OakNorth
CREDIT INTELLIGENCE

ON Climate

A cloud-based
SaaS solution

Facing the regulatory challenge

The SEC throws down the gauntlet

The U.S. Securities and Exchange Commission (SEC) has proposed rule amendments that would require a domestic or foreign registrant to include climate-related information in its registration statements and periodic reports, such as on Form 10-K.

This includes:

- Climate-related risks and their actual or likely material impacts on the registrant's business, strategy, and outlook.
- The registrant's governance of climate-related risks and relevant risk management processes.
- The registrant's greenhouse gas (GHG) emissions, which, for accelerated and large accelerated filers and with respect to certain emissions, would be subject to assurance.
- Certain climate-related financial statement metrics and related disclosures in a note to its audited financial statements.
- Information about climate-related targets and goals, and transition plan, if any.

Read the SEC's detailed statement **here**.

Banks are facing both investor and regulatory pressures to implement new, wide-reaching processes and systems to support a robust climate change assessment framework. These changes stretch across the entire loan book, from scenario analysis risk management to lending opportunities.

As Blackrock CEO, Larry Fink, wrote in his 2022 letter to shareholders: "The tectonic shift towards sustainable investing is still accelerating. Whether it is capital being deployed into new ventures focused on energy innovation, or capital transferring from traditional indexes into more customized portfolios and products, we will see more money in motion."

This sentiment is being echoed by the regulators issuing principles for climate-related financial risk management. While these are currently limited to large banks, examiners have cautioned midsize and community banks to "use the time wisely."

So, what does this mean for your bank? What processes do you need to put in place? What data points do you need to consider and how can you re-purpose the data you already have to analyze and mitigate climate risk, and identify new lending opportunities? And as Larry Fink put it, will you lead or be led when it comes to climate?

This Guide describes the challenges your bank is facing — particularly the investor and regulatory imperatives — and explains how the ON Climate solution can help you address these issues head on, using data driven insight to minimize risk and maximize opportunity.

Current (and proposed) regulation around climate

ON Climate gives you the insights and tools you need to comply with the latest regulations.

DEC. 2021

The OCC

- On December 16th, 2021, the OCC published draft principles for climate-related financial risk management for banks with over $100 billion in total assets.
- It invited feedback from the industry on these principles and is currently consulting on this feedback to inform more formal guidance.

MARCH 2022

The SEC

- On March 21st, 2022, the SEC announced proposed rule changes on climate-related disclosures to address investor concerns around the lack of consistency, comparability, and reliability of climate-related disclosures.

MARCH 2022

The FDIC

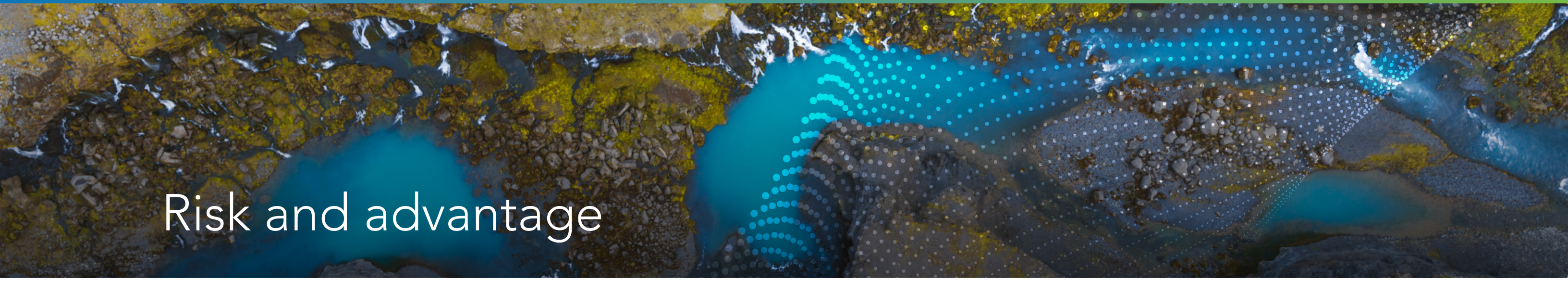
- On March 30th, 2022, the FDIC published draft principles for managing exposures to climate-related financial risks.
- The Climate Principles are generally targeted at banks with over $100 billion in total assets that are regulated by the FDIC.

APRIL 2022

California Air Resources Board

And numerous state regulators are proposing plans which will change the infrastructure of entire cities.

- Earlier this year, California Air Resources Board has proposed plans requiring 35% of new passenger vehicle sales to be powered by batteries or hydrogen by 2026, and 100% of sales to be net-zero emissions by 2035.
- Similarly, in September last year, New York State Governor Kathy Hochul, signed into law a bill that all new passenger vehicles and light trucks sold in New York will have to be “zero-emission” models by 2035.
- In December, the New York City Council voted to pass legislation banning the use of natural gas in most new buildings.



Risk and advantage

> “Banks with strong climate risk management systems and capabilities will not only be better prepared to withstand climate change events but will also have a better line of sight into the many business opportunities that will arise.”
>
> **MICHAEL HSU, ACTING COMPTROLLER OF THE CURRENCY AT THE OCC**

Last year, there was an average of two extreme weather events across the US every month – each causing $1B or more in damage. The next billion-dollar climate catastrophe is, unfortunately, just around the corner. The direct impact of climate change and the policies put in place to address it will have long-term consequences for your commercial lending portfolio. It could wipe out loan books and reshape huge sections of the economy.

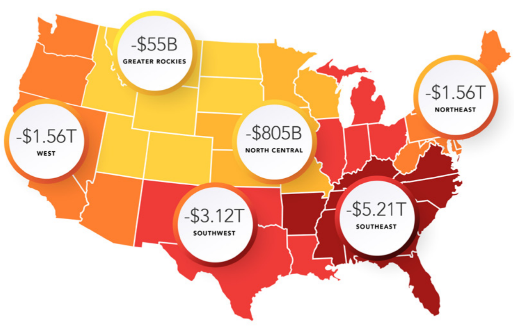
Without doubt, it is one of the most wide-reaching threats that will ultimately affect every borrower in your bank's loan book. The challenge is that most banks simply don't have the tools needed to measure the impact, or even a clear view of where to get started. The methods and operating practices of the past are no longer fit for purpose as climate impact requires a forward-looking analysis. You need to reshape the way you assess risk, analyze your loan book, and identify growth opportunities.

But change on this scale is very challenging - it's a new era of risk assessment, one that requires new tools and access to the right data to make informed decisions.

The Climate Cost

$900B ANNUALLY — DECREASE IN GDP OVER NEXT 50 YEARS

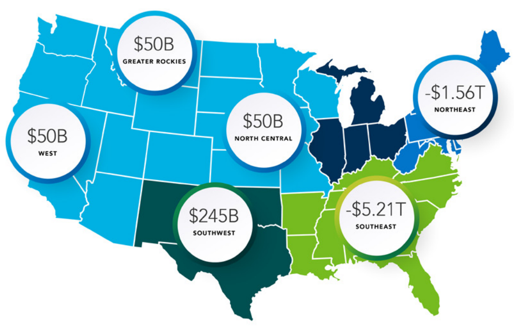
$14.5T BY 2070 — NPV LOSS IN GDP



The Climate Opportunity

$885B ANNUALLY — INCREASE IN GDP OVER NEXT 50 YEARS

$3.1T BY 2070 — INCREASE IN GDP IN PRESENT VALUE



The cost of inaction is high, but the opportunity for action is immense. While you may be exposed to climate risk and industries in structural decline, you don't have to miss out on the innovative industries or opportunities within your loan book.

Source: The Turning Point: A New Economic Climate in the United States, Deloitte Jan 2022

ON Climate

Building a cloud-based climate SaaS solution

ON Climate is a SaaS application that was developed by our team of credit scientists and software engineers, in close collaboration with 10 US banks and 27 climate experts. ON Climate enables your teams to make faster and smarter decisions on which borrowers or sub-sectors in their portfolio are most likely to suffer or benefit from climate change, and as a result, mitigate risk and identify origination opportunities to lend more.

Risk & monitoring teams

Run climate impact scenarios, identify impacted portfolio and climate impact metrics to track, and prepare for regulatory discussions.

Decrease risk exposure and effects in sectors with inherently high climate risks.

C-Suite

Understand how climate transition risk might impact your commercial lending portfolio, sector level risk trends, mitigants, and policy adoption.

See an overview of your climate risk and distributed exposure across top sectors and borrowers.

ESG and sustainability teams

Manage GHG reporting by calculating, and tracking, financed GHG (greenhouse gas) emissions.

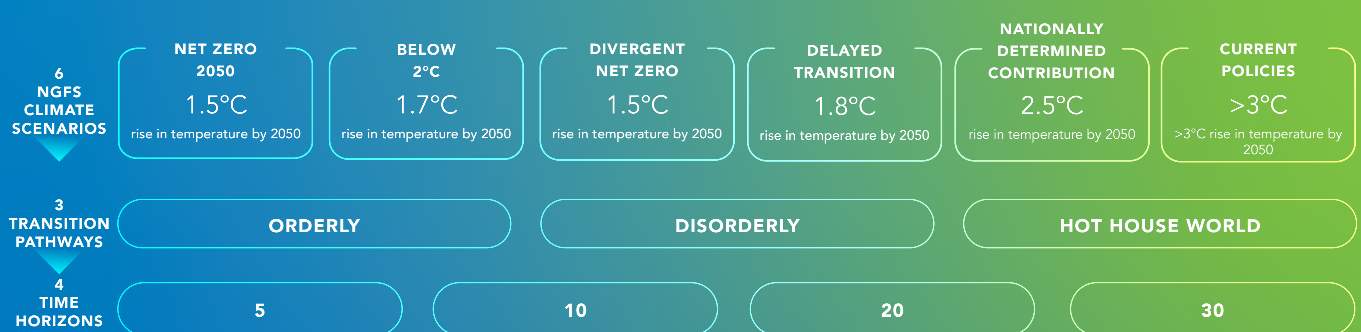
Climate scenarios

ON Climate applies six scenarios that are aligned with the Network for Greening the Financial System's (NGFS) climate scenarios, and the Paris Accord, and the May'21 US Executive Order. These scenarios are evaluated through the lens of three transition pathways:

AN ORDERLY TRANSITION (i.e., where policy action starts immediately/in the near term)

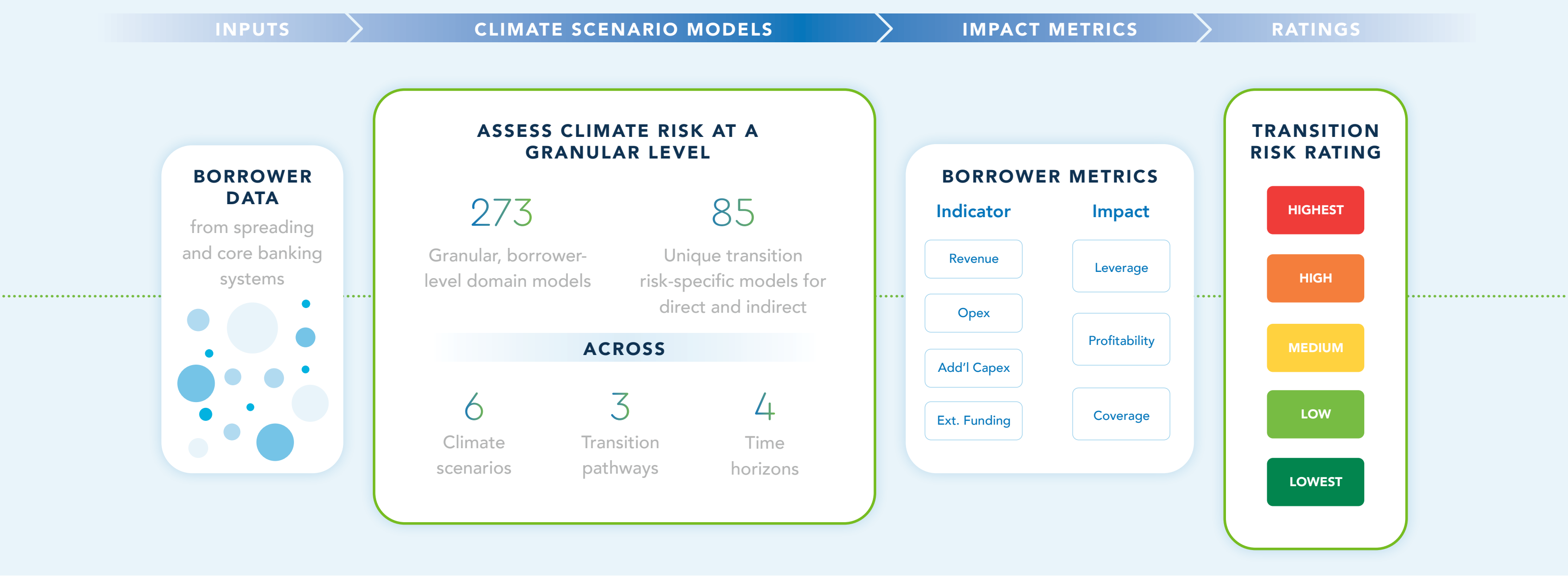
DISORDERLY TRANSITION (i.e., where policy actions are delayed until 2030)

HOT HOUSE WORLD (i.e., where there are no further policy actions). And across four-time horizons: 5, 10, 20, and 30 years



ON Climate applies the scenarios to our repository of 273 sub-sector forecasts, covering 963 6-digit NAICS codes, to assess carbon emission impact from policy actions and supply chain disruption at a very granular sub-sector level.

In addition, ON Climate provides forecast financials and credit metrics at the borrower level – under each of the climate scenarios and time horizons. These outputs can be directly inputted into to banks' existing risk rating models to drive a climate-adjusted risk rating.



Borrower data

Banks can easily run robust and dynamic analysis to determine climate impact and emissions using existing borrower datasets. ON Climate overlays six climate scenarios on 14+ borrower data points, that can be readily extracted from your spreading and core banking systems, to provide a forward-looking climate risk score from low priority (least vulnerable) to high (most vulnerable).

Climate risk

ON Climate covers transition risk assessment at the granular sub-sector level. In the future, the solution will be extended to encompass the physical risks of climate change as well.

Transition risk

To arrive at a risk score, the ON Climate solution identifies the borrower level impact metrics that influence the revenue (driven by shift in demand or disrupted operations) and costs (supply-chain driven operating costs, capital expenditure for clean or remediating technology) along with policy driven impact for borrowers and uses those to project the future financial health and potential risks their business may face.

Physical risk

ON Climate's physical risk assessment will evaluate how extreme weather events such as floods, drought, and hurricanes can lead to business disruption and damage to property. It will also address how longterm changes in climatic patterns, such as rising temperatures, change in precipitation, increasing sea levels, desertification, etc. can affect labor, capital, and agricultural productivity.

Climate risk score

ON Climate provides you with an overview of your climate risk and distributed exposure across top sectors and borrowers for your commercial portfolio.

Filtered lists of specific borrowers. For example those with:

- Lower projected climate risk, in sectors that are rated to have inherently high climate risk.
- Borrowers with high climate risk that you might be able to coach to help avoid future risk.

Financed carbon emissions reporting

ON Climate helps banks calculate and report on Scope 3 financed emissions across their commercial loan portfolio. The solution follows the Partnership for Carbon Accounting Financials (PCAF) guidelines when calculating GHG emissions and applies the PCAF's Score 3 and Score 4 methodology. This allows banks to view the total financed emissions in loan book by portfolio and individual borrower level.

Financed carbon emissions

ON Climate provides you with the total financed emissions for your commercial loan portfolio split by:

- Total scope 3 financed emissions
- Financed emissions (Scope 1 and Scope 2) by sector
- Financed emissions (Scope 1 and Scope 2) for each borrower

Taking a holistic view of financed emissions—together with carbon pathways under the various NGFS scenarios—enables banks to evaluate and set overall emission goals (e.g. net zero by 2050), and understand the levers available to manage a transition of their commercial portfolio.

FIFTH THIRD BANK

Quantifying climate risk at Fifth Third Bank

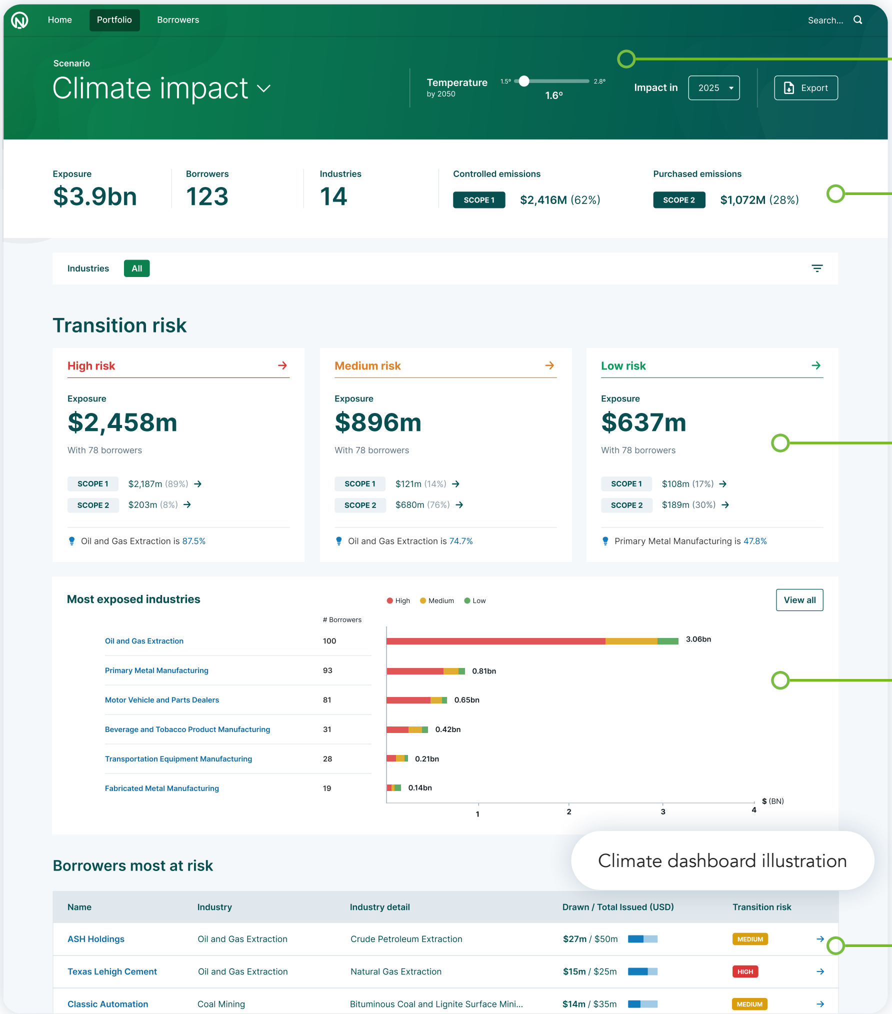
Fifth Third is the 13th largest bank in the US, with over $206B in assets, of which roughly 25% is commercial loans.

OakNorth is excited to partner with Fifth Third to help deliver climate scenario analysis, identify areas of climate risk and opportunity, and guide future conversations with borrowers.

> "[Fifth Third] is actively integrating climate risk into our Risk Management Framework and planning for scenarios that reflect climate change.
>
> This will, in turn, allow us to establish conversation points to guide our lines of business in discussions with our customers, and enable the Bank to develop a net-zero aligned strategy not only to manage risk but also to continue transparency around the Bank's emissions across our portfolios"

GREG D. CARMICHAEL
CHAIRMAN & CEO AT FIFTH THIRD BANK

ON Climate



Climate dashboard illustration

Select from six NGFS climate scenarios across four time horizons to determine and report on the impact transition risk could have on your commercial loan book over time.

View the current emissions across your loan book.

See how your loan book is impacted by climate risk, and understand what portion of your total commercial portfolio is covered by climate transition risk analysis.

Filter your loan book by most exposed sectors to see how exposed you are to transition risk in each sector.

Identify the borrowers most exposed to climate transition risk so you can flag them to portfolio teams.

Apply climate insights across your full credit lifecycle

ON Climate provides you with insights on climate risk in your commercial portfolio that can inform your approach to every stage of the credit lifecycle: from origination and ongoing monitoring, to conducting portfolio level scenario analysis, responding to investor, board, regulatory requests, and setting credit strategy.

Portfolio Management

Assess climate transition risk for direct and indirect impact sectors through financed emissions and credit risk

Report on financed emissions and credit risk

Determine carbon price impact

Monitoring

MONITOR

Use climate risk analysis to: Identify and take action on sectors and borrowers with greatest risk today

Adjust approach to portfolios that will face increased risk in the future

REVIEW

Run climate reviews on the sectors and borrowers that require immediate attention

Origination

FUTURE

Avoid lending into sectors projected to have high climate risk without a transition plan

Discover sectors and borrowers in need of capital to fund decarbonization

Implementing ON Climate

Any climate impact solution will require an investment, so the question is why opt for a third-party solution when you could potentially build it yourself? Also, it is essential that the solution uses agreed, recognized accounting standards and a reliable, extensive, and broad data set to run scenario modeling.

Quantifying ON Climate ROI

Many years of research, product development, and billions of data points have gone into building ON Climate. OakNorth has one of the largest commercial lending data sets in the US, representing $420B of lending data across C&I such as automotive; agriculture, energy, industrial, manufacturing, building, and construction. Our modeling complies with the standards set by both NGFS and PCAF, and we use the NAICS for sector analysis. ON forward-looking scenarios are constantly updated with the most recently available data, including high frequency third party data sets, to ensure that scenarios are providing institutions with the most accurate view of climate impact, at any point in time, across all industries in their loan portfolios.

With OakNorth you can mitigate climate risk by quickly identifying sectors that have greatest climate risk and create effective transition strategies – averting future losses. Taking a conservative approach, we can generate millions of dollars of annual benefit to your bank through reduced loan loss provisions and, in the near future, through the identification of additional lending opportunities with new and existing borrowers.

> "Having a second look with OakNorth's software and process has been invaluable to us – both internally as we communicate with our board, and externally as we communicate with our investors and the regulators."
>
> **MIKE LYONS**
> **EXECUTIVE VICE PRESIDENT AND HEAD OF CORPORATE & INSTITUTIONAL BANKING AT PNC**

$420B

OakNorth has one of the largest commercial lending data sets, representing $420B of lending data across a multitude of industries

Quick ON-boarding and next steps

You could implement ON Climate in under three weeks, moving rapidly from initial briefing through exploratory workshops, an executive readout, and then go live. To discover what it could deliver for your bank, we offer a rapid onboarding that is completely customizable to your needs.

ON CLIMATE IN ACTION | Automotive

ON Climate goes into much greater detail to uncover hidden truth and reveals areas of risk and advantage, and how they may change over time.

The auto sector is undergoing dramatic transformation as we move towards electric vehicles (EV). The pace of this technological disruption is astounding and will impact the entire value chain affecting both upstream and downstream sectors. Banks need a borrower-level understanding of how risk cascades down the value chain.

HIGH LEVEL

RAW MATERIALS · PARTS MANUFACTURERS · OEMS · AUTO SALES & SERVICE · END MARKET · SCRAPYARDS

GRANULAR LEVEL

L1 TO L5 NAICS

We dig down five levels, to NAICS 6-digit industry code to uncover crucial details buried within your data, providing you the information needed to report, recommend, and act with confidence.

TRUCK TRAILER MANUFACTURING

EMISSION INTENSITY

PCAF

SECTOR EMISSION / SECTOR REVENUE

2025 · 2030 · 2040 · 2050

Emissions intensity for the industry is calculated by dividing the aggregated amount of carbon emissions for the industry with the total industry revenue. The data used are from: US census data I EPA/market data I USGS I CDP I Census inventory I Borrower sustainability reports and other disclosures.

SUPPLY CHAIN IMPACT

Raw material cost pass on

Steel · Plastics · Rubber · Aluminum

POLICY ACTION

Carbon tax

MITIGATION/CAPEX INVESTMENT

Green Hydrogen replacing fossil fuel usage

Transition to EV % Fleet Transitioning to EV

Emissions intensity along with NGFS intensity reduction target are used to identify the financial impact drivers needed to reach the target and weightage of each driver. Some drivers (like Policy action) are derived from NGFS, while others are a discovered through extensive sector research by ON.

REVENUE CHANGE

2025 · 2030 · 2040 · 2050

EBITDA MARGIN %

Expected recovery

2020 · 2025 · 2030 · 2040 · 2050

DSCR + Leverage also considered

The impact drivers and the climate scenarios are overlaid on 14 borrower data points to identify borrower level impact metrics that influence revenue, debt service coverage, leverage and profitability, and provides forecast financials and credit metrics for the borrowers, thus assigning them a transition risk score.

LOWEST · LOW · MEDIUM · HIGH · HIGHEST

These scores can directly input to banks' existing risk rating models to drive a climate adjusted risk rating.

EMISSION INTENSITY » **FINANCED CARBON EMISSIONS**

- Total Scope 3 financed emissions for bank
- Financed emissions (Scope 1 and Scope 2) by sector
- Financed emissions (Scope 1 and Scope 2) for each borrower

The emissions intensity is also used to identify carbon emissions for borrowers following PCAF's score 3 and score 4 methodology.

OakNorth CREDIT INTELLIGENCE

Schedule a demo to learn how the ON Climate can help your institution better evaluate and manage climate-related risks in your portfolios.

Request a demo