, have developed skills for the development of high quality CAT and climate models suitable for the market place. Partners include Imperial College London, ARIA Technologies, Technical University of Denmark, Delft University of Technology, Deltares, Potsdam Institute for Climate Impact Research, the Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences, ONFI International, Betterpoints, Pro Pannon, Municipality of Budapest and Budapest Sewage Works and Oasis Palm Tree.

Oasis has received €3.9 million in funding from Climate-KIC since 2012. The ability of Climate-KIC to act as a high risk investor in adaptation service development has helped stimulate interest in the role of CAT modelling in adaptation planning and risk management. Climate-KIC provided funding to Imperial College, which co-developed the Oasis LMF software kernel, and is now supporting the early development of the eMarketplace.





"We've come a long way since the original innovation project," says Irvine, "but Climate-KIC investment gave us the ability to act as a serious and established consortium able to attract both commercial and leverage funding for programmes. Climate-KIC was the one prepared to take the risk to get this off the ground. And all along the way, it has been a good critical friend. The CKIC collaboration formed as a result of their large network and we are now able to seriously innovate in in Europe and globally."

What's Next?

Oasis plans to become a leading European provider of software, tools, services and models that will enable risk assessment and adaptation planning by public, finance and other private sector organisations in a bid to create greater resilience against future catastrophes and climate impacts.

Oasis has already been embedded with a number of multi-laterals and international development banks. It has had requests from the Bangladeshi government and Philippines Reinsurance sector to work with them on risk reduction and CAT insurance development. Later this year, it will launch its first MOOC on modelling for Oasis, while its eMarketplace (Oasis Hub) will launch in January 2017, with a view to becoming financially sustainable within three years.

Climpax

Summary

Climpax Fund Ratings will be the first publicly available climate impact rating for investment funds, to allow individual investors to integrate climate change impacts into their fund selection and fund monitoring processes. The rating, currently in its beta version, will be available for more than 5000 equity funds representing over €2000 billion in assets, starting in 2017.

Key Points

- Investments tied to fossil fuels present significant climate risk
- The financial industry is getting behind the 2015 Paris Agreement, on grounds that it provides a much-needed regulatory catalyst for greater transparency in investing
- Fund management remains largely opaque and individuals have little means of assessing investments on environmental or ethical criteria
- Climpax Fund Ratings is the first tool in the retail investment space to enable retail investors to integrate this climate risk into fund selection and monitoring
- The rating, currently in its beta version, will be available for 5000-plus equity funds in 2017
- Climate-KIC recognised the potential of the consortium, its financial expertise and climate mission
- Climpax has benefitted from Climate-KIC's innovation process structure and network of practitioners and partners
- Climpax will officially launch in 2017 to promote transparency across thousands of European investment funds – a market with over €8 trillion of invested assets

Project Background and Drivers

The 2015 Paris Agreement sent a clear signal to the market that de-carbonising the global economy is essential to avoiding dangerous climate change. As a result, business models and investments tied to fossil fuels present significant climate risk and could be devalued, because of the physical, reputational and regulatory implications.

A growing movement within the financial sector is looking to achieve environmentally sounder investment goals through disclosure and transparency, scoping out levels of climate risk in funds and identifying alternatives. The Financial Stability Board Task Force on Climate Related Financial Disclosures, set up by the G20 in 2015, is currently investigating how to promote effective climate-related disclosures even further – to aid understanding of carbon-related assets, exposure to climate risk, and support informed investment, credit, and insurance underwriting decisions.

The European Fund and Asset Management Association, which promotes governance standards and professionalism in the fund industry, is one of a number of organisations to get behind the 2015 Paris Agreement, on grounds that it provides a much-needed regulatory catalyst for greater transparency in investing. But while there is increasing top-level discourse on steering investments towards greener goals by considering climate risks and by improving climate reporting, fund management remains largely opaque and individuals have little means of assessing investments on environmental criteria.





Climpax Fund Ratings is the first tool in the retail investment space to enable individual investors to integrate climate factors into fund selection and monitoring.

Project Detail

Particularly for retail investors, there is a dearth of tools and indexes to support such decision making. Retail investors represent around 24 percent of invested assets in Europe, worth over €2 trillion. By supporting these investors and promoting transparency across a market of over 25,000 EU mutual investment funds, emission reductions could amount to 36 million tons of CO₂ per year.

Climpax Fund Ratings is the first tool in the retail investment space to enable individual investors to integrate climate factors into fund selection and monitoring. The rating measures the climate impact of a fund and will allow private investors, for the first time, to compare all funds within certain groups, not just green funds, according to their climate impact.

The new fund rating's publicly available methodology will enable fund managers to measure their portfolio's climate impact and to compare it to their peers, while providing them with the necessary information of how to improve it. The rating will enable fund selectors to choose climate friendly alternatives, while companies can better communicate with fund managers. The design of the rating, and where it will be shown, are still in development, but behavioural change research favours starring across a five-level logic over other ratings.

"We know that retail investors are looking for climate friendly investments but there's a bottle neck in available products or services. Although interest in these products is growing, sustainable and climate friendly investment funds remain a niche product, and a publicly available climate rating for investment funds is currently not available. Financial Intermediaries are reluctant to address climate change or sustainability in general because it is a very complex topic and they'd rather stick to what's known", says Nico Fettes, Project Lead Consumer Fund Ratings at CDP, one of the organizations leading the project.

Fund Assessment

Climpax assesses funds on three different levels reflecting the importance of climate change integration along the entire investment process value chain. At the holdings level it assigns climate scores to companies based on a company's current emissions, its climate management performance and sector specific criteria. At the asset manager and fund strategy level, it evaluates how active and consistent the organisation and fund are working to fight climate change.

The rating, currently in its beta version, incorporates CDP's unique Climate Change scores that combine information on a company's qualitative management of climate change risks and opportunities with measured and reported figures. CDP holds the largest collection globally of primary climate change, water and forest risk commodities information. In 2015, more than 5,500 companies worldwide, and 1,800 in Europe, disclosed environmental information through CDP. For non-disclosing companies, this data is enhanced by South Pole Groups estimates of emissions and quality.

"For the new fund rating, we additionally use data on carbon reserves – how much proven reserves a company has listed. We look at utilities and their share of energy production sourced from coal, and we also have a closer look at the automotive sector," says Fettes.

He adds: "Getting the underlying fund data can be a challenge. You have to buy it, and make sure it's in a usable format. But the tricky part is to actually combine this fund holdings data with their corresponding climate information, so as to produce consistent results."





Developing a Business Model

Although the Climpax business model is still under development, with capturing fees from asset managers for licensing in discussion, individual retail investors will most likely not have to pay for the rating.

One challenge for the business will be marketing to an audience relatively new to the topic of climate change risks in the financial sector, educating them as to the purpose and the value of taking climate change into account when making investment decisions, according to Fettes. Finding the right channels can be daunting due to an extremely complex value chain.

“There are several decision makers within banks that we will have to target in different ways. But, very important: in the end we will also have to convince the bank advisors that our rating is a good thing so that he or she will actively speak about it. For banks, it’s about opening up the business case that it definitely pays off to offer green products and services,” says Fettes.

Partners

Climpax is the brainchild of Susan Dreyer, Director DACH Region at CDP Europe, and Max Horster, Partner Financial Industry from at South Pole Group. Both had experience with portfolio screenings of stocks, bonds and funds for investors, and recognised the power of the yet missing transparency in the investment fund space.

CDP Europe, together with South Pole Group and research partners at the University of Reading and University of Hamburg, embarked on a three-year journey starting in 2015 to increase mutual fund transparency as a method for addressing climate change. CDP Europe is one of the lead partners of Climpax. It contributes data from CDP’s core activity of running the largest database of self-reported corporate climate change, forest and water data globally. The Zurich-based South Pole Group is co-leading the project, and involved in all activities, with a focus on IT development. It contributes quantitative GHG emissions data (data estimates for CDP non-responders) and financial company data from proprietary and external databases.

The University of Hamburg and the University of Reading have supported the project through academic research. Scientists at the University of Hamburg conducted a conjoint survey aimed at defining which rating design has the most influence on consumer behaviour, while the University of Reading undertook scientific research on carbon data science, and provided statistical support.



Climate-KIC Support

Climate-KIC recognised the potential of the start-up, on the strength of the consortium, its financial expertise and climate mission. Through Climate-KIC, Climpax has benefitted from reaching new audiences in the policy arena, as well as workshops and masterclasses to help develop the business model.

“Climate-KIC has helped us to reach a wider audience. For instance, Climate-KIC initiated a joint event at COP21, and there it was recommended that we should apply at UNFCCC for lighthouse activity. Getting professional advice outside of the consortium on how to do things – developing apps, IP control and assigning responsibilities within the team has helped us think about what role each individual has. This sharpens the focus on how you should evolve and how the business will work,” says Fettes.

What's Next?

Climpax will officially be launched in 2017, following a year-long beta phase. The rating will be available on a retail fund platform and is currently on track to make this deadline. The next focus will be communications and marketing, reaching retail investors wherever funds are sold.

“We have to be present everywhere retail investors are. We want to find banks and fund platforms to print the rating and use it as part of their core funds offering. The other main audience is those managing funds. They can use the rating for marketing purposes or to get a better understanding of their portfolio from a climate change perspective. Part of the strategy is that by rating them, all funds are visible and can be compared, mainstream as well as specialised. This will park the fund managers’ attention. For retail investors, you might have to appeal to them in a much more emotional way,” says Fettes.

Carbon Delta

Summary

Carbon Delta is developing a climate change risk assessment tool that helps investors calculate the amount of their portfolio that is at risk due to climate change. By identifying the extent to which a company's value may be affected by climate change, investors can steer portfolios towards low carbon technologies and help companies to adapt to a changing climate.

Asset managers can use Carbon Delta's research to assess the comprehensive range of climate risks in their portfolios, pinpointing the most climate risky positions and redirecting investment to alternatives. Companies can also use Carbon Delta analysis to benchmark their efforts and verify the strength of their climate strategy. The assessment models that have been developed can be integrated alongside internal company data, allowing for more tailored scenario analysis.

Key Points

- The 2015 COP21 Paris Agreement sent a clear signal to the market that de-carbonising the global economy starts now
- Carbon Delta's analysis and models include the analysis of the impact of climate-related regulations and greenhouse gas targets on a portfolio, as well as low carbon technology change.
- The Paris Agreement and a FSB Task Force on climate related financial disclosure underline an emerging legal and regulatory basis for the Carbon Delta business
- Climate-KIC has helped Carbon Delta identify its niche and develop a solid business model
- Carbon Delta's first client is a respected reinsurance firm based in Switzerland

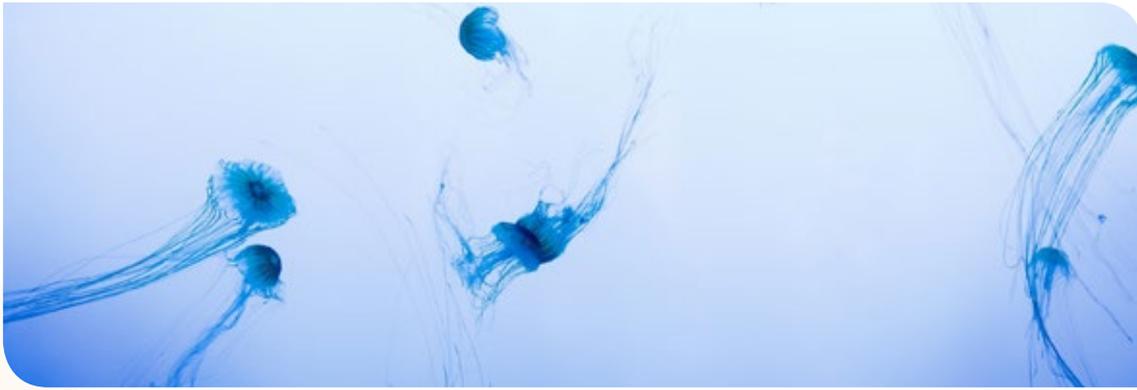
Project Background and Drivers

The 2015 COP21 Paris Agreement sent a clear signal to the market that de-carbonising the global economy starts now. As agreed, countries will implement independent low carbon pathways from 2020 to 2030, and this is only the beginning.

The Financial Stability Board Task Force on Climate Related Financial Disclosures, set up by the G20 in 2015, is currently investigating how to promote more effective climate-related disclosures – to aid understanding of carbon-related assets, exposure to climate risk, and support informed investment, credit, and insurance underwriting decisions. Mark Carney, the governor of the Bank of England, has warned that climate change will bring about unprecedented financial challenges, unless there is greater transparency about current and future carbon emissions. The exposure of assets and investments to climate risk needs to be fully understood to be able to respond to these challenges.

The financial sector increasingly recognises the risks and opportunities of a changing climate, and there has been a corresponding increase in demand for relevant information to support decision-making. However, inconsistencies in disclosure practices, a lack of context for information, and incomparable reporting are holding back the inclusion of climate-related risks in tradition financial reporting regimes.





Project Detail

Carbon Delta is an environmental fintech that produces research focused on identifying the climate change resilience of publicly traded companies. The company's models assess how much a firm's value is possibly affected by climate change. Carbon Delta calculates the Climate Value at Risk (VaR) for thousands of companies.

Carbon Delta aims to provide asset managers with the most comprehensive understanding of climate risk to date. Carbon Delta's analysis includes the impact of climate-related regulations on companies, as well as the repercussions of the deployment of clean energy technologies, and the vulnerability of company locations exposed to extreme weather.

The regulatory momentum signalled by the Paris Agreement has been a catalyst for start-ups like Carbon Delta, according to Oliver Marchand, CEO and co-founder of Carbon Delta. "The Paris Agreement was a turning point in the disclosure of regulatory changes to be implemented in the near future. Never before has such a large number of countries clearly committed to take action against climate change. These commitments have reverberated throughout the financial community, meaning that no investor can henceforth take their eye off the issue," he says.

The Carbon Delta model is based on machine learning and integrates a wide spectrum of data sources including production and sales figures, company reported information, supply chain relationships, and internet data.

Asset managers can use Carbon Delta data to assess climate risks in a comprehensive way within their portfolios, pinpointing the most climate risky positions, manage the assets better or redirect investments into lower risk alternatives. Companies can also use Carbon Delta analysis to benchmark their efforts and verify the strength of their climate strategy. The assessment models that have been developed can be integrated alongside internal company data, allowing for more tailored scenario analysis.

Climate-KIC Support

Climate-KIC selected Carbon Delta to take part in the first phase of its Accelerator programme in 2015, on the strength of the proposition around climate risk and Marchand's pitch. Renato Galli, Accelerator manager, Climate-KIC says: "There's a lot of uncertainty and risk but the confidence with which Oliver pitched and believes in the business, that was quite unique."

Going through the first stage of development has helped Carbon Delta identify its niche and develop a solid business model. Climate-KIC also provided coaching with leading climate innovation experts, resources, tools and grant funding. Marchand said: "You can't do it all by yourself. Initially, I thought I could implement the business plan without much support. I had a clear vision and didn't want to waste time looking for investors. I thought I knew what to do – to prototype, sell and then scale, but I really underestimated things. It takes the right team to get a company off the ground and assembling a skilled team takes time. Furthermore, building relationships with customers takes quite some time, it is, in fact, an endless series of engagements. I've learned that running a startup is a bit like running a marathon, only without knowing the distance."

Unlike many start-ups that approach market entry through rapid value creation and identifying customers willing to pay, Carbon Delta has adopted an approach akin to a blue ocean strategy, where the aim is to create new, uncontested market space that makes competitors irrelevant.

"We learned that this is something that if you execute correctly, it's very smart, you can enter a market where it is potentially hard for competition to keep up. This is good for branding, and you can dictate the pricing, but it's true that there is risk," says Marchand. "The most important aspect for us is to tackle the climate problem at the root, and investors are really asking for good climate risk analysis."

What's Next?

Part of Carbon Delta's progress so far can be attributed to Marchand's active participation in the Accelerator programme and its masterclasses, says Galli. Climate-KIC masterclasses include training on business fundamentals from pitching to investors to recruitment.

Marchand adds: "The last masterclass was on start-up financing. We weren't specifically looking for an external investor, but we decided to do it anyway. We realised this one class saved us weeks of work and has shaped some of the strategic thinking of Carbon Delta. The quality of Climate-KIC's coaching is very high. They have been our most valuable mentors."

A major turning point in the development of Carbon Delta has been the establishment of a management team. David Lunsford, Head of Development, became a co-founder in early 2016 to help build the company, focusing on establishing the climate risk models and engaging with potential clients. Elke Schaper also became a co-founder in mid-2016, as Head of Software Development, who is skilled in computer modelling and working with big data techniques. Carbon Delta is now working with its first client, a respected Swiss reinsurance company. Over the coming year, it will focus on serving and meeting client's needs.



Asset managers can use Carbon Delta data to assess climate risks in a comprehensive way within their portfolios, pinpointing the most climate risky positions, manage the assets better or redirect investments into lower risk alternatives

Rezatec

Summary

Rezatec innovates using Earth Observation (EO) data to produce high value geospatial analytics that substantially reduce the cost of quantifying, monitoring and verifying land use change and environmental risk. Rezatec's unique strength lies in its ability to aggregate large amounts of diverse data from satellite, airborne and ground instruments. This provides critical decision support for science users, policymakers, natural asset managers and commercial supply chains. It has applications across agri-business, conservation, water management, forestry and policy evaluation – mapping and monitoring conservation areas, counting carbon stocks, detecting illegal logging, pinpointing pollution sources, and identifying tree species and mensuration capabilities within forests.

Key Points

- Rapid changes in land use accounts for 10 percent of net global carbon emissions
- Investors, businesses and local authorities need continuous, accurate data to make critical decisions on using, converting, restoring or treating land and natural resources
- They need evidence to appropriately respond to shocks, perform due diligence and manage risk
- Rezatec's approach is a highly detailed, cost-effective and accessible alternative to conventional natural asset monitoring methods
- Climate-KIC has steered the company towards relevant growth opportunities and previously unconsidered commercial applications in the FMCG sector
- Rezatec is working with the UK's Department for Environment, Food and Rural Affairs to provide a greater level of data on UK tree species distribution and to predict forest pathogens

Project Background and Drivers

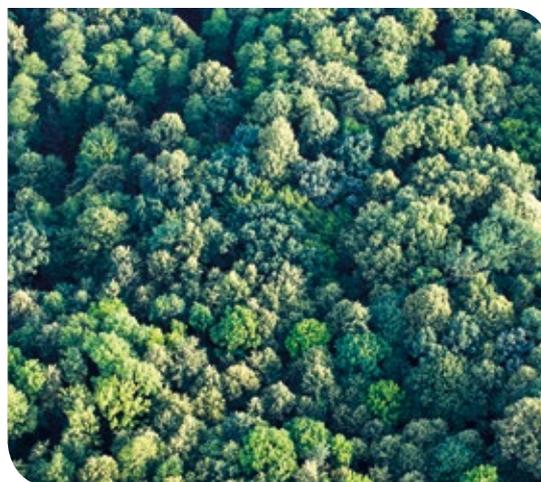
Rapid changes in the way land is used, such as the conversion of primary forest to commodity production, is a major contributor to the proliferation of greenhouse gases. It accounts for 10 percent of net global carbon emissions. This compounds climate change for two reasons. First, deforestation and forest degradation release vast quantities of carbon dioxide that would otherwise be stored. Second, forests prevent high levels of evaporation from the canopy and help regulate the water cycle. For these reasons, conservation of forests is crucial to both mitigating carbon emissions and helping populations cope with the impacts of climate change.

However, developing countries in tropical regions often wish to convert their primary forests to commodity production as part of development of wood, biomass, palm oil and soy markets. This puts the right to develop in competition with forest conservation for mitigation and adaptation. Striking a balance between these economic aims and environmental goals means sustainably managing land conversion and natural assets.

Climate change is also impacting crop yields, fresh water availability, fuelling extreme weather and a rise in sea level. There is a need for accurate and highly granular information with which resource managers, agronomists, food producers and FMCGs can make critical decisions to use, convert, restore or treat resources. Continuous data that can detect changes in the vital signs of natural assets over longer periods is key to these adaptation strategies.

Conventional data tends to be sporadic, incomplete and partial, based on extrapolation from small samples because traditional monitoring methods are labour intensive and limited by human capability or inaccessible terrain. However, the pace of change in the way we observe the planet, and our ability to apply "big data" insights through earth observation and remote sensing is transforming how we understand, evaluate and interact with our environment.

Within this growing industry, environmental observation technology developers provide data, while intermediaries convert it, visualising it and making it accessible. Part of the challenge is to bring together the array of data, demonstrate its application to a variety of sectors, and make it accessible and affordable.



Project Detail

Rezatec innovates using Earth Observation (EO) data to produce high value geospatial analytics that substantially reduce the cost of quantifying, monitoring and verifying land use change and environmental risk. Rezatec's unique strength lies in its ability to aggregate large amounts of diverse data from satellite, airborne and ground instruments. This provides critical decision support for science users, policymakers, natural asset managers and commercial supply chains.

It has applications across agri-business, conservation, water management, forestry and policy evaluation – mapping and monitoring conservation areas, counting carbon stocks, detecting illegal logging, pinpointing pollution sources, and identifying tree species and mensuration (count, height, volume) capabilities within forests. It models and adjusts crop yields to identify field crops, and effectively plan and procure FMCG supply chains. Forecasting crop yields can help alleviate adverse market reactions due to potential food shortages, and ultimately secure food production. Investors, too, can use this information to appraise commodity markets and funds, perform due diligence or valuations to obtain transaction prices.

"It's a much more holistic picture. You can see when things are changing, and this can help to drive policy and legislation. Rather than hiding behind incomplete and partial data – it's possible to measure the drivers and impact of legislation," says Tim Vallings, Rezatec operations director. Rezatec has also advised clients on the reputational risks stemming from previously unknown history of land conversion. By providing data over a 20-year period, Rezatec was able to advise a large pharmaceutical company that its plantation had displaced primary forest, and was at risk of being associated with deforestation.

"The company wanted to ensure that farmers were respecting the boundaries of its palm oil plantations in Indonesia. We took a snapshot of the land and looked back to what it was about 20 years before. When we did, we found that it had been pristine forest. The plantation was completely legal but the client was unaware of the land use change. By being informed, they were able to take some big ethical decisions about the possibility of being associated with deforestation," says Vallings.

Climate-KIC Support

Climate-KIC has been instrumental in Rezatec's development over the last four years, providing vital funding, office space, business mentoring and steering the nascent company towards relevant growth opportunities. A five-figure grant, awarded in stages on the achievement of business goals enabled Rezatec to invest in the development of its geospatial techniques, bringing forward their launch date to May 2013.

"The funding we got from Climate-KIC wasn't match-funded, and this was really critical for us. It meant we were able to launch before we had scheduled. We were able to invest in much-needed data and tech skills rather than operational assets. Having office space in London was a big geographic advantage as it made it a lot easier to meet clients in central London. This allowed us to get out into the real world," says Vallings.

Climate-KIC also provided guidance to Rezatec by highlighting opportunities the company might never have otherwise considered. "Although we had initially came up with a business proposal based on data for carbon management, we were wondering how we could





Climate-KIC has been instrumental in Rezatec's development, providing vital funding, office space, business mentoring and steering the nascent company towards relevant growth and expansion opportunities

take our data proposal forward into other areas. We got some mentoring to try different business model scenarios. This was a helpful process that took us into water, agriculture and other areas," says Vallings.

Being awarded Climate-KIC funding also helped open the door to other funding and commercial opportunities. Rezatec was invited to become a partner having graduated from the Climate-KIC Accelerator programme in February 2014. "The Climate-KIC community prioritises its partners, so if a larger company has output requirements, a call goes out to the network. This is really helpful," says Vallings. "Industry can be averse to newcomers. By going in with established partners, you can get around that."

What's Next?

From its beginnings in 2012, Rezatec has grown to 20-plus employees. The ambition now is to become more established, growing not just within the earth observation industry, but so that other industries such as retail and banking recognise the relevance of its application to their sectors and supply chains.

"For us, the challenge is to stay ahead. We have to constantly reinvest in skills and capabilities to provide a suite of solutions that are cutting edge and innovative. What you don't want is to find that by the time your clients and potential end users are ready to begin buying your services, your solution has been surpassed," says Vallings.

Looking ahead, Rezatec is focused on further developing its credentials in the water sector and will build on a recent forestry monitoring programme with the UK's Forestry Commission and Department for Environment, Food and Rural Affairs. The work, carried out through 2016, has collected much-needed data on tree species distribution and abundance. The data will be used to predict and manage forest pathogens.



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Typhoon Ketsana (Ondoy) in the Philippines. A young boy drags some possessions through the flooded streets of Metro Manila, taken 28 September 2009. Image credit: Asian Development Bank
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Great Lakes and Central US Viewed From the International Space Station, Expedition 42, taken on 7 December 2014. Image Credit: NASA/Barry Wilmore.
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The Carbon Delta team. Image courtesy of Carbon Delta.
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Satellite data analytics can provide an innovative and cost-effective approach to tree species differentiation. Forest metrics (tree count, tree height and tree volume) can be delivered using Rezatec's geospatial analytics. Images courtesy of Rezatec.

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About Climate-KIC

Climate-KIC is the EU's largest public private partnership addressing climate change through innovation to build a zero carbon economy. We address climate change across four priority themes: urban areas, land use, production systems, climate metrics and finance. Education is at the heart of these themes to inspire and empower the next generation of climate leaders. We run programmes for students, start-ups and innovators across Europe via centres in major cities, convening a community of the best people and organisations. Our approach starts with improving the way people live in cities. Our focus on industry creates the products required for a better living environment, and we look to optimise land use to produce the food people need. Climate-KIC is supported by the European Institute of Innovation and Technology (EIT), a body of the European Union.

www.climate-kic.org



Decision Metrics and Finance

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