

2025

Global fixed income impact report

Measuring outcomes in public markets





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Direct and measurable impact

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Nuveen's approach ▶

Preface



Amy O'Brien
*Global Head of
Responsible Investing*

With more than 125 years of investment experience, Nuveen has long understood that navigating dynamic environments requires both disciplined analysis and adaptive thinking. The post-COVID era has presented a unique convergence of challenges, from heightened geopolitical tensions and extreme weather events to rapid technological advancement and the growing energy demands of artificial intelligence deployment. What distinguishes this moment is how these forces have crystallized the investment case for portfolios that address structural transformation while delivering measurable outcomes.

The Energy Transition

The shift toward low-carbon energy sources continues to gain momentum, evidenced by the \$2 trillion in global capital expenditure (CapEx) that went into clean energy in 2024 — \$800 billion more than the capital allocated to fossil fuels.¹ This signal for additional clean energy investment opportunities aligns with our research showing that 88% of institutional investors have invested in, or plan to allocate funds to, clean energy investments.² However, the real challenge isn't identifying opportunity; it's executing effectively amid regulatory complexities and varying policy frameworks across regions.

Assets within our fixed income impact theme Renewable Energy & Climate Change amounted to \$4.3 billion (as of 31 Dec 2024),³ financing projects facilitating decarbonization including solar and wind energy, battery storage and energy efficiency improvements. We believe these investments demonstrate that in an interconnected world,

the assets best positioned for long-term value creation are those addressing the structural realities shaping markets.

Nature-Positive Investing

COP16, the 2024 United Nations Biodiversity Conference, emphasized integrating biodiversity protection with climate solutions, signaling a crucial evolution in how to approach investing in nature-positive outcomes.⁴ This evolution validates Nuveen's fixed income impact team's longstanding role as anchor investors in bonds supporting solutions from wildlife conservation to sustainable agriculture to forest restoration.

Recognizing that climate mitigation, nature restoration and sustainable development are interdependent necessities, we believe fixed income is an ideal asset class to advance nature-based solutions. As a quintessential risk management asset class, fixed income helps finance risk reduction with the goal to ultimately improve cash flow stability and lower spread volatility.

Nuveen's Role as an Asset Manager

Nuveen's fixed income impact assets exceeded \$10 billion for the first time in 2024,³ reflecting not just growing institutional confidence in our approach, but the maturation of frameworks and capabilities designed to pursue attractive risk-adjusted returns and measurable real-world outcomes.

In an era when climate risks, technological disruption and social tensions are shaping market dynamics, I remain confident that our disciplined approach to identifying use-of-proceeds transactions, as well as impact measurement and management, can enhance portfolio resilience and deliver the outcomes our clients expect in an increasingly complex world.

Introduction



Stephen M. Liberatore, CFA
*Head of ESG/Impact – Global
Fixed Income*



Hushing is for libraries, not capital markets

Earlier this year, “greenhushing” joined the sustainable finance lexicon. Following President Trump’s inauguration in January, U.S. companies became far less willing to publicly discuss their environmental and sustainable business plans. For example, utility companies that had previously issued labeled green bonds opted against it — while underlying strategies to transition power generation to be more reliant on renewable energy remained unchanged. And with Elon Musk in peak DOGE cost-cutting mode, social and sustainable programs were under heavy scrutiny and U.S. corporate bond issuers wanted to avoid attracting attention from the new administration. As a result, some issuers pivoted to general corporate debt and remained as vague as possible about their capital expenditure (CapEx) plans.

Thankfully, the greenhushers were a small subset of issuers in the global fixed income market. According to data from Citi, through September 30, 2025, labeled issuance was down around 10% from the same period in 2024, primarily due to U.S. corporations; other issuer cohorts were either flat or running ahead of their prior year pace. While U.S. corporations borrowing in U.S. dollars retreated, companies based outside of the United States across the financial, industrial and utility sectors were conducting business as usual. Supranational issuers continued to access capital in U.S. dollars, euros and various other developed and emerging market currencies. Affordable housing programs supported by banks, municipalities, government agencies and community development finance institutions (CDFIs) were borrowing. These developments allowed us to continue deploying capital in attractive, liquid credit instruments and diversified portfolios, despite the slowdown in U.S. corporate labeled issuance, highlighting an inherent strength of our multi-sector impact approach. Also, as 2025 progressed, we saw U.S. corporate issuance of labeled bonds slowly restarting.

As dictated by our investment process, our team scrutinized the greenhushers to determine the intent of their spending plans and the consistency and coherence of their operating models. Would their CapEx decisions help improve or stabilize free cash flow, derisk their operations or mitigate material event risk, or increase transparency and accountability throughout the enterprise? If we determined the decision-making was financially sound while also supportive of well-defined green, social or sustainable outcomes, we would consider investing in the credit. We’d prefer to see public conviction in an issuer’s strategy combined with labeled issuance that is clearly aligned with the International Capital Market Association’s Green or Social Bond Principles. But in practice, unlabeled deals can also represent compelling impact opportunities when we have sufficient clarity about the use of proceeds and outcomes-based reporting.

Evaluating intent and strategic fit is fundamental

We applied the same diligence when “greenwashing” was the market’s focus. Occasionally, we’ve seen green bonds issued as public relations tactics without material free cash flow benefits associated with the transaction. In these instances, our team was not immediately swayed by the label. We sought to determine whether an issuer was embellishing their green credentials with half-hearted or immaterial labeled issuance. We asked the tough questions about the use of proceeds: would they materially reduce carbon emissions, improve margins through cheaper and more predictable energy generation, generate stronger free cash flow via energy-efficient buildings, reduce safety incidents, or better educate workforces to improve standards of living? If not, we chose not to allocate client capital to these issuers.

The moral of the story is that we believe there is no substitute for fundamental credit research. We have to know what we’re investing in on

behalf of our clients, and we can't do that by checking if a bond or issuer is included in an index, or has a symbol attached to it on Bloomberg or some other vendor's dataset. We dive deep with issuers and their bankers on CapEx needs, spending plans and intended outcomes. We consider the stability of cash flows, resilience of balance sheets, relative value compared with peers and the broader sector, and the risks to forward-looking issuer and industry trends. If a bond doesn't offer a potential alpha opportunity or a specific risk management purpose, we don't add it to client portfolios.

The depth of Nuveen's credit capabilities is integral to our impact investing approach, which targets market returns or better. The public fixed income market is constantly evolving, innovating and becoming more complex. Issuance spans the corporate, supranational, government-related, municipal, hybrid/preferred, broadly syndicated loan, residential mortgage-backed, commercial mortgage-backed and asset-backed sectors, as well as newer structures such as outcome bonds and debt conversions. Our team is continually evaluating how to model these different structures and their cash flows, determine their risks and price the compensation required to bear those risks. We believe Nuveen's 100+ analysts and 20+ traders are a competitive advantage in the market that few firms can match.

**The environment
impacts society, which
impacts the economy.**

A celebration of impact outcomes

The proliferation of bonds helps finance the obvious: renewables, batteries, affordable housing, better schools and safer drinking water. But the market also provides ample opportunities to support marine and terrestrial conservation, protect wildlife, improve the quality of health care and access to vaccinations in developing countries, teach sustainable farming and financial literacy to small, women-owned businesses, and generate high-quality, verifiable carbon credits.

In the pages that follow, we review the social and environmental outcomes financed by our clients' assets in calendar year 2024. We highlight recent impact investments: affordable housing in two European countries; access to immunizations that support communities within emerging economies; geothermal energy generation in Indonesia; and clean drinking water in large U.S. cities. And we celebrate the range of positive impacts that investors can make within alpha-seeking, diversified core and high-grade credit portfolios that represent meaningful strategic allocations.

**As society and the
economy thrive,
communities are uplifted.**

**This report would not be possible
without the exceptional effort and
dedication of my investment colleagues,
and the support from so many colleagues
across Nuveen. Thank you!**

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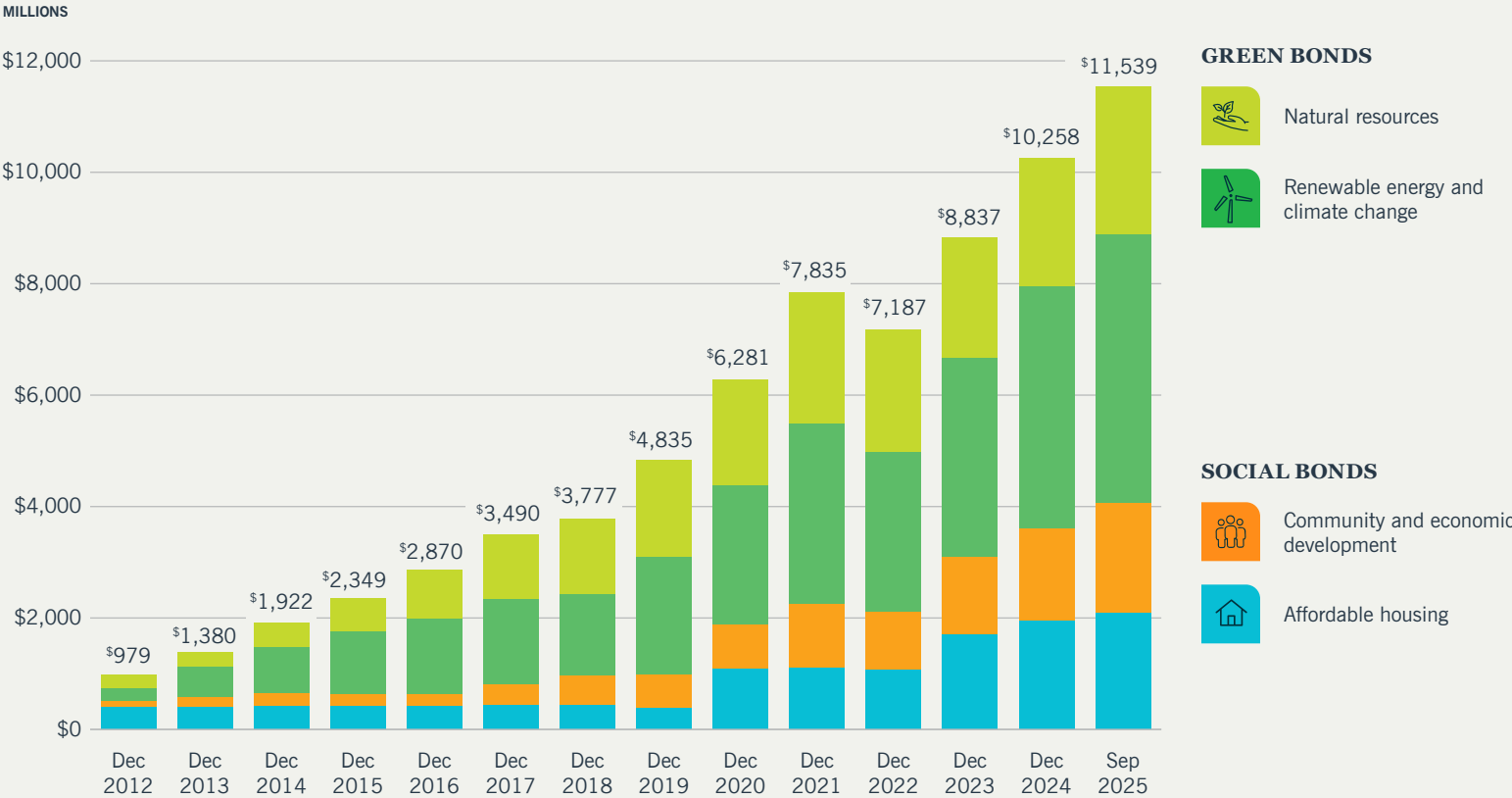
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Impact assets under management by theme



Source: Nuveen. As of 30 Sep 2025.

How Nuveen contributes to impact in public markets

Tapping the potential of public fixed income markets is a highly effective way to drive positive outcomes in our communities and around the world. Our goal is to lower the cost of capital for borrowers financing impact projects and initiatives. Relative to private investments, public securities offer daily pricing and liquidity, as well as exposure to impact opportunities with a far lower minimum investment. The perception that impact objectives can be pursued only through private strategies is inherently false. Public markets offer vast opportunities to finance positive outcomes, as detailed throughout this report.

Innovation in the impact market requires engagement. Nuveen is one of the world’s largest fixed income managers and a recognized leader and innovator in impact investing. As such, we have far-reaching access to management teams, lenders, policymakers and elected officials seeking to finance environmental and social projects in public markets. We maintain strong relationships with underwriters to ensure healthy allocations to new issues and gather ongoing intelligence in secondary markets. Our team meets frequently with prospective issuers to discuss how to structure bonds, what characteristics are needed to satisfy investor demand and the appropriate level and quality of impact disclosure and reporting.

Engagement is an essential feedback loop in our modern approach to responsible investing. It transcends exclusionary processes that eliminate bad actors but provide no incentive for issuers to modify their actions. Consultative engagement between issuers and experienced impact investors — like Nuveen — encourages issuers to finance projects with meaningful outcomes using public markets. Through our approach, Nuveen’s fixed income impact investment team

drives capital toward a wide range of initiatives. Some outcomes, like renewable energy generation and affordable housing for low income households, achieved scale years ago. Others require extensive engagement before Nuveen agrees to be lead order. These efforts span the definition or refinement of use of proceeds and impact reporting frameworks, as well as deal structure and price.

Issuer accountability is critical. Operational strategies premised on equity raises and general corporate debt instruments enable management to retain control of capital expenditures. If management turns over, or simply changes strategy due to shareholder or other stakeholder pressure, impact outcomes may not be funded in the end. Net zero pledges – without shovel-ready projects and committed CapEx – are not worth much, in our analysis. ESG strategies focused on positive ESG rating trends, net zero pledges or conceptual SDG alignment are often insufficient to hold issuers accountable, if not accompanied by outcomes-based reporting.

Our approach to impact is an investment framework that spans global bond markets, sectors, currencies, and credit quality tiers. Our focus is on financing projects and programs via the public fixed income market with clear, positive societal and/or environmental outcomes. We do not participate in deals unless the use of proceeds are clearly articulated in offering documents, the outcomes are observable, and reporting will be available with sufficient frequency and transparency to measure the results and hold issuers accountable. In the typical year, up to one-third of labeled GSS (Green, Social, Sustainable) issuance falls short of our standards.

Our team’s “*direct and measurable*” framework ensures that we control the proceeds on behalf of our clients. We pursue a non-concessionary approach to impact, with all investments assessed on a relative value basis. We apply two criteria to qualify a bond as an impact investment: use of proceeds and measurable outcomes.

This assessment is based on careful study of offering documents, and in many cases, direct discussion with the issuer. This idiosyncratic evaluation requires a heavy commitment to up-front due diligence. We speak with project leads and managers, engineers, scientists, CEOs, CFOs and other senior leaders of the issuer to fully understand how proceeds from the deal will be deployed and the resources the issuer has in place to track and measure project- and outcome-specific KPIs. In all cases, the use of proceeds must be clearly aligned with one or more of our four impact themes, as shown below.

SOCIAL BONDS



Affordable housing



Community and economic development

GREEN BONDS



Renewable energy and climate change



Natural resources

2

2024 Outcomes

Affordable housing ▶

Community and economic development ▶

Renewable energy and climate change ▶

Natural resources ▶



\$1.9B

AUM as of 31 Dec 2024



Affordable housing

Objectives

Increase the availability of and access to affordable, sustainable and high-quality housing, and reduce the rent burden for low- to moderate-income populations, globally.

Eligible projects

- Low- to moderate-income housing loans
- Transit-oriented development
- Walkable communities

Measurable outcomes

Impact metric	Impact for 2024	Equivalent to:
Number of affordable mortgages guaranteed or provided	987,612	About twice the total housing units in Cyprus ⁵
Access to housing including displacement, workforce, and affordability	346,610 units	
Housing units built or supported with an AMI Below 80%	120,892 units	
Housing units built or supported at or below 60% AMI	87,643 units	
Housing units built or supported at or below 30% AMI	24,608 units	

Aligned SDGs



\$1.7B

AUM as of 31 Dec 2024



Community and economic development

Objectives

Create more inclusive and sustainable communities and increase availability of basic services for communities. Includes health care, education and financial services for small businesses; improving rural livelihoods; reducing food insecurity; and supporting recovery from disaster, conflict and crisis.

Eligible projects

- Benefits underserved and/or economically disadvantaged communities
- Services: financial, hospital/medical and educational
- Urban revitalization: community centers, reconstruction activities
- International development and humanitarian activities: disaster relief, economic aid and agricultural support

Measurable outcomes

Impact metric	Impact for 2024	Equivalent to:
Full-time jobs created	2.0 million	
Farmers trained	102,598	
Farmers trained (women)	23,825 ⁶	
People who benefited from access to basic products and services	24.6 million	About twice the population of Belgium ⁷
People who benefited from access to basic products and services (women)	360,413	
People reached through community programs	16.9 million	About twice the population of New York City ⁸
People reached through community programs (women)	352,818	

Aligned SDGs



\$4.3B

AUM as of 31 Dec 2024



Renewable energy and climate change



Objectives

Increase the share and efficiency of renewable energy in the global energy mix, improve the availability of sustainable transportation and reduce greenhouse gas emissions.

Eligible projects

- New, expanding or existing renewable energy projects (including solar, wind, geothermal, and small-scale hydroelectric)
- Smart grid and other projects designed to make power generation and transmission systems more efficient
- Energy efficiency projects resulting in the reduction of greenhouse gas emissions

Measurable outcomes

Impact Metric	Impact for 2024	Equivalent to:
CO2-equivalent emissions avoided	143.8 million metric tons	33.5 million gasoline-powered passenger vehicles driven for one year ⁹
Daily riders on public transit	5.3 million	
Energy saved	5.0 billion kWh	9 natural gas-fired power plants in one year ⁹
Total renewable energy capacity	102,008 MW	
New renewable energy capacity added	6,447 MW	
Renewable energy generated	160.4 million MWh	22.5 million homes' average annual electricity use ⁹
Battery capacity	1,736 MW	

Aligned SDGs



\$2.3B

AUM as of 31 Dec 2024



Natural resources

Objectives

Conserve natural resources and habitats; reduce deforestation; sequester carbon and reduce emissions; reduce waste, water usage and pollution; improve sanitation and access to clean water; support sustainable food production; sustain rural livelihoods.

Eligible projects

- Land conservation and sustainable forestry, fishing and agriculture
- Certified green buildings
- Remediation and redevelopment of polluted or contaminated sites
- Improvement of clean drinking water supplies and/or sewer systems infrastructure, waste management projects

Measurable outcomes

Impact metric	Impact for 2024	Equivalent to:
Conserved marine area	237,120 sq miles	
Land conserved	1.1 million hectares	3,239 New York City Central Parks ¹⁰
Land restored or sustainably managed	1.5 million hectares	
BREEAM certified Good, Very Good, Excellent, or Outstanding	19 buildings ¹¹	
LEED gold and platinum certified buildings	91 buildings ¹²	
People who benefited from clean water and wastewater projects	20.5 million	About the population of Mumbai, India ¹³
Waste diverted from landfills	3.7 million metric tons	
Water delivered	533 million gallons/day	
Water saved	10.6 billion gallons	About 96,492 homes' average annual water use ¹⁴
Wastewater treated	1.9 billion gallons/day	

Aligned SDGs



3

Case studies

Social housing in Europe ▶

International Finance Facility for Immunisation
Company (IFFIm) ▶

Star Energy Geothermal ▶

Municipal water sanitation and flood mitigation ▶



Affordable housing

PLACES FOR PEOPLE (U.K.) SOCIAL HOUSING BOND

NWB (NETHERLANDS) SDG HOUSING BOND



UN SDG
ALIGNMENT

MEASURABLE IMPACT 2024

- **U.K. (Places for People):** 1,267 new affordable homes delivered. 695 homes benefited from energy efficiency upgrades.



Building better access to a fundamental right

The housing affordability crisis is a global phenomenon. For a significant share of the world's population, rising costs have made it increasingly difficult to find adequate shelter, which the United Nations defines as a basic human right.¹⁵ A recent International Monetary Fund (IMF) study of home prices across 40 countries showed that, on average, housing is even less affordable now than during the mid-2000s price bubble.¹⁶

Specifics may vary by individual country, city and local community, but the root causes of the affordability crisis are common to most markets: severe, long-term supply constraints in the face of ever-growing demand, exacerbated by median income levels that are well below what's needed to purchase or rent a median-priced property. Another similarity across geographies has been the relative inability of traditional government housing policies, however well-intentioned, to make significant inroads on their own.



**AFFORDABLE
HOUSING**



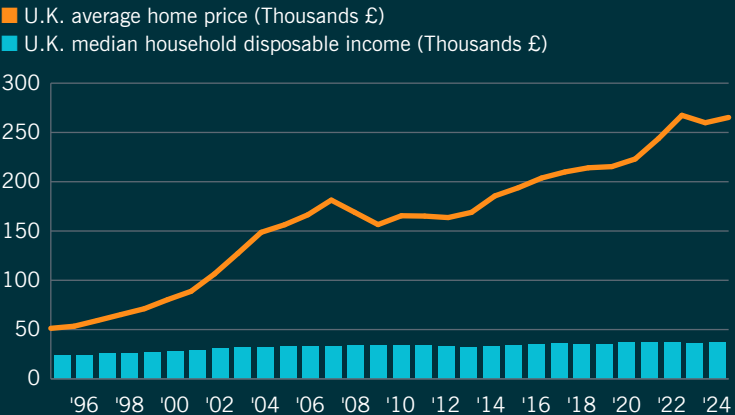
The affordability crisis, historically more an obstacle for lower-income households, has become entrenched for middle-income earners as well — a group typically ineligible for government assistance programs.¹⁷ As the problem grows more intractable, solutions may require harnessing the power of private-sector capital and public-private partnerships. Two examples of Nuveen’s investment in such efforts are social housing bonds issued by Places for People Group Ltd. in the United Kingdom and Nederlandse Waterschapsbank N.V. (NWB) in the Netherlands.

United Kingdom: The scope of the housing affordability crisis in the U.K. is daunting, characterized by:

- **Supply and demand gap:** An estimated 340,000 new homes (of which 145,000 should be deemed “affordable”) are needed annually to meet current housing demand in England,¹⁸ but the pace of homebuilding in the country has failed to keep up. In 2023, for example, only 210,320 new homes were built.¹⁹ Meanwhile, there are 1.2 million low-income households²⁰ on the waiting list for publicly or nonprofit-owned affordable living quarters, also known as social housing.
- **Home prices outstripping income growth:** It’s been two decades since an English family earning the median income could afford a median-priced home.²¹ Only the cheapest 10% of houses in England are now considered affordable for the middle-income bracket.²¹ Elsewhere in the U.K., median-priced homes in Wales, Scotland and Northern Ireland have been out of reach for middle-income earners since 2004, 2006 and 2017, respectively.²¹ At the same time,

renting has become a far less viable option for many in the region, with monthly rates posting their biggest increase on record in 2024 and reaching “the very end” of what tenants can afford.²²

HOME PRICES OUTPACING INCOME GROWTH IN THE UK



Source: Office for National Statistics (ONS) U.K. Disposable income refers to income after taxes.*

- **Burgeoning homelessness:** The number of unhoused people has reached record or near-record high levels in England²³ and Scotland.²⁴ More than 183,000 Londoners — equivalent to at least one in 50 of the city’s residents — are counted as homeless and living in temporary accommodations arranged by their local borough.²⁵ In Northern Ireland, 58,238 people meet the statutory definition of “homeless,” with another 25,000 estimated to be homeless but not counted in official data, meaning one in 23 people are “experiencing some form of homelessness.”²⁶

London-based **Places for People (PfP)** plays a significant role in addressing affordability challenges across the U.K. Founded in 1965, PfP is a social enterprise (i.e., private U.K. business entity with a social purpose) focused on building and managing “homes and communities where everyone is welcome and everyone can thrive.”²⁷ PfP consists of 20 companies engaged in construction, development, property management and related businesses central to its mission. In providing affordable housing solutions, PfP often partners with Homes England — the U.K. national government’s housing and regeneration agency sponsored by the Ministry of Housing, Communities and Local Government — and with local city and borough councils.

PfP prefers a “whole community” focus that, depending on the specific building or redevelopment project, may encompass not only affordable housing but also retail and leisure space, schools, parks, and transportation infrastructure. Key to this approach is the Places for People Sustainable Finance Framework, through which PfP issues bonds, private placements and term loans, with the proceeds funding projects aimed at both expanding access to affordable housing and reducing building emissions. The framework is aligned with the ICMA Green Bond Principles.

Nuveen directed capital to PfP in December 2023. The issuer came to market with a £500 million (approximately \$US 650 million) bond, maturing in December 2041. According to Portfolio Manager Jessica Zarzycki, PfP is one of the largest corporate social bond issuers in GBP. Proceeds financed affordable housing for low-income and homeless populations and were also used to improve the energy efficiency of existing



AFFORDABLE
HOUSING



affordable housing stock.²⁸ The financing of energy-efficiency upgrades amplifies the affordability impact of these investments. By improving building longevity and reducing heating costs, these improvements lower residents’ total housing expenses and free up critical discretionary income. This integrated approach reflects our team’s core impact thesis: sustainable solutions must address the interconnected social and environmental challenges that shape community well-being. Housing affordability will require coordinated public and private initiatives to address the interconnected challenges constraining housing supply. Recognizing this, the UK government has introduced various regulatory reforms aimed at alleviating the housing crisis. These includes zoning reforms, such as the introduction of “grey belt land”—previously underutilized areas within the Green Belt that can be designated for development without comprising core protected lands. (The Green Belt consists of designated areas protected from most forms of development to prevent urban

sprawl.) Regulations will require half of the dwellings built in the grey belt to be affordable, which will include homes that are at least 20% below local market rents.²⁹ Additional reforms target accelerated planning processes through increased resourcing and regular assessments, which are expected to help deliver on housing commitments almost three times faster.³⁰

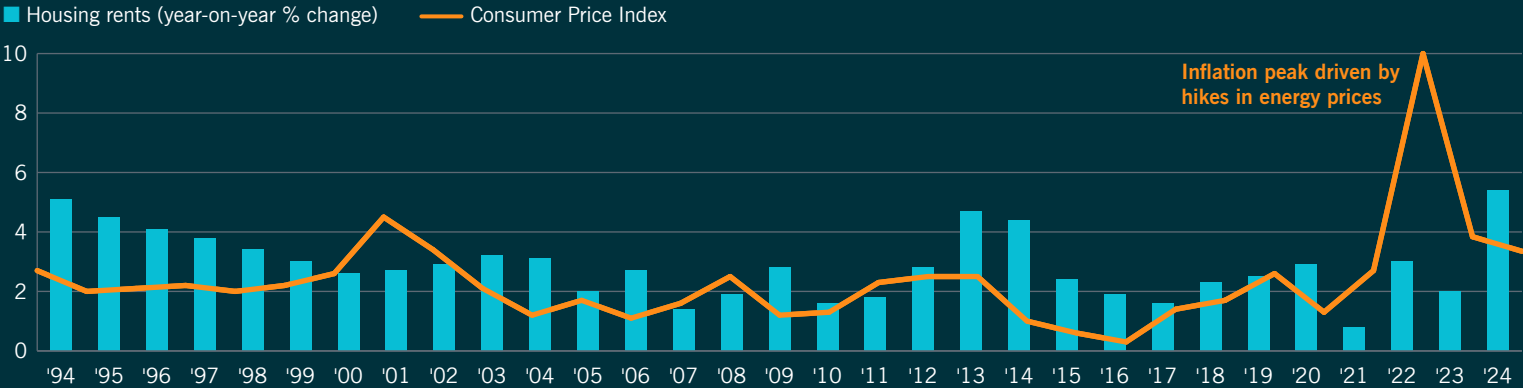
The Netherlands: Like the U.K., the Netherlands is grappling with a severe supply and demand imbalance that has made housing increasingly unaffordable. Nationwide, house prices have doubled in the past decade, with homes in some highly desirable areas appreciating 130%.³¹ Residents earning a typical Dutch salary of €44,000³¹ have little if any hope of buying an average Dutch home with a price tag that now exceeds €500,000 (\$USD 585,000).³² Meanwhile, the average rent in the Netherlands increased 5.4% year over year in July 2024 — the largest jump in more than 30 years.³³

These trends have led to extensive social housing initiatives intended to provide greater access and affordability.

In fact, the Netherlands has more social housing as a percentage of the total residential market than any other European country — 30% as of January 2025.³⁴ Nonprofit social housing associations, or *woningcorporaties* (similar to the U.K.’s housing-focused social enterprises), own two-thirds³⁵ of the nation’s roughly 3.4 million rental units.³⁶ There were 269 active housing associations in the Netherlands as of January 2025,³⁷ charging an average monthly rent of €607 (about \$US 711) in 2024.³⁸ That’s roughly half the €1,221 average (\$US 1,430) rent in the private commercial market.³⁸

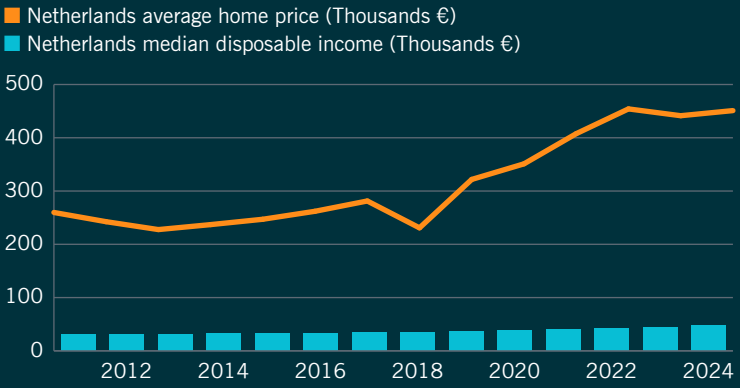
Yet this cost advantage hasn’t delivered sufficient relief, largely because the country has been unable to build social housing units rapidly enough to meet demand. With some research suggesting a current shortfall of more than 400,000

2024 SAW THE LARGEST JUMP IN DUTCH RENT PRICES IN MORE THAN 30 YEARS



Source: Central Bureau of Statistics (CBS) Netherlands

HOME PRICES OUTPACING INCOME GROWTH



Source: Central Bureau of Statistics (CBS) Netherlands. Disposable income refers to income after taxes.



AFFORDABLE
HOUSING



residential units,³⁸ the waiting list for social housing in the Netherlands is approximately seven years, on average, and as long as 18 or 19 years in major cities like Amsterdam.³¹

Headquartered in The Hague, **Nederlandse Waterschapsbank N.V. (NWB)** is a private-sector bank that provides low-cost financing to the Dutch public sector, including housing associations.³⁹ An innovator in the issuance of social impact bonds, NWB created the “Affordable Housing Bond” in 2017, later rebranded as “SDG Housing Bonds.” This change was intended to “reflect the housing associations’ efforts to enhance sustainability.”⁴⁰ All SDG bonds are issued in accordance with NWB’s Social Bond Framework, which is aligned with the ICMA Social Bond Principles. The issuer publishes annual impact reports detailing key outcomes, including new housing stock creation, energy-efficiency upgrades and affordability metrics. Proceeds from these bonds fund NWB’s lending to the Dutch housing associations. Nuveen’s conviction in NWB is driven by two key differentiators that set the issuer apart:

Breadth of community engagement: NWB works with housing associations serving diverse vulnerable populations, including senior living communities and individuals with disabilities, ensuring affordable housing reaches those most in need.

Commitment to sustainable and energy-efficient building practices: NWB-financed projects prioritize environmental sustainability alongside affordability, addressing both the housing crisis and climate transition simultaneously.

Nuveen’s fixed income impact team first invested in NWB in 2016 with the issuer’s inaugural USD green bond and has since continued to direct capital toward both green and social projects from NWB.



SDG Housing Bonds fund loans to social housing associations across the Netherlands, which:

- Deliver adequate dwellings
- Provide housing to vulnerable groups
- Take environmental and energy measures
- Manage affordable housing
- Contribute to livable communities and neighborhood quality
- Maintain the quality of adequate housing
- Contribute to local partnerships

Security description	Nuveen impact theme	Issue date
NEDWBK 2 3/8 24 Mar 2026		Mar 2016
NEDWBK 0 1/8 28 May 2027		May 2019
NEDWBK 1 28 May 2030		May 2020
NEDWBK 3 20 Apr 2033		Apr 2023
NEDWBK 4 01 Jun 2028		Jun 2023
NEDWBK 2 5/8 10 Jan 2034		Jan 2024
NEDWBK 4 3/8 28 Feb 2029		Feb 2024

Source: Bloomberg.

In 2024, NWB issued €2.9 billion (about \$US 3.5 billion) in SDG Housing Bonds.³⁸ Proceeds support loans to Dutch housing associations, which plan to build 180,910 social rental units between 2025 and 2029.



Community and economic development



INTERNATIONAL FINANCE FACILITY FOR IMMUNISATION COMPANY (IFFIm)



UN SDG
ALIGNMENT

Measurable impact in 2024

- 75 million children vaccinated through programs
- >32.6 million girls fully immunized against HPV with Gavi support in 2024 – more than the previous ten years combined.
- 58 Gavi-supported vaccine introductions and preventive campaigns

Saving lives, one child at a time

For several decades following the end of World War II, access to immunizations became available across the globe thanks to efforts by the World Health Organization (WHO) and its Expanded Programme on Immunization (EPI). The EPI was launched in 1974 to ensure that children in all countries benefited from life-saving vaccines.⁴¹

But by the 1990s, the progress made on international immunizations had stalled. Although nearly 30 million children across the developing world hadn't been fully immunized against deadly diseases — and many others hadn't been immunized at all — lower-income countries couldn't afford the necessary vaccines.⁴²



COMMUNITY AND ECONOMIC DEVELOPMENT



In response, the Gates Foundation, along with founding partners the WHO, UNICEF and the World Bank, created Gavi, the Global Alliance for Vaccines and Immunization. Gavi is an innovative partnership dedicated to encouraging drug manufacturers to lower vaccine prices in exchange for predictable, high-volume demand from those poor nations.

Since its inception in 2000 through 2023, Gavi has overseen the vaccination of more than 1.1 billion children, helped save nearly 19 million lives and reduced child mortality by half in 73 countries, all while generating economic benefits estimated at more than \$250 billion (USD).⁴³ Only low- and middle-income countries with a per capita Gross National Income (GNI) equal to or below \$1,820 are eligible for Gavi support, of which there were 54 in 2024.⁴⁴

Gavi gets a shot in the arm

In 2003, the United Kingdom proposed a groundbreaking idea: an international finance facility designed to provide funding to address critical needs in the developing world. Three years later, the International Finance Facility for Immunisation (IFFIm) was founded as Gavi's financing arm.

The IFFIm issues vaccine bonds, which are backed by long-term, legally binding pledges from donor governments. The bonds carry a strong, investment-grade credit rating based on 1) the high credit quality of IFFIm's donors and their

legally binding commitments, 2) a politically compelling mandate to support immunization and vaccination in developing countries and 3) conservative financial policies, in addition to financial and risk management by the World Bank.⁴⁵

This novel and efficient financing model “frontloads” capital to accelerate vaccine deliveries. What would otherwise be long-term monetary pledges contributed over 20 to 30 years become available immediately upon issuance of the vaccine bond. Frontloading is key to securing supplies and large vaccine rollouts at a scale typically beyond Gavi's annual donor- and grant-based funding. The concept is similar to securitization, which makes capital available to issuers or sponsors who collateralize a bond with future cash flows. However, the IFFIm structure provides less expensive cost of capital given the simplicity and transparency of the bond and quality of the donor countries. IFFIm estimates that 142 million children have been immunized because of the ability to frontload pledges via the financing facility.⁴⁶

IFFIm vaccine bonds provide a successful framework investors can utilize to evaluate future public health-focused social bonds, according to Nuveen associate portfolio manager Adam Guerino. The team believes adherence to the Social Bond Principles with clear use of proceeds, targeted impact, and measurable results across populations is a useful template for scaling similar issuance in the public bond market.

AA- (FITCH)
AA1 (MOODY'S)
AA (S&P)

Credit ratings as of 30 Sep 2025

Examples of IFFIm impact:

Boosting Bangladesh: \$135.5 million of IFFIm capital has been used to fund programs here since 2021, helping to extend life expectancy from 47 years (in 1977) to 73.7 years. Also, as GNI has risen — due in large part to the country's commitment to immunization — Bangladesh may no longer need Gavi's support by 2030.⁴⁶

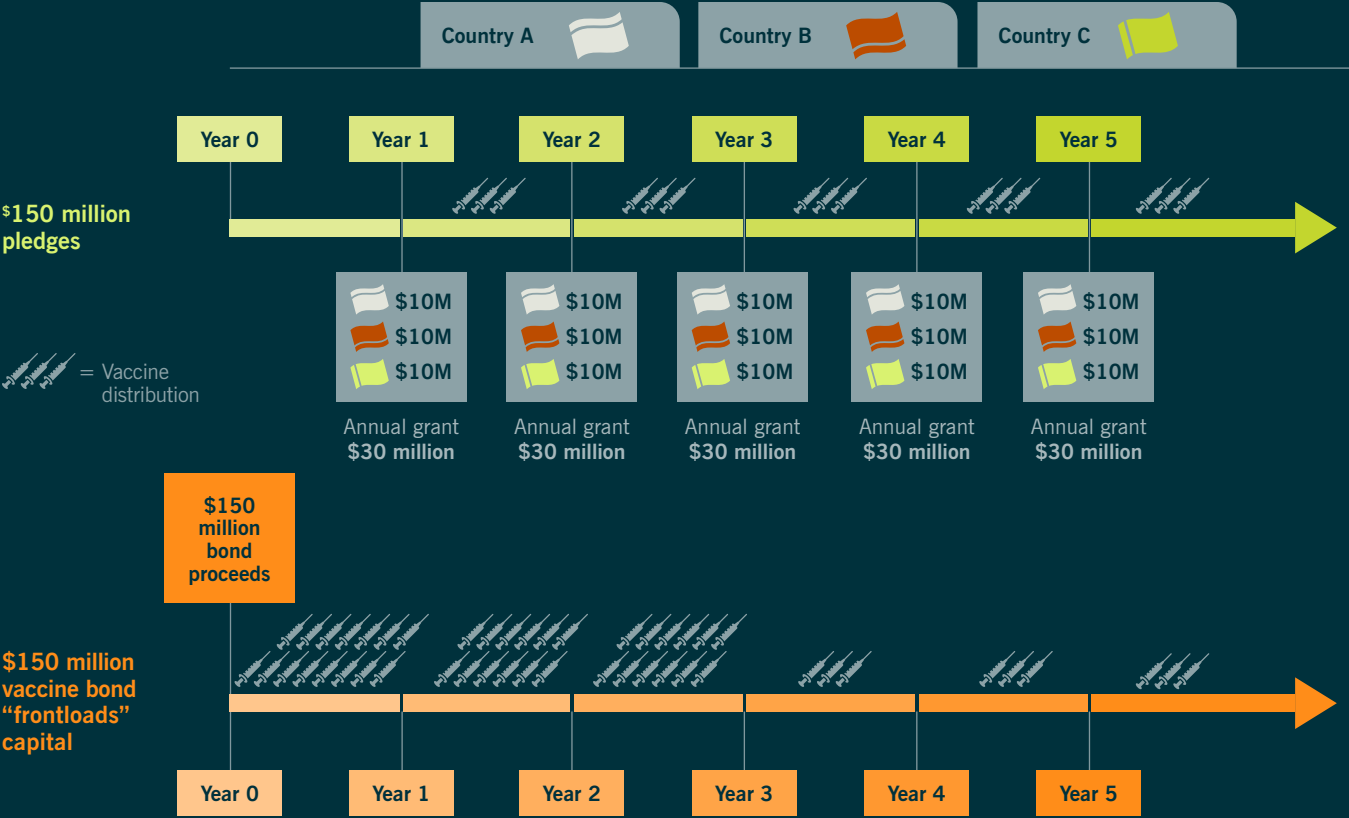
Terminating malaria: Each year, malaria kills nearly 500,000 children under age five and impacts hundreds of millions more, with Africa bearing the brunt of the disease's burden. But in 2025, 13 million children are expected to be vaccinated in Africa and from 2026-2030 Gavi hopes to reach at least 50 million children worldwide.⁴⁶

Expunging polio: IFFIm has invested \$191 million to help develop and license oral polio vaccine products that can be field tested for safety and purchased in bulk. IFFIm's support contributed to a 95% decline in polio cases in Nigeria and India, and an 85% drop in type 3 polio cases globally.⁴⁶

We believe Gavi vaccine bonds demonstrate innovative finance at scale: deploying capital faster and with more flexibility to deliver life-saving vaccines where they're needed.



COMMUNITY AND
ECONOMIC DEVELOPMENT



US \$9.7 BILLION IN DONOR COMMITMENTS

	United Kingdom US \$4.23 billion		Australia US \$346 million
	France US \$1.88 billion		Sweden US \$325 million
	Norway US \$1.07 billion		Canada US \$92 million
	Italy US \$821 million		South Africa US \$20 million
	The Netherlands US \$487 million		Brazil US \$20 million
	Spain US \$427 million		

Source: Gavi. As of June 2025

Each dollar of investment in immunization saves \$21 in health care costs, lost wages and lost productivity due to illness and death. That figure soars to \$54 when broader societal benefits are included.⁴⁷



Renewable energy and climate change



STAR ENERGY GEOTHERMAL



UN SDG
ALIGNMENT

Measurable impacts in 2024

- Total renewable capacity: 886 MW
- Renewable energy generated: 7,075,314 MWh
- CO₂-equivalent emissions avoided: 6,017,811 metric tons

Home is where the heat is

The Ring of Fire, a tectonic belt along the edges of the Pacific Ocean, is home to 75% of the world’s active volcanoes and 90% of its earthquakes.⁴⁸

Located within “the Ring,” Indonesia, an archipelago comprised of more than 17,000 islands and 120-130 active volcanoes, is uniquely positioned to harness the region’s underground heat to generate clean energy.

Yet despite this vast potential, Indonesia’s domestic coal industry dominates its energy mix. Population growth, a developing manufacturing sector and electrification have driven energy demand and deepened reliance on fossil fuels for power generation.

As the world’s seventh-largest contributor to greenhouse gas emissions, Indonesia is poised to play a significant role in global decarbonization. Funding and scaling geothermal generation will hasten the country’s goals to progress toward energy transition plans, improve energy security and create jobs across the archipelago.

INDONESIA

#4 most populous country (285 million)⁴⁹

#7 largest economy (GDP based on PPP)⁵⁰

#7 GHG emissions⁵¹

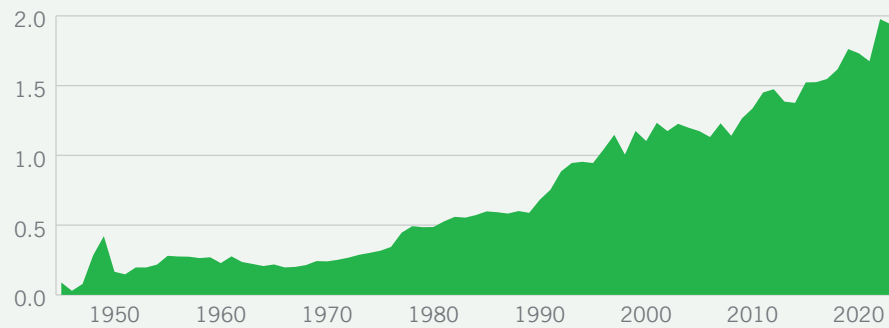


INDONESIA

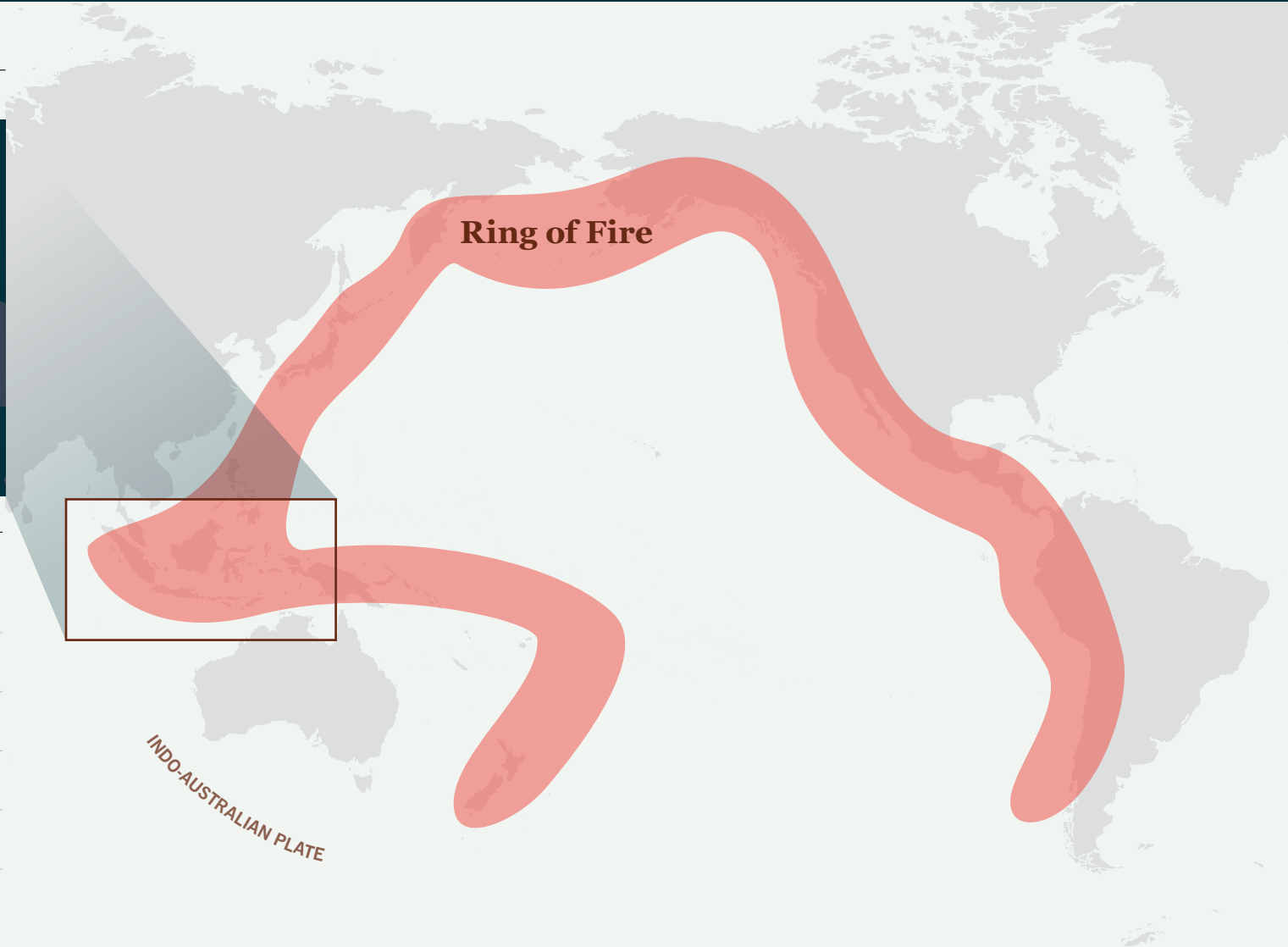


SHARE OF GLOBAL EMISSIONS

Indonesia's share of global CO₂ emissions (%), 1945-2023



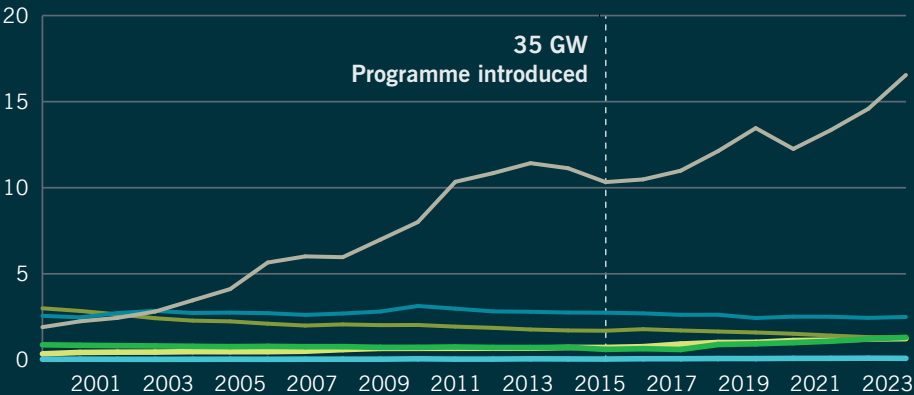
Source: Our World in Data



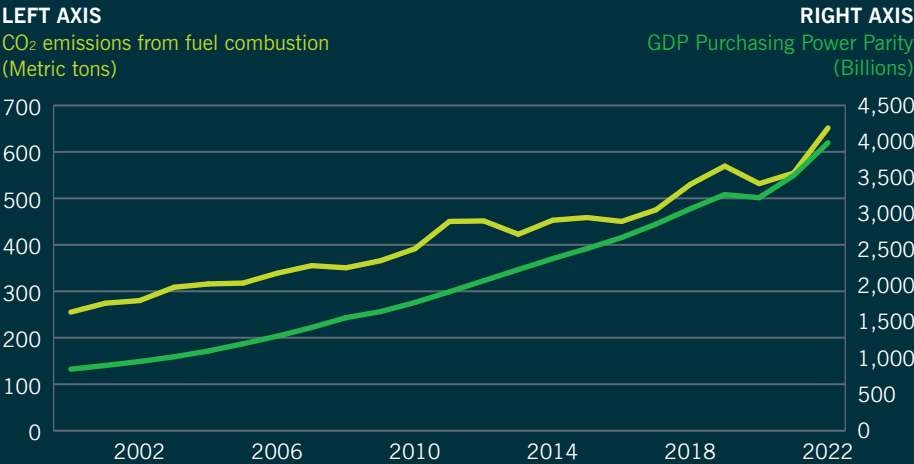
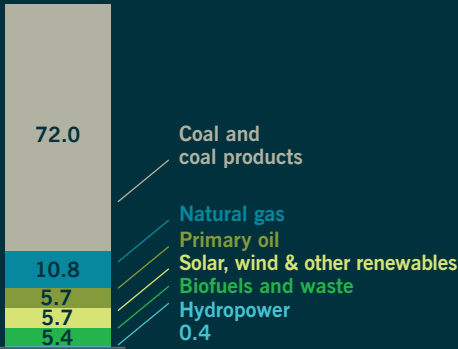


INDUSTRIALIZATION DRIVING INCREASING ELECTRICITY DEMAND AND EMISSIONS

Evolution of Indonesia’s domestic energy production, 2000-2023
Millions of terajoules (TJ)



2023 domestic energy production
by fuel type (%)



Source: International Energy Agency, International Monetary Fund. GDP PPP measures economic output adjusted for differences in local prices.

Coal remains king in Indonesia

Indonesia is the world’s third-largest producer of coal,⁵² trailing only China and India. The fossil fuel has played a central role in the country’s energy economy for decades, rooted in politics, industrialization and the nation’s abundant reserves. While coal exploration was first introduced by Dutch colonial rule over 160 years ago, large-scale commercial operations did not begin until the 1980s, supported by then-President Suharto’s goals to attract large-scale extraction through lax mining policies and foreign investment laws. By the early 2000s, coal extraction in the country, by both domestic and foreign companies, had grown exponentially.

In 2015, near the start of his term, former president Joko Widodo (2014-2024) launched the 35-Gigawatt Programme,⁵³ aimed to significantly increase the country’s electricity capacity, primarily through coal. To support this initiative, regulatory changes eased licensing requirements, extended mining permits and encouraged the development of new coal power plants.⁵⁴ The government also instituted a domestic-market obligation (DMO), which required coal miners to sell a percentage of production to domestic buyers and capped the price of coal sold to state electricity utility provider, PT Perusahaan Listrik Negara (PLN), at \$70 per tonne. These regulatory policies artificially lowered coal prices, making it an attractive fuel source for PLN. The result: Indonesia’s coal power capacity more than doubled, from 25 gigawatts (GW) to 52 GW, between 2015 and 2023.⁵⁵ (One gigawatt equals 1,000 megawatts, MW.) Not surprisingly, over the past two decades, CO2 emissions from fuel combustion increased by more than 150%.⁵⁶



Harnessing Indonesia's vast renewable potential

Indonesia has the world's second-largest installed geothermal generation capacity, at roughly 2.6 GW, trailing only the United States' 3.9 GW.⁵⁷ But it still has enormous potential: with an estimated capacity of around 29 GW, the country is currently utilizing only about 10% of its geothermal capacity as of September 2025.⁵⁸ Unlike solar and wind, which are falling in cost but still constrained by battery and storage technology, geothermal represents baseload generation technology not subject to intermittency and variability challenges.

The country's location above major tectonic plates provides a perfect environment for geothermal energy, which uses heat from the earth's core to generate steam, which in turn produces electricity. As tectonic plates shift, they form a subduction zone, where a heavier tectonic plate lies underneath a lighter plate. As the denser plate is forced deeper into the Earth's mantle, it melts. This molten rock, or magma, rises toward the surface, creating a heat source that drives geothermal activity.

Indonesia's National Energy General Plan (RUEN) has set a goal for renewables to provide 31% of the country's overall energy by 2050 and net-zero emissions by 2060.⁵⁹ According to EMBER, an energy think tank, a coal phaseout would require boosting renewables to 65% of power production by 2040, integrating battery storage and retiring 3 GW of coal annually.⁶⁰ Expanding geothermal development will be critical for meeting these targets. However, the country's DMO policy is a major regulatory hurdle, and new generation financing costs and early-stage geothermal exploration risk are challenges.

The potential for geothermal expansion is encouraging because maintaining Indonesia's high coal dependency carries economic and environmental risks. As the global economy accelerates toward cleaner and cheaper renewable power, the country faces headwinds such as expensive, stranded coal assets, along with the worsening environmental impacts of mining, including soil erosion, land and water degradation, and biodiversity loss.

Financing geothermal expansion in an underdeveloped market

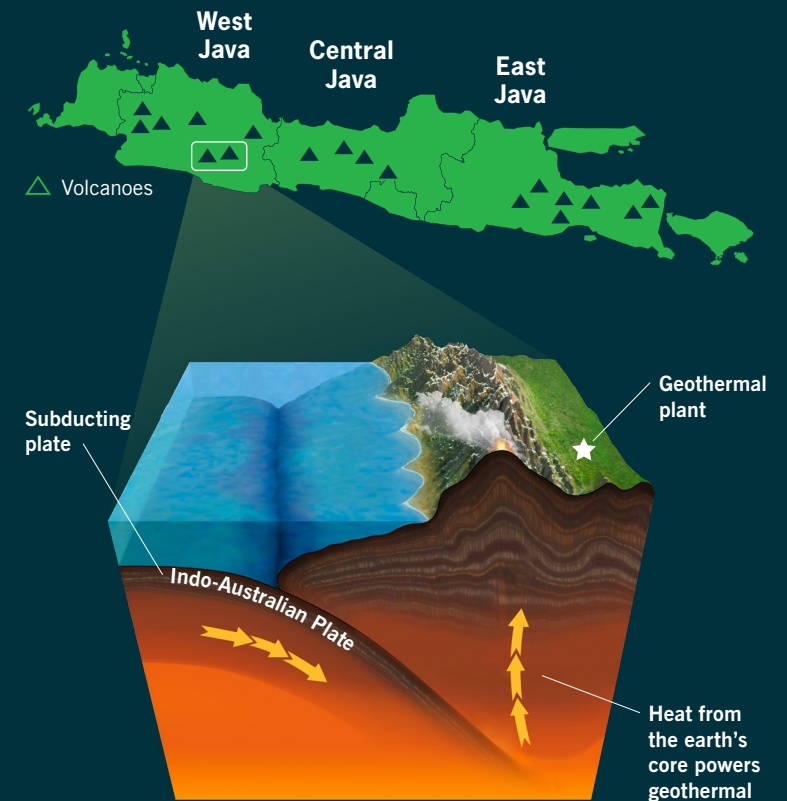
To support expansion of geothermal electricity generation, Nuveen purchased two green bond issues from Star Energy Geothermal, Indonesia's largest geothermal energy producer⁶¹ with operations across West Java province, the largest of Indonesia's 38 provinces.

Proceeds from the bonds support the operations of three geothermal plants: Wayang Windu, Salak and Darajat II, which together have a combined installed capacity of 886 MW. In 2024, the three plants generated over seven million megawatt hours (MWh) of electricity — enough to power nearly 4.6 million Indonesian households for one year.⁶² That production displaces approximately six million metric tons annually of CO₂ equivalents from fossil fuel combustion, the same effect as taking 1.4 million cars off the road for one year.

Star Energy Geothermal's business includes a long-term electricity sales contract with Indonesia's state-owned electric utility provider, PLN. In 2024, the issuer announced the

expansion of its Wayang Windu and Salak plants, with the development of new operating units, increasing capacity by 30 MW and 40 MW, respectively.⁶³

VOLCANOES IN JAVA, INDONESIA





Natural resources



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO



UN SDG
ALIGNMENT

Measurable impact in 2024

- People who benefited from clean water and wastewater projects: 5.2 million
- Area serviced: Approximately 882 square miles, including Chicago and 128 surrounding communities across Cook County, Illinois
- Wastewater treated: Average 1.2 billion gallons per day
- Prevented more than 20 billion gallons of combined sewage and stormwater in the Tunnel and Reservoir Plan (TARP) from polluting waterways
- Worked on more than 30 new stormwater management projects designed to protect nearly 2,000 structures

SAN FRANCISCO SEWER SYSTEM IMPROVEMENT PROGRAM



UN SDG
ALIGNMENT

Measurable impact in 2024

- People who benefited from clean water and wastewater projects: 2.7 million
- Area serviced: Approximately 420 square miles surrounding the San Francisco Bay
- Wastewater treated: Average 80 million gallons per day and up to 500 million gallons during rain events
- Continued progress on 70 total projects: 50 completed, seven under construction, two in multiphase, seven in closeout and four in planning or design





NATURAL RESOURCES



Helping protect and preserve water supplies

Safeguarding the planet’s natural resources has long been an area of focus for Nuveen’s impact investment team, but perhaps no natural resource is more important than clean water. Our team has been investing in bonds that help preserve the quality of water sources for communities since the impact framework was launched in 2007. These outcomes are exemplified by our ownership of water bonds from Chicago and San Francisco, which grew to be world cities due in part to their location on clean, navigable waters that supported economic development and public health. That growth put inevitable pressure on the health of those waterways, requiring local governments to construct early and successful interventions such as sewers and water treatment. Now, those initial infrastructure investments struggle from age and climate change impacts, such as rising sea levels and increased rainfall intensity. We believe bonds issued to upgrade aging wastewater treatment systems and related infrastructure will help mitigate the financial cost and public health risk of major storm events, allowing the cities to sustainably adapt and continue to grow.

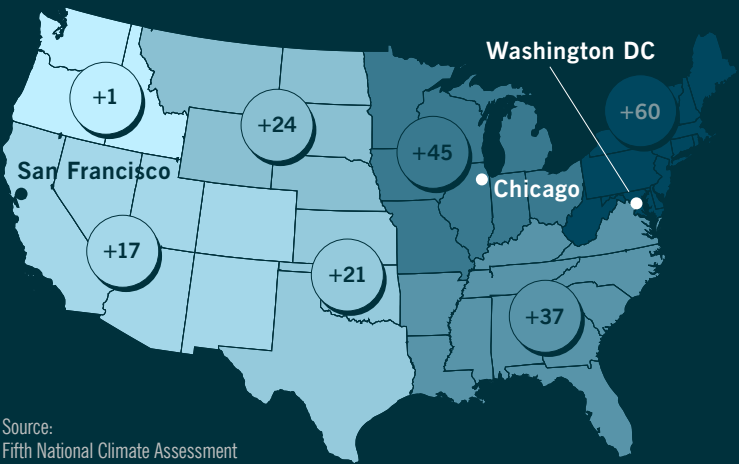
Worsening storm severity complicates municipal wastewater treatment

Many older U.S. cities operate combined sewer systems that use the same pipes to collect domestic sewage, industrial wastewater, and stormwater, carrying the flow to wastewater treatment facilities. During heavy rain events, combined sewer overflows (CSOs) occur when the stormwater and wastewater exceed the system’s capacity and are discharged untreated into local waterways.

Current temperatures and weather patterns are causing excessive rain events to happen more frequently, which can further overwhelm these antiquated systems, as detailed in the Data Deep Dive on [page 35](#).

CHANGE IN PRECIPITATION LEVELS ON THE HEAVIEST 1% OF DAYS

2021 versus 1958 (%)



Source:
Fifth National Climate Assessment

Repercussions from heavier rain events are numerous. Some are obvious to residents and local businesses as urban flooding disrupts daily life. Others are detrimental to public health as the overflow of untreated wastewater into watersheds like Lake Michigan and San Francisco Bay can have negative effects on water quality. These include the introduction of harmful pathogens, depletion of oxygen levels, spikes in nitrogen and phosphate levels, and detrimental

impacts on aquatic life, to name a few. In addition, overflow events can lead to complaints and consent decrees from the U.S. Environmental Protection Agency (EPA), followed by legally binding settlements that force municipalities to perform specific environmental cleanup or corrective actions. Not only are these events costly, but they often result in the need for municipalities to raise additional capital to redress the situations.

Underground tunnel systems are increasingly used to temporarily store untreated, combined storm and wastewater. By diverting the overflow from local waterways, these CSO tunnels help reduce water pollution, improve water quality, and ultimately support public health and environmental protection.

A history of prioritizing water quality in the Windy City

The City of Chicago has long been on the cutting edge of water treatment and stormwater management. The city’s Metropolitan Water Reclamation District of Greater Chicago (MWRD) was born out of a massive public health crisis caused by the region’s exponential growth in the 19th century. The MWRD is perhaps best known for reversing the flow of the Chicago and Calumet Rivers in the late 1800s, an engineering feat that prevented millions of gallons of industrial waste and wastewater from contaminating Lake Michigan, Chicago’s main source of drinking water.

Today, the MWRD serves more than five million people over nearly 900 square miles with wastewater treatment



**NATURAL
RESOURCES**



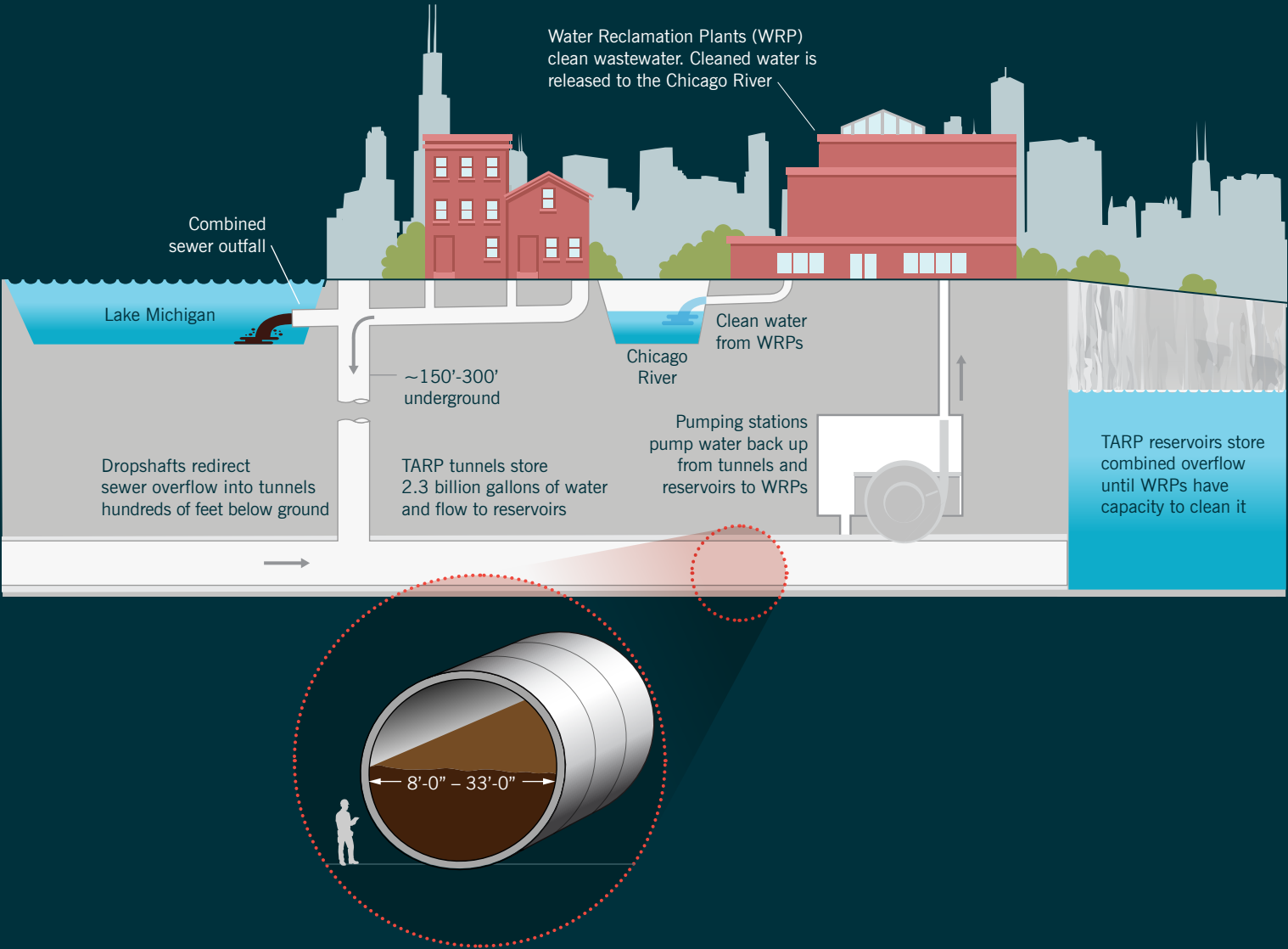
and stormwater management. Each year, the MWRD treats billions of gallons of wastewater at seven water reclamation plants. When necessary, MWRD captures and transports excess stormwater and sewage to prevent flooding and pollution, primarily through its Tunnel and Reservoir Plan (TARP). The TARP system consists of a series of tunnels and reservoirs that collect and isolate stormwaters until they can be properly treated and safely returned to the local water supply. Although expensive to maintain, the system significantly reduces overflow events and prevents the even-greater cost of upgrading treatment facilities to deal with excessive rainfall.

TARP has been constructed in two phases. Phase I was completed in 2006 and consists of 110 miles of large tunnels with a total storage capacity of 2.3 billion gallons. Phase II consists of three reservoirs, two of which have been completed and a third that is under construction. When complete in 2029, TARP will provide about 20 billion gallons of storage capacity, including more than 17.5 billion gallons of combined sewage capacity.

**Nuveen’s long-term investment in protecting
Chicago’s water supply**

MWRD’s operations are essential for continuing to preserve and protect Lake Michigan as the primary source of drinking water for residents of Chicago and its surrounding communities. In 2009, Nuveen purchased its first MWRD bond, issued to support a capital improvement plan for Cook County’s wastewater treatment and stormwater management system.

SIMPLIFIED TARP SYSTEM DIAGRAM

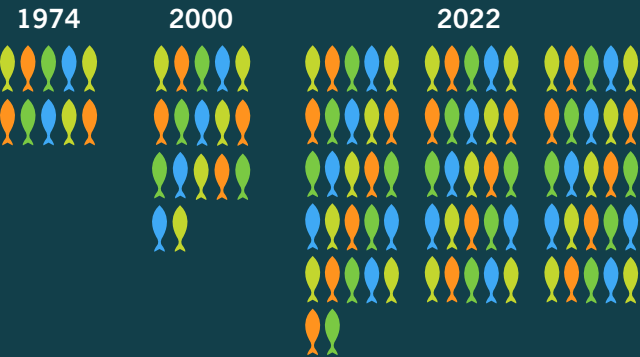




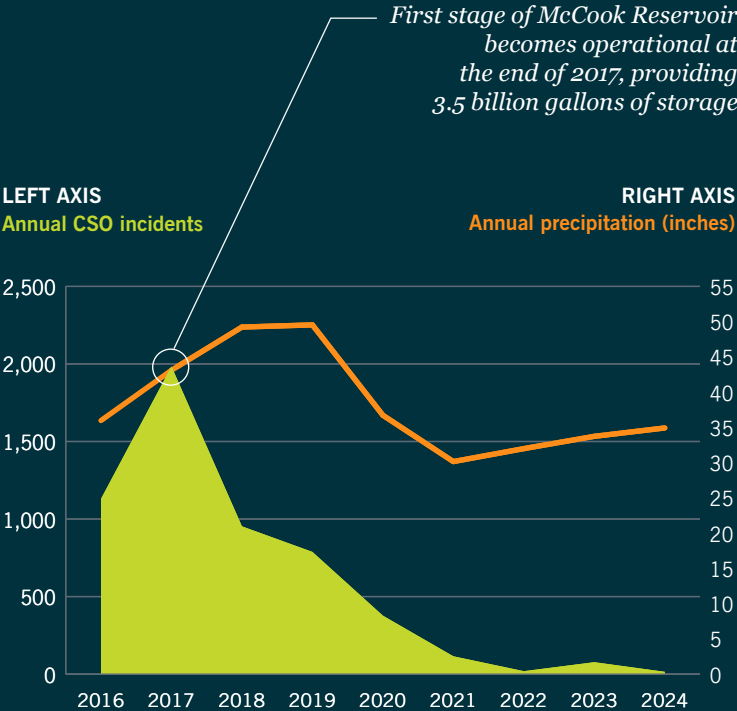
NATURAL
RESOURCES

MWRD has nearly \$3 billion of outstanding bonds, including \$473 million of labeled green issuance.⁶⁴ At least some portion of MWRD’s last four issuances have included green labeled bonds. We believe MWRD to be a strong credit supported primarily through property taxes levied on a wide and diverse tax base of urban and suburban properties across most of Cook County. (All of Chicago is contained within Cook County.) The district’s robust tax base and financial stability have resulted in a AAA credit rating from Fitch and AA+ from S&P (as of 30 Sep 2025).

Aquatic life has flourished, increasing to over 77 unique species in the Chicago Area Waterway System (CAWS) by 2022, a significant increase from the 10 species identified when monitoring began in the 1970s.



TARP RESERVOIR IMPROVEMENTS HAVE
MATERIALLY DRIVEN DOWN CSO INCIDENTS
DESPITE STEADY PRECIPITATION



Source: MWRD CSO Reports and National Weather Service



Chicago’s tunnel system is by far the largest intervention of this type in the United States but is relatively common. Cities including Atlanta, Boston and Milwaukee have built tunnels to address combined sewer overflow.

Nuveen invested in bonds to support Washington D.C.’s tunnel project, called the Clean Rivers Project. Started in 2005 with completion scheduled for 2030, it will reduce CSOs in the average year by 96% system-wide and roughly halve the risk of flooding in chronically impacted areas.⁶⁵ While tunnel projects extend multiple decades, individual segments come online in phases, benefiting the system well before the full system is constructed and operational.

Given the expected useful life of the city’s CSO tunnel system, DC Water issued a century bond to help finance construction costs. The 100 year maturity aligns with the long-lived nature of the Clean Rivers Project, which is designed to be an intervention that will benefit multiple generations.



NATURAL RESOURCES



Improving resiliency of the Bay Area’s wastewater system

San Francisco is one of a few cities in the western United States with a combined sewer system, which is a legacy of how early in the country’s history the northern California metropolis grew. Leaders in the region have long had the foresight to protect the water supply for Bay Area residents. The origin of the San Francisco Public Utilities Commission (SFPUC) dates to 1932, with a mission to provide high-quality, efficient and reliable water, power and wastewater treatment services to the city and parts of the surrounding Bay Area region. The SFPUC serves approximately 2.7 million residents and treats 80 million gallons per day and up to 500 million gallons during rain events.

The organization is a pioneer in the green bond market, issuing more than \$4 billion in Certified Climate Bonds since 2015. SFPUC was the first U.S. municipal issuer to certify a green bond under the water criteria of the Climate Bond Initiative (CBI) in 2016. The SFPUC’s environmental, social and governance (ESG) leadership and investment in resilient infrastructure are viewed as a credit strength by rating agencies and investors.

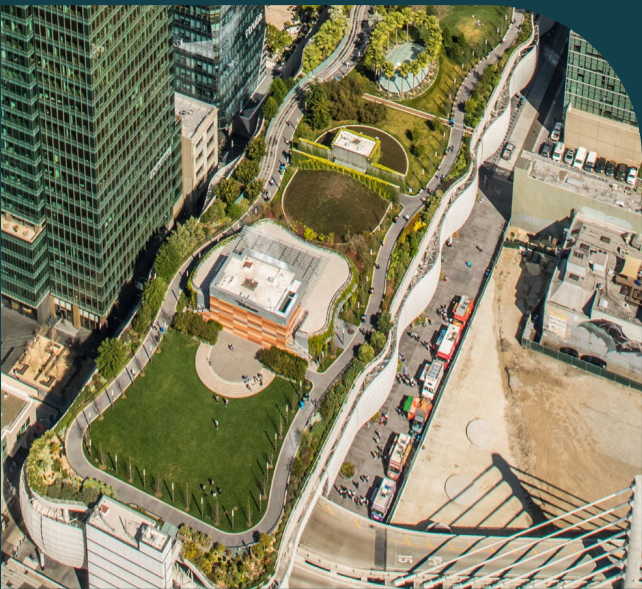
Funding green to protect blue

Nuveen has invested in eight SFPUC bonds since 2016, the most recent of which will be used to support the organization’s Sewer System Improvement Program (SSIP). As a combined utility providing multiple services, including water, sewer and electricity to the city and county, it is important to Nuveen for SFPUC to issue use of proceeds bonds that detail the capital plans. The labeled bonds carry the same credit ratings as others issued by SFPUC: Aa3 by Moody’s and AA from S&P (as of 30 Sep 2025).

The SSIP attempts to modernize the region’s combined sewer system and reduce CSO risk with prevention projects that can be deployed more quickly and cheaply than extensive tunnel infrastructure projects. While trapping CSOs or increasing wastewater treatment capacities is proven and effective, they are also expensive and can take decades to complete. Furthermore, tunnels are addressing the problem only after combined wastewater has already entered the system.

The term “green infrastructure” is applied to prevention projects designed to minimize the amount of water entering the system in the first place. While it won’t deliver the same sheer volume capacities as tunnels and reservoirs, these capital improvements are less costly and quicker to implement. Plus, they offer sustainability benefits that temporary storage of contaminated wastewater doesn’t. Like the grid hardening projects designed to make electricity transmission and infrastructure more resilient to wildfires, hurricanes, and other natural disasters, green infrastructure is an essential investment in risk mitigation.

Green roofs can be excellent sources of stormwater collection, in addition to reducing energy costs for the building and creating new green space for recreation and socializing. As of year-end 2024, Nuveen impact fixed income portfolios invested over \$41 million in San Francisco Community Facilities District bonds that helped finance the five acre Salesforce Transit Center Park.⁶⁶ Sitting atop the Transbay Transit Center in downtown San Francisco, the green roof is estimated to absorb and divert 50% of the storm runoff generated by a conventional roof.⁶⁷



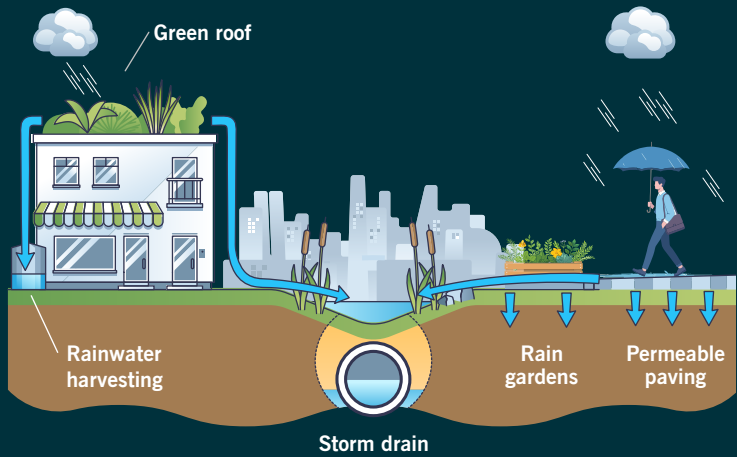


NATURAL RESOURCES

The overall goal of green infrastructure is to reduce the amount of impermeable surfaces, improve the capacity of nature to absorb and filter stormwater, and reduce flooding risk by slowing the flow of rainwater into sewer systems. Green infrastructure includes rain gardens, permeable pavement and green bulb-outs. Meanwhile, it introduces additional benefits, such as new green spaces in parks and neighborhoods for recreation or social gatherings, while green bulb-outs help calm traffic and improve pedestrian safety. SFPUC’s green infrastructure program spans all of the project types described above, and even includes rebates to residential customers for purchasing and installing rain barrels to prevent stormwater from entering the system and reduce fresh water use in yards and gardens.

Nuveen considers SFPUC’s green bond reporting to be among the very best for municipal issuers, especially among water enterprises. The SFPUC provides annual impact reports detailing how bond proceeds are used and the environmental benefits achieved. The organization’s reporting goes beyond allocations by category to discuss specific projects. One of the SFPUC’s recent green bond reports highlighted the Lake Merced Green Infrastructure project, which created bioretention planters (i.e., rain gardens) and other mitigation efforts to manage runoff in a two-acre area. Estimates call for this project to prevent one million gallons of stormwater from entering and stressing the stormwater system annually.

GREEN INFRASTRUCTURE



“It is challenging to measure exact impacts of many wastewater-related projects since they are often meant to prevent negative outcomes such as CSOs. Rain and storm events vary annually, so a year with particularly good or bad weather isn’t necessarily a reflection on the utility’s plans and operations. And measuring water quality in isolation isn’t a reliable KPI because many other factors besides overflows impact water quality. The risk to public health or cost of remediating an avoided overflow event is unknowable, since the event didn’t occur. Ultimately, we believe reporting from water bonds tends to understate the impact, since the damage wrought by a storm event is unmeasurable if avoided or mitigated.”

— Nuveen associate PM Adam Guerino

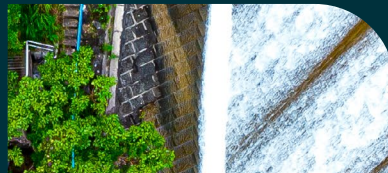


4

Data deep dive

Guaranteeing affordable mortgages via securitization ►

Increasing rainfall requires stormwater management ►



Guaranteeing affordable mortgages via securitization

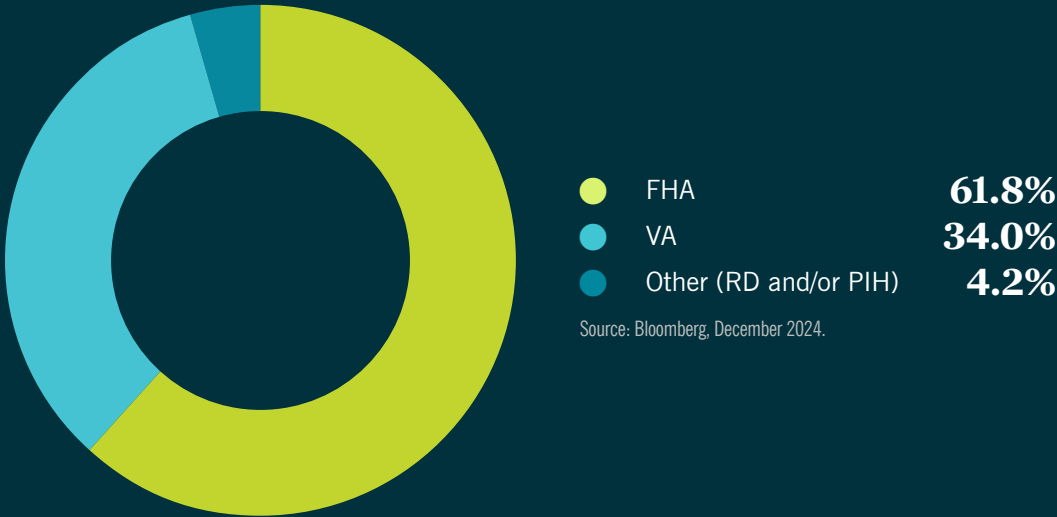
Housing affordability solutions span an array of approaches, each tailored to regional or country-specific dynamics. In Europe, efforts largely focus on financing new housing construction and the provision of affordable rental units, as limited housing stock remains a key driver of inequality. We describe two such programs on [pages 15-18](#).

In the United States, securitization, by lenders that are guaranteed* by federal agencies, enhances affordability relative to bank-retained mortgage lending. Ginnie Mae mortgage-backed securities (MBS), in particular, improve access to home loans and less expensive borrowing costs through guaranteed loans to specific borrowers.

Nuveen considers Ginnie Mae MBS to be impact securities given the agency’s singular focus on supporting affordable housing for underserved populations. The programs it guarantees, under Veteran Affairs (VA), Federal Housing Administration (FHA), Rural Development (RD), and Public and Indian Housing (PIH), are designed to expand access to borrowers who may not qualify for conventional financing.

Through client portfolios, we invested in 84 unique Ginnie Mae pools at year-end 2024, supporting nearly one million affordable mortgages. By capturing security-level data and aggregating it across our portfolios, we can provide more granular impact reporting.

Ginnie Mae MBS pools in Nuveen’s impact portfolios included 987,168 mortgages guaranteed across all 50 states, Puerto Rico, Guam and the U.S. Virgin Islands

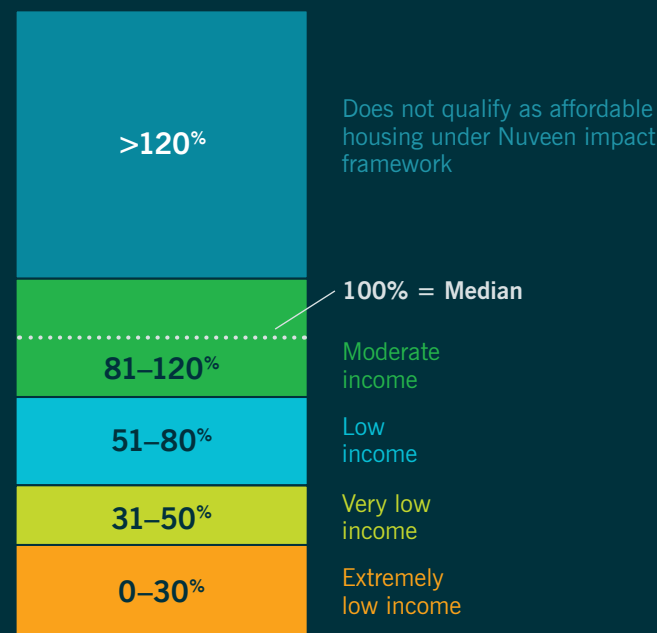


FHA loans are designed to help first-time buyers, those with less-than-ideal credit scores and borrowers with small down payments. VA loans support veterans and their families with lower mortgage rates and in many cases can reduce or eliminate the need for a down payment. RD loans, though a smaller share of our portfolio, are integral to the economy and quality of life in rural communities, often being the most affordable and readily available mortgage. These programs also allow for more flexible down-payment assistance, often allowing gift funds from sources outside of family including nonprofits or other government programs.

* Any guarantees are provided by the agency and not Nuveen.
For more information on their guarantees, please view https://www.ginniemae.gov/about_us/who_we_are/pages/funding_government_lending.aspx

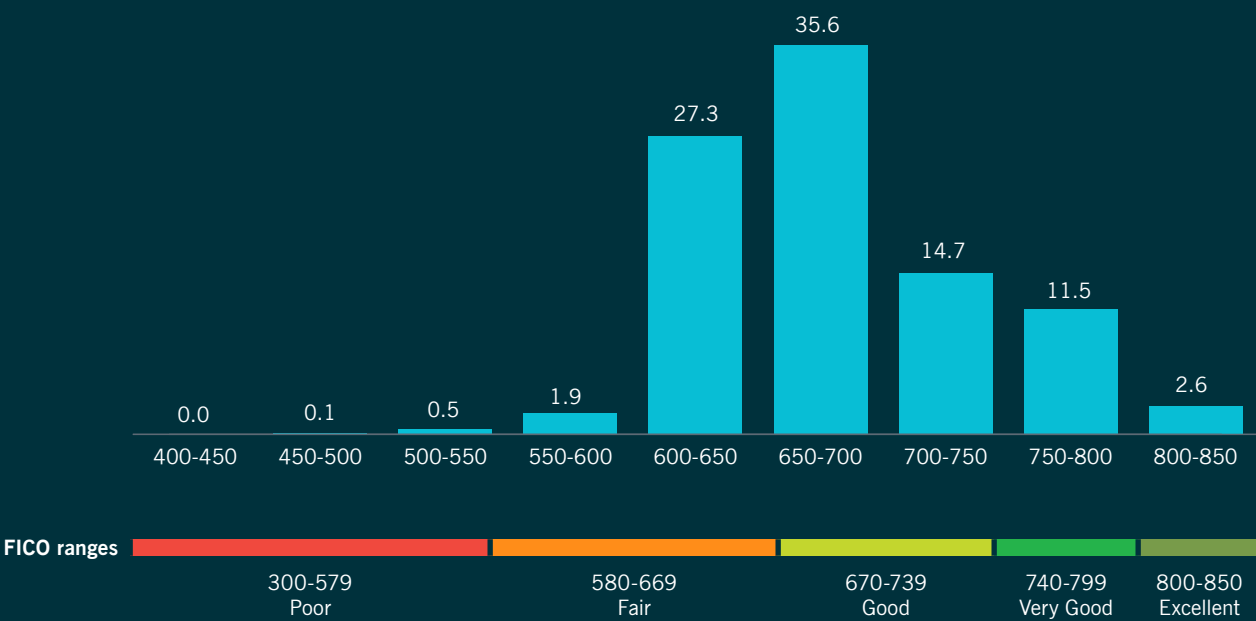
Guaranteeing affordable mortgages via securitization

AREA MEDIAN INCOME (AMI) BREAKOUTS



The credit profile and income levels of borrowers further illustrate how securitization expands access to affordable mortgage loans. With a federal guarantee on the repayment of principal and interest via a Ginnie Mae MBS, borrowers tap into a larger pool of available capital at levels below prevailing, broadly advertised mortgage rates. Having access to more favorable financing reduces the household debt burden and helps improve discretionary income and opportunities to save.

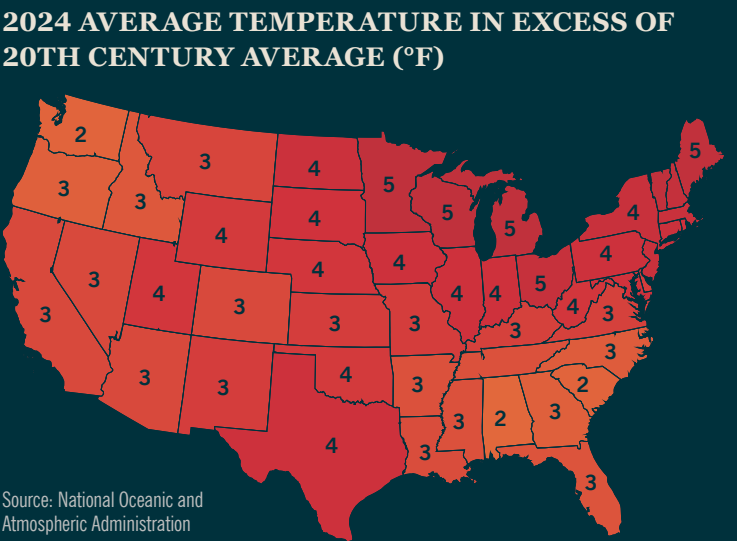
GINNIE MAE MBS POOLS FICO SCORE DISTRIBUTION (%)



Source: Bloomberg, December 2024

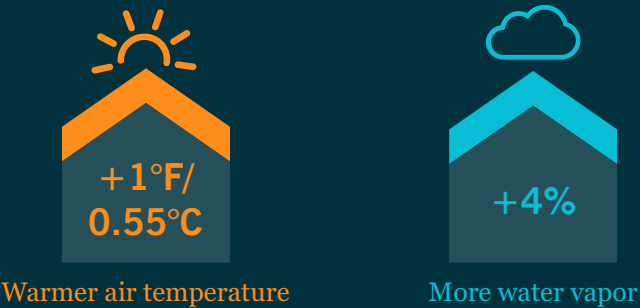
Conventional lenders typically require a minimum 620 FICO score, and offer the most favorable mortgage rates to borrowers in the Very Good and Excellent FICO score ranges.

Increasing rainfall requires stormwater management

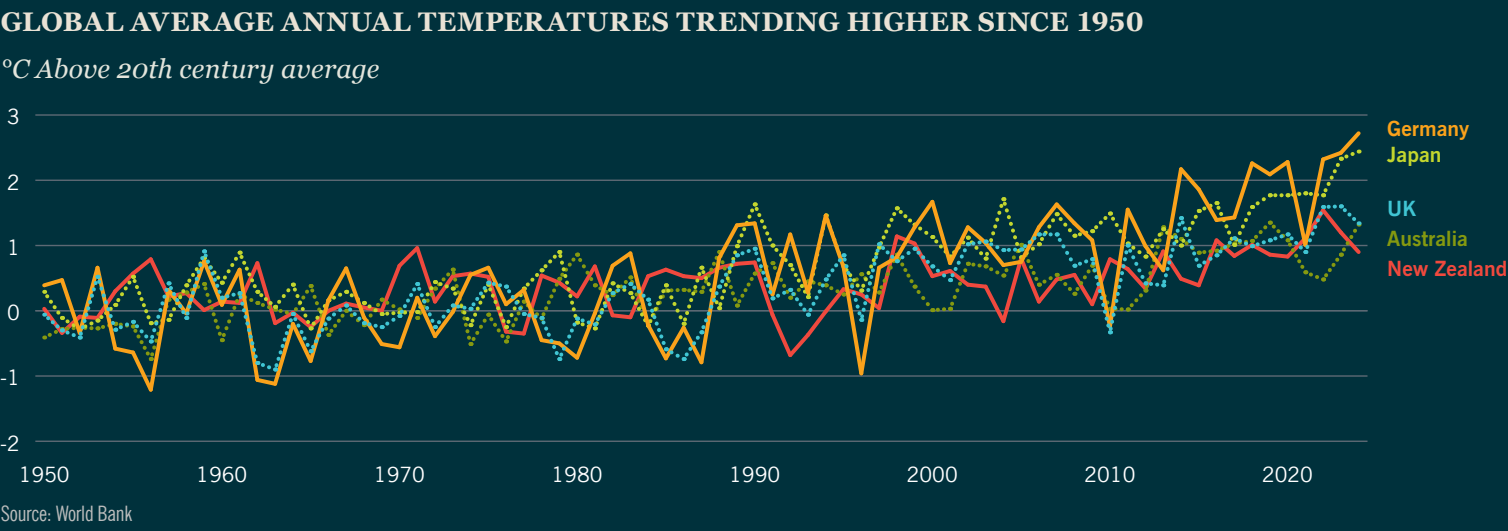
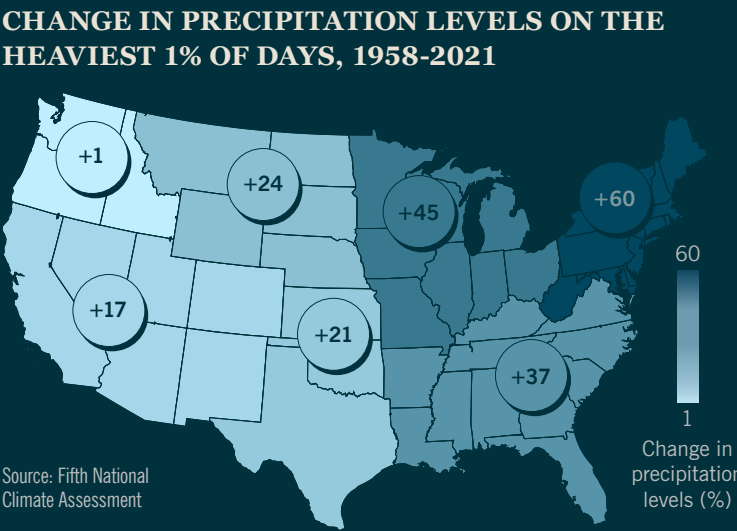


Severe rainstorms are increasingly common across the globe, a trend linked to the broader effects of climate change. The heaviest rainfall events have intensified across all major regions of the continental U.S. from 1958 to 2021, especially in the Northeast and Midwest regions.

2024 was the warmest year on record globally. As the atmosphere warms, it holds additional moisture, which becomes rain and snow. With a warmer climate, extreme precipitation events are projected to occur more often. Even in regions expected to receive less precipitation overall, it will come in heavier bursts. These intense storm and precipitation events are harder for the land to absorb, leading to more runoff and increased flood risks.



Aging urban infrastructure is poorly equipped to handle increasingly common extreme weather events. Severe floods endanger community health and safety, critical infrastructure and wider ecosystems. We believe financing the development of resilient infrastructure is essential to the economic prosperity, health and security of communities globally. Read more about how Nuveen is investing in these solutions on [pages 26-31](#).



5

Regional results

United States ▶

Americas (ex-US) ▶

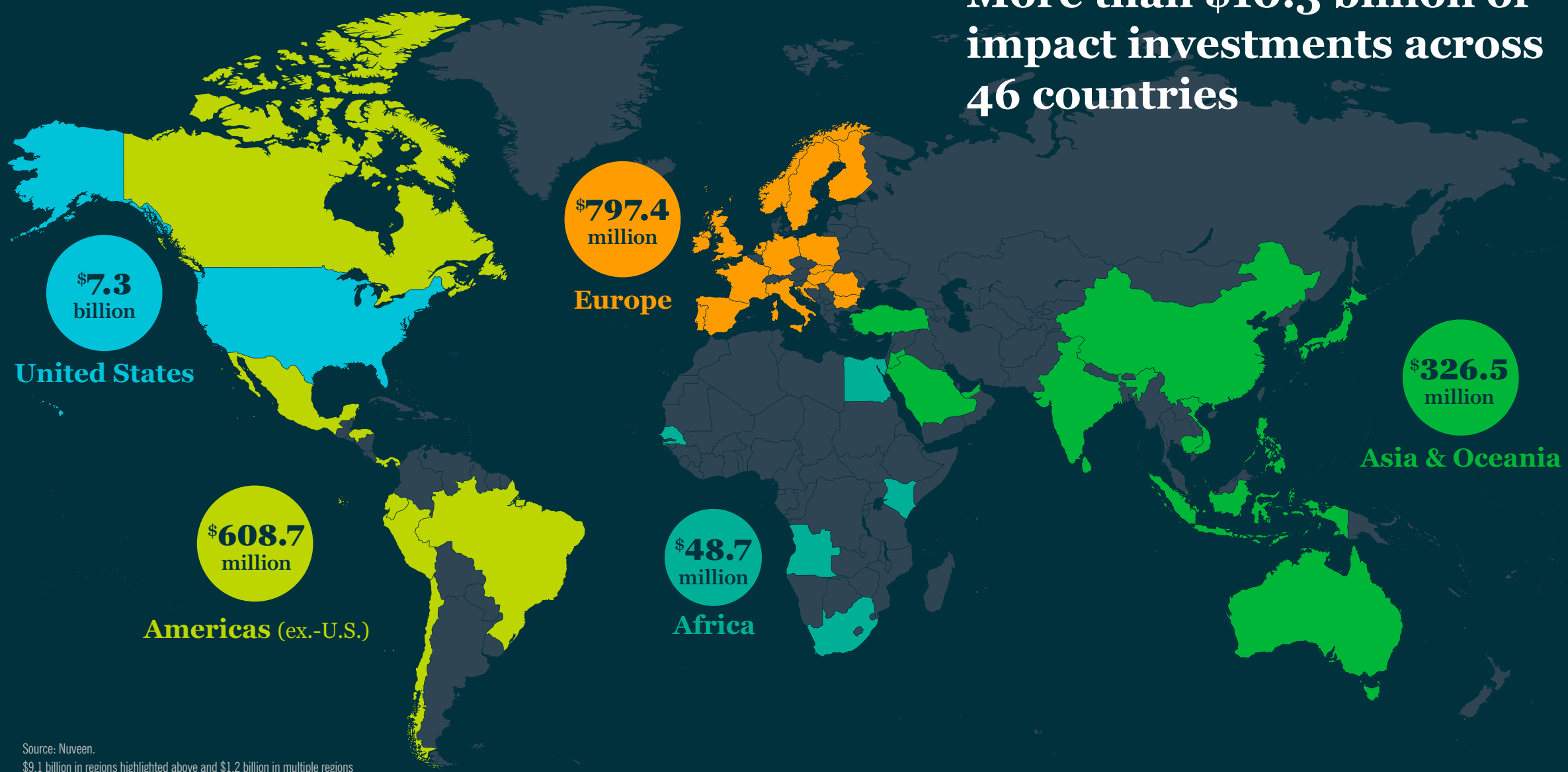
Europe ▶

Asia and Oceania ▶

Africa ▶

Making a global impact

More than \$10.3 billion of impact investments across 46 countries

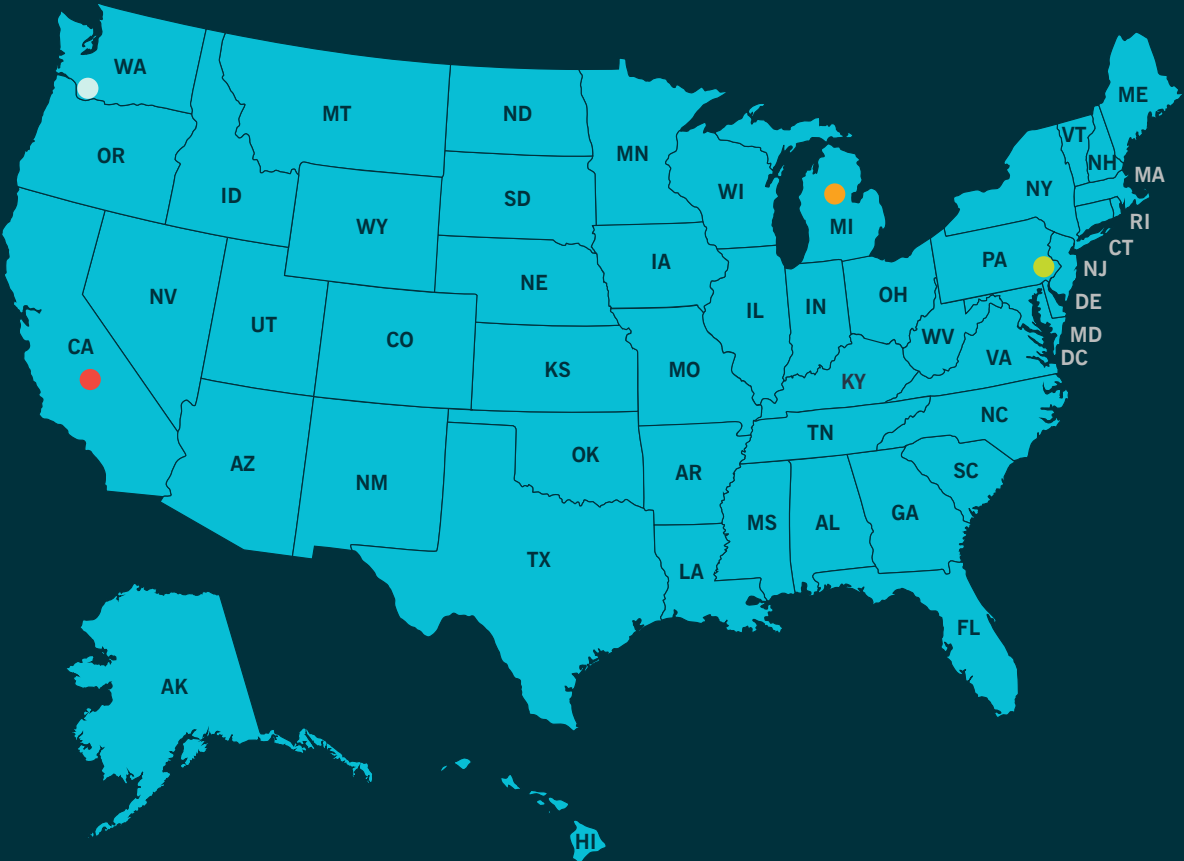


Source: Nuveen.
\$9.1 billion in regions highlighted above and \$1.2 billion in multiple regions or where exact locations are unknown. As of 31 Dec 2024.

United States: \$7.3 billion in impact investments financing projects in 50 states and the District of Columbia

EXAMPLES

Issuer	California Health Facilities Financing Authority	Redevelopment Authority of the City of Philadelphia	Continental Wind	Washington County, Oregon Clean Water Services
Locations	California	Pennsylvania	Michigan	Washington
Theme	Affordable housing	Community and economic development	Renewable energy and climate change	Natural resources
Use of proceeds	Permanent supportive housing	Neighborhood preservation programs	Finance wind energy projects	Environmental upgrades to water/sewer systems
Impact	Housing units built or supported: 712	People who benefited from access to basic products and services: 11,330	Total renewable energy capacity: 714 MW	Wastewater treated: 90.9 million gallons/day
SDG alignment				



Projects are financed in highlighted states.

2024 results from U.S.-based impact projects financed by the fixed income impact team include the following:

			
Affordable housing	Community and economic development	Renewable energy and climate change	Natural resources
Affordable mortgages guaranteed987,612	Full-time jobs created66,814 FTE	CO ₂ -equivalent emissions avoided62 million metric tons	Land conserved230,377 hectares
Access to housing including displacement, workforce, and affordability253,871 units	People who benefited from access to basic products and services14.1 million	Energy saved2.7 billion kWh	Land restored or sustainably managed749,722 hectares
Housing units built or supported at or below 80% AMI120,893 units	People who benefited from access to basic products and services (women)2,861	Total renewable energy capacity39,950 MW	Waste diverted from landfills2.9 million metric tons
Housing units built or supported at or below 60% AMI87,643 units	People reached through community programs16 million	Renewable energy generation66.7 million MWh annualized	People who benefited from clean water and wastewater projects16.6 million
Housing units built or supported at or below 30% AMI24,608 units	Farmers trained227	Daily riders on public transit4.2 million	Water delivered533.9 million gallons/day
		Battery capacity1,393 MW	Water saved828.7 million gallons
			Wastewater treated1,808 million gallons/day
			LEED Gold certified buildings50 buildings
			LEED Platinum certified buildings17 buildings

Americas (ex-U.S.): \$608.7 million in impact investments financing projects in 8 countries⁶⁸

EXAMPLES

Issuer	Fondo Mivivienda S.A.	Central American Bank for Economic Integration (CABEI)	Royal Bank of Canada	GPS Blue Financing
Locations	 Peru	 Honduras	 Canada	 Ecuador
Theme	Affordable housing	Community and economic development	Renewable energy and climate change	Natural resources
Use of Proceeds	Sustainable affordable housing	Finance employment generation	Finance renewable energy and green building projects	Marine conservation of the Galapagos
Impact	Housing units built or supported: 9,863	Full time jobs created: 94,767 FTE	Renewable energy generated: 85,250 MWh	Marine area conserved: 76,448 sq miles
SDG alignment	  	  	 	 



Projects are financed in highlighted countries.

2024 results from Americas (ex-U.S.)-based impact projects financed by the fixed income impact team include the following:



Affordable housing

Access to housing including displacement, workforce, and affordability	15,692 units
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Community and economic development

Full-time jobs created	94,767 FTE
People who benefited from access to basic products and services	251,005
People who benefited from access to basic products and services (women)	30,184
People reached through community programs	3,954



Renewable energy and climate change

CO ₂ -equivalent emissions avoided	8.5 million metric tons
Total renewable energy capacity	6,272 MW
Renewable energy generation	11.4 million MWh annualized
Energy saved	2.3 million KWh
Battery capacity	136 MW
Daily riders on public transit	1.2 million



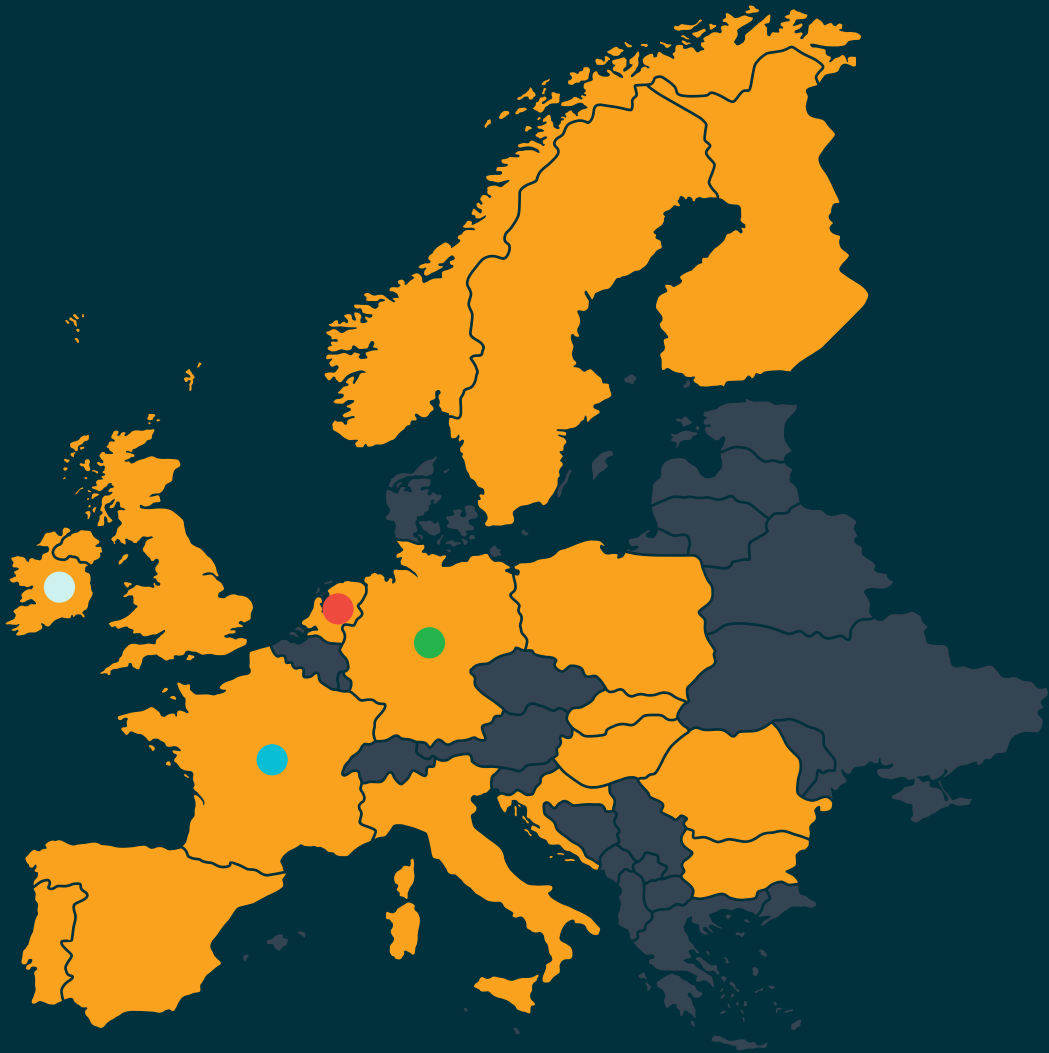
Natural resources

Marine area conserved	76,448 square miles
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Europe: \$797.4 million in impact investments financing projects in 17 countries⁶⁸

EXAMPLES

Issuer	BNG Bank N.V.	Credit Agricole	Kreditanstalt fuer Wiederaufbau (KfW)	Bank of Ireland Group
Locations	 Netherlands	 France	 Germany	 Ireland
Theme	Affordable housing	Community and economic development	Renewable energy and climate change	Natural resources
Use of proceeds	Affordable housing	Finance loans to small and midsize enterprises (SMEs) and vulnerable areas	Renewable energy projects	Finance green buildings and energy efficiency
Impact	Housing units built or supported: 218	Full-time jobs created: 14,631	Total renewable energy capacity: 174 MW	CO ₂ equivalent emissions avoided: 189,613 metric tons
SDG alignment	 	 	 	  



Projects are financed in highlighted countries.

2024 results from Europe-based impact projects financed by the fixed income impact team include the following:



Affordable housing

Access to housing including displacement, workforce, and affordability	16,191 units
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Community and economic development

People reached through community programs	271,593
Full-time jobs created	164,955 FTE
People who benefited from access to basic products & services	334,450



Renewable energy and climate change

CO ₂ -equivalent emissions avoided	32.8 million metric tons
Energy saved	1.5 billion kWh
Total renewable energy capacity	28,824.7 MW
Renewable energy generation	47.1 million MWh annualized



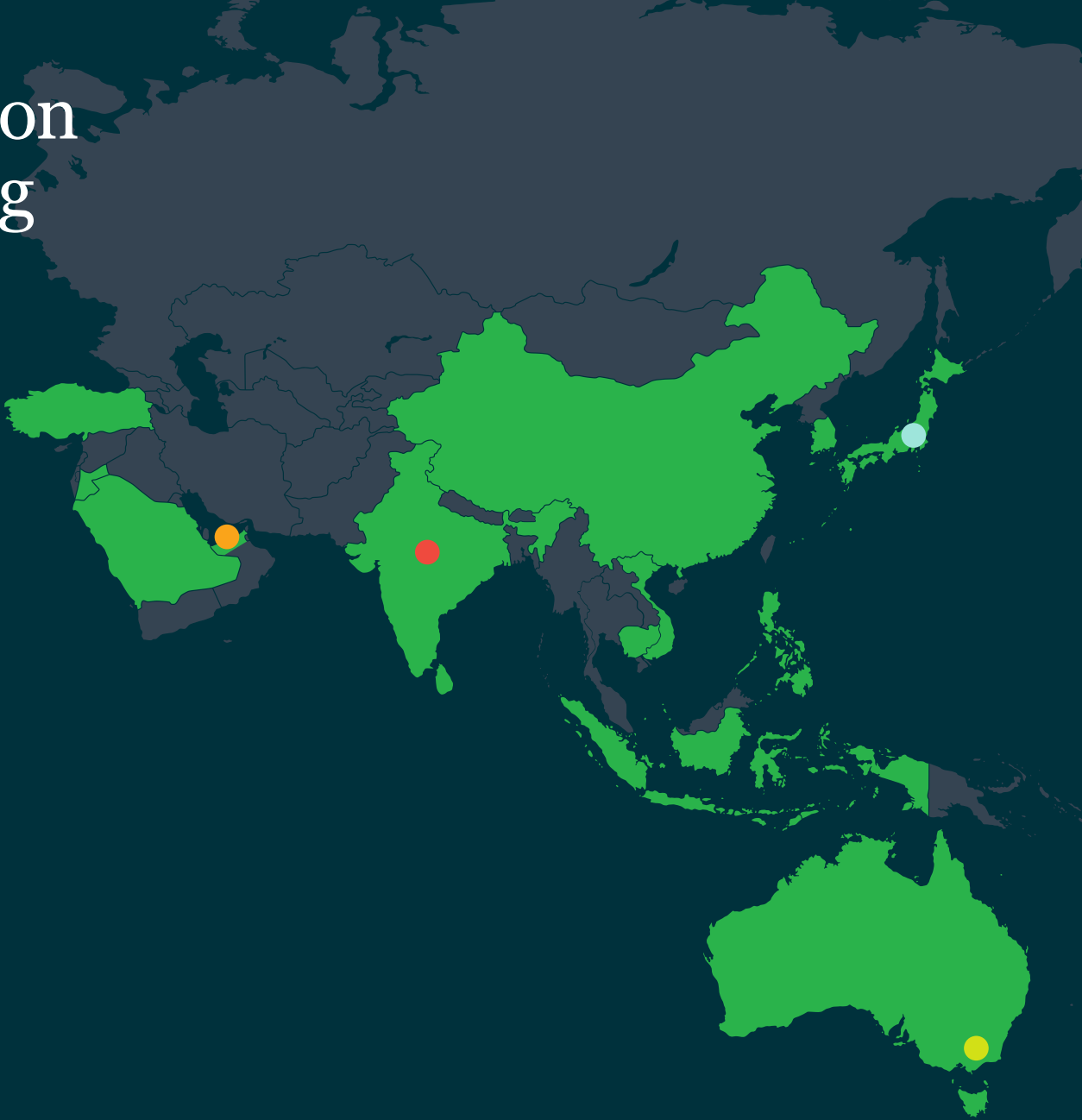
Natural resources

People who benefited from clean water and wastewater projects	576,275
Water saved	9.7 billion gallons
Wastewater treated	33.4 million gallons/day
Waste diverted from landfills	653,518 metric tons
LEED Platinum certified buildings	1
LEED Gold certified buildings	12
BREEAM certified Good, Very Good, Excellent, or Outstanding	18
Land restored or sustainably managed	9,400 hectares

Asia and Oceania: \$326.5 million in impact investments financing projects in 14 countries⁶⁸

EXAMPLES

Issuer	AID-India	Government of Victoria	Sweihaan PV Power Co	Japan Bank for International Cooperation
Locations	 India	 Australia	 United Arab Emirates	 Japan
Theme	Affordable housing	Community and economic development	Renewable energy and climate change	Natural resources
Use of proceeds	Affordable housing projects	Finance inclusive education, affordable housing, and green projects	Finance solar photovoltaic array facility	Finance renewable energy, energy efficiency, green building projects
Impact	Housing units built or supported: 41,754 units	Upgrades to schools serving students with disabilities: 32	Total renewable energy capacity: 1,177 MW	CO ₂ equivalent emissions avoided: 909,391 metric tons
SDG alignment	 	  	 	  



Projects are financed in highlighted countries.

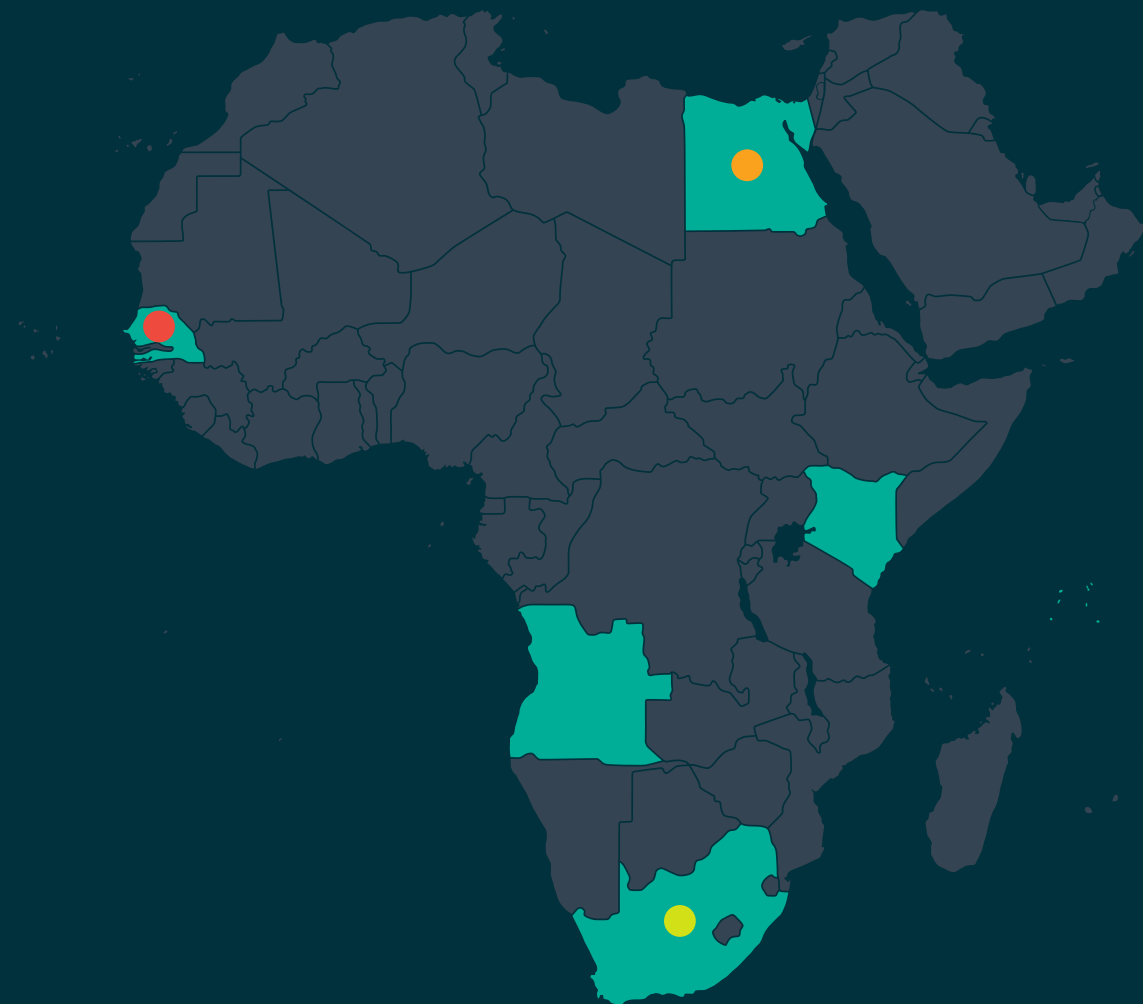
2024 results from Asia- and Oceania-based impact projects financed by the fixed income impact team include the following:

			
Affordable housing	Community and economic development	Renewable energy and climate change	Natural resources
Access to housing including displacement, workforce, and affordability	People who benefited from access to basic products and services	CO ₂ -equivalent emissions avoided	People who benefited from clean water and wastewater projects
60,857 units	508,035	19.8 million metric tons	6.2 million
	People who benefited from access to basic products and services (women)	Energy saved	Wastewater treated
	327,368	706.6 million kWh	74.6 million gallons/day
	Farmers trained	Total renewable energy capacity	Waste diverted from landfills
	23,825	18,666 MW	173,945 metric tons
	People reached through community programs	Renewable energy generation	Land restored or sustainably managed
	352,818	23.6 million MWh annualized	63,450 hectares
	People reached through community programs (women)	Battery capacity	LEED Gold Buildings
	352,818	207.6 MW	2
			LEED Platinum Buildings
			2

Africa: \$48.7 million in impact investments financing projects in 6 countries⁶⁸

EXAMPLES

Issuer	African Development Bank	The Arab Energy Fund	International Bank for Reconstruction and Development
Locations	Senegal	Egypt	South Africa
Theme	Community and economic development	Renewable energy and climate change	Natural resources
Use of proceeds	Sustainable food systems	Renewable energy projects	Rhino conservation projects
Impact	Full-time jobs created: 18,000	Total renewable energy capacity: 443 MW	Land restored or sustainably managed: 154,826 hectares
SDG alignment	2 ZERO HUNGER  3 GOOD HEALTH AND WELL-BEING  8 DECENT WORK AND ECONOMIC GROWTH 	7 AFFORDABLE AND CLEAN ENERGY  13 CLIMATE ACTION  11 SUSTAINABLE CITIES AND COMMUNITIES 	15 LIFE ON LAND  12 RESPONSIBLE CONSUMPTION AND PRODUCTION  8 DECENT WORK AND ECONOMIC GROWTH 



Projects are financed in highlighted countries.

2024 results from Africa-based impact projects financed by the fixed income impact team include the following:



Community and economic development

Farmers trained	23,825
Farmers trained (women)	23,825
Full-time jobs created	20,148



Renewable energy and climate change

Total renewable capacity	543.2 MW
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Natural resources

Marine area conserved	158,000 square miles
Land restored or sustainably managed	154,826 hectares

6

How we invest in a changing world

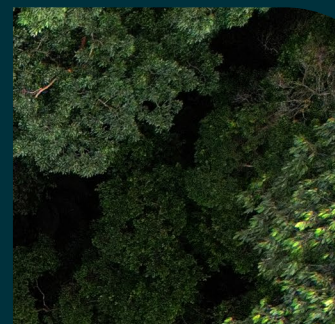
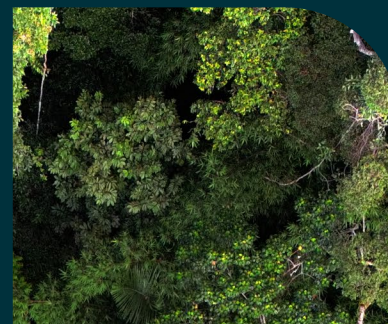
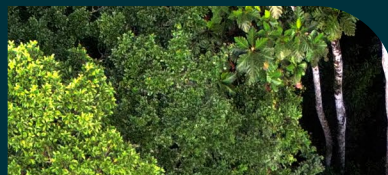
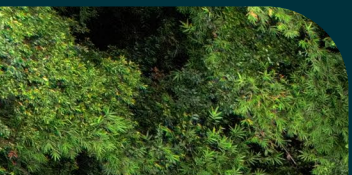
Measuring outcomes ▶

Operating Principles for Impact Management ▶

Engagement ▶

Data sources ▶

SDG alignment ▶





Measuring direct, real-world outcomes

Our impact investments finance positive social and environmental outcomes on six continents, help address critical global challenges, and transition economies and communities to a more sustainable future.

“High-conviction impact reporting requires more than data collection; it demands rigorous measurement, proactive issuer engagement, and an unwavering commitment to data quality.”

— Maximilian Hass Impact Analyst, Nuveen

Evaluating impact investing through the measurement and analysis of Key Performance Indicators (KPIs) — quantifiable measures of performance over time for a specific objective — is integral to our investment process. However, a lack of industry standardization and agreed-upon KPIs can make it challenging to measure and analyze impact data at the portfolio, strategy and platform levels. In light of these challenges, we continuously enhance our comprehensive approach to data capture and analysis in order to provide high-conviction impact reporting to our clients.

Each year, the Portfolio Management and Responsible Investing teams review our list of impact KPIs, adjusting for improved granularity and including additional indicators if necessary. The KPIs featured in this report constitute our core impact framework, prioritizing indicators that are both material to our impact objectives and consistently reported across issuers. This approach enables portfolio-level aggregation while preserving our ability to evaluate and compare impact across individual bonds and over time.

With KPIs finalized, our measurement process then moves to data collection. We source issuer impact reports annually from April through August, timing that aligns with when most issuers publish their impact reporting. During this process we note reports we deem best-in-class to provide issuers with examples

of the quality of reporting we expect. When an issuer’s reporting is unclear or falls short of our expectations, we proactively engage with them to improve disclosure quality and completeness.

Once impact reports have been collected, we begin the extraction process which involves capturing impact KPIs, standardizing data, tracking geographic information, and recording issuer disclosure types (security, project, program or issuer). In certain instances, we look to third-party data providers to fill gaps in impact data. Examples of outside data sources include the U.S. Energy Information Administration (EIA) to measure the energy generation of renewable energy investments, and the U.S. Environmental Protection Agency (EPA), whose widely accepted “AVoided Emissions and geneRation Tool” (AVERT) helps calculate an investment’s reduction in carbon dioxide emissions.

While disparate sources of impact data present challenges in assessing and quantifying how effectively investments are delivering on their intended impact objectives, this multi-step process is essential for maintaining data integrity. Our rigorous approach — from engaging with issuers during due diligence to improving data quality to filling in gaps using third-party providers — enables us to produce clear, transparent annual impact reports for our clients.

We are a founding signatory of the Operating Principles for Impact Management, with verified top-decile practices

BlueMark, an independent provider of impact verification services, verifies our impact practices bi-annually. In 2024, we received top scores for seven of eight operating principles, earning us the designation of practice leaders in the top 10% of verified managers.⁶⁹

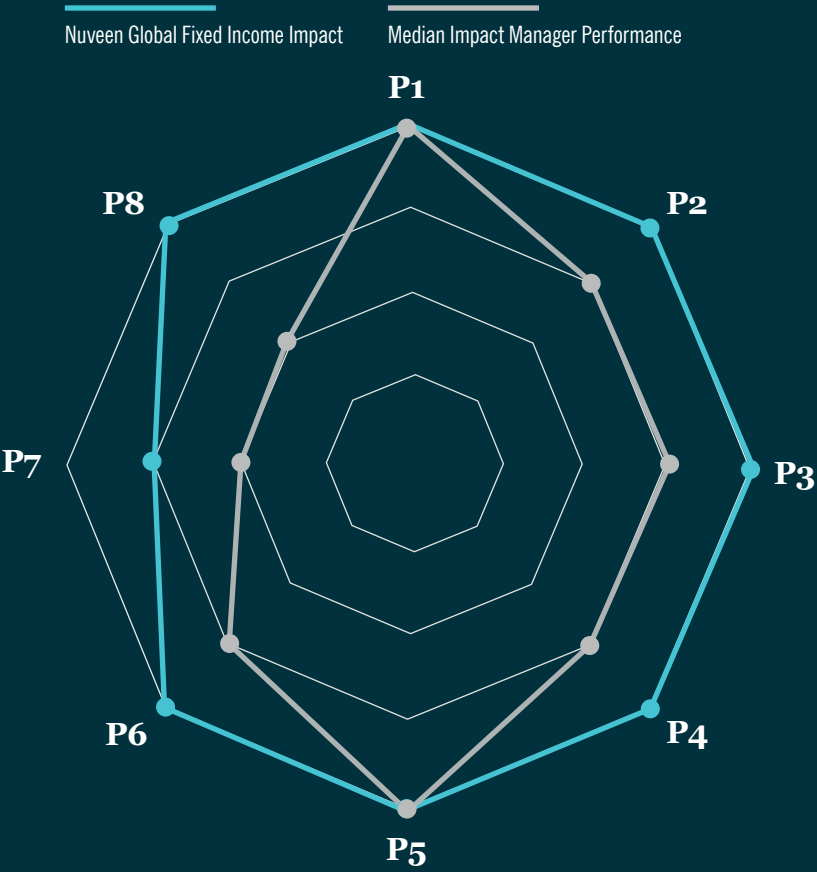
NUVEEN'S 2024 PERFORMANCE RATING

Advanced ●●●● High ●●● Moderate ●● Low ●

Operating principle	Nuveen's score
Set and manage a strategic impact intent in line with investment objectives.	P1 ●●●●●
	P2 ●●●●●
Assess the expected impacts of each investment, monitor those impacts, and contribute to growing those impacts over time.	P3 ●●●●●
	P4 ●●●●●
	P5 ●●●●●
Monitor the performance of each investment, adjust appropriately.	P6 ●●●●●
Ensure impact post-exit; review, document, and improve impact processes.	P7 ●●●●
	P8 ●●●●●

Source: Nuveen 2024 Results

NUVEEN'S PERFORMANCE COMPARED TO BLUEMARK DATASET



Engagement by the numbers: 2024

Regulatory standards for whether a security is “green,” “blue” or “impact” aligned are proliferating and sowing confusion. Stakeholder-focused investment solutions also lack consistency and standardization.

That’s why Nuveen engages with issuers and financial intermediaries. We seek to ensure our investments provide the appropriate incentives and accountability mechanisms to deliver on impact objectives and also show proof of concept to potential issuers and large institutional investors that accessing public fixed income markets can be a powerful way to finance innovative impact opportunities.

- Ongoing dialogue with issuers, rating agencies, and industry experts empowers our portfolio managers and analysts to collaborate and influence use of proceeds, impact reporting standards and deal structures, and help shape what we believe to be best-in-class ESG-related business practices.
- Our relationship with issuers and underwriters paved the way for first-of-their-kind environmental and social transactions in public markets, helping to enable subsequent deals to come to market. In 2024, the team was lead order on several innovative transactions, as featured in the callout box on this page.
- Nuveen’s fixed income impact team conducted 117 engagement meetings in 2024, covering the key topics detailed at right.

Nuveen was lead order on innovative bond issuances throughout 2024

- May:** LEED Platinum new construction residential CMBS, Sven
- Jun:** Sustainable public transport in Emerging Markets: Dominican Republic monorail
- Jul:** Securitized financing for wildfire hardening projects: PG&E Recovery Fund
- Aug:** Amazon Reforestation-linked outcome bond: World Bank
- Dec:** Debt for nature swap: Amazon Conservation Bond (Ecuador)



- Green bond structures **47%**
- Social bond structures **7%**
- Sustainability bond structures **21%**
- Issuer updates **14%**
- Non-deal roadshows **9%**
- Novel frameworks **2%**

Source: Nuveen

Measuring impact: methodology and data collection

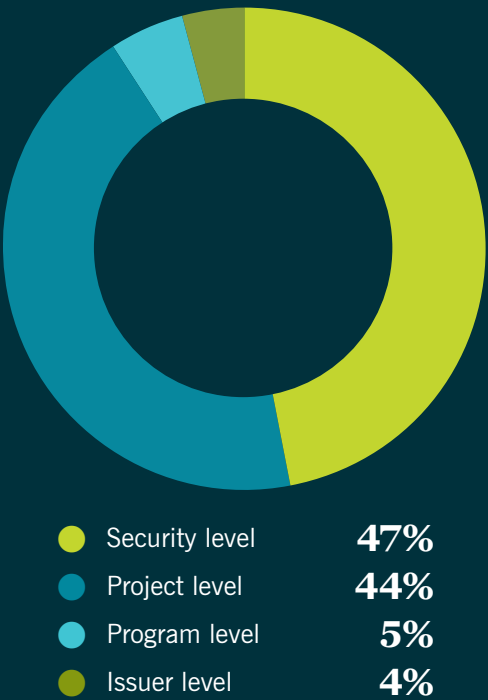
On an annual basis, we collect social and environmental impact data directly from impact reports and other issuer disclosures. Our goal is to collect the most relevant and granular impact data related to projects and programs financed by the bonds held in client portfolios.

We extract metrics related to each impact theme for activities in the prior calendar year and aggregate the most commonly reported metrics for this report.

It is important to note that we collect and report on impact for the entirety of the investments and/or the related project, not just the impact associated with Nuveen clients’ capital alone. The reason we take this approach is because we do not consistently have access to total project costs. We know the percentage of each issuance we hold, but the amount issued may not reflect the total capital required to fund a specific project or program.

- 1. **Security-level data**
sourced from bond-level impact reports for specific securities; **most preferred**
- 2. **Project-level data**
sourced from project factsheets or other reports tied to a single project
- 3. **Program-level data**
sourced from annual reports for specific programs run by the issuer
- 4. **Issuer-level data**
sourced from annual reports covering all activities of the issuer; **least preferred**

SOURCES OF 2024 IMPACT DATA
BY DISCLOSURE TYPE



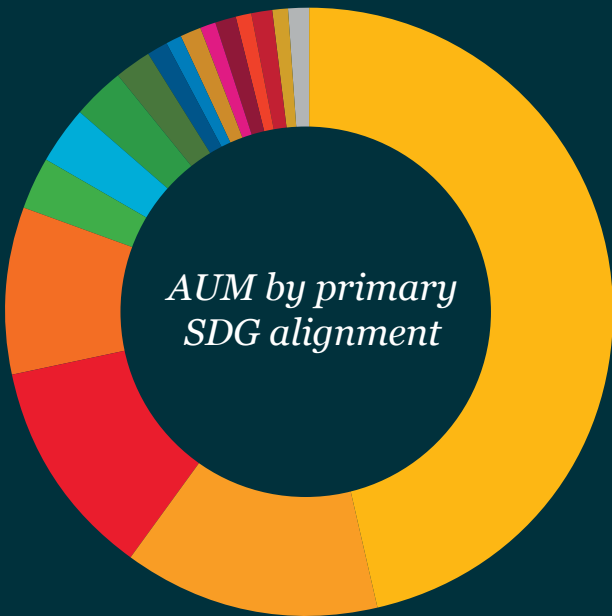
Source: Nuveen

Aligning closely with the Sustainable Development Goals (SDGs)

In 2015, the Sustainable Development Goals were developed and agreed to by all 193 member states of the United Nations. The 17 goals outline a collective vision of what is needed for sustainable growth and development globally by 2030.

The impact objectives and four impact themes of our global fixed income strategies predate the development and adoption of the SDGs. However, given the global relevance and increasing stakeholder interest in understanding investors’ contribution and alignment to these global goals, we expanded our impact framework in 2016 to clearly communicate and demonstrate how our approach aligns to the SDGs.

To do this, we developed a set of evidence-based logic models for Nuveen’s four impact themes and expected outcomes, and how they map to specific SDG targets underlying the 17 goals. The logic models focus on the most direct impacts of the investments. For example, we hold bonds that expand access to financial services for underserved people. SDG targets 8.3 and 9.3 explicitly address access to finance, so in our reporting we identify those bonds as contributing to SDGs 8 and 9. While there may be additional, indirect outcomes that result from an individual or community having increased access to high-quality financial services, we do not claim contribution to additional SDGs for those bonds.



SDG alignment		AUM by primary SDG alignment ⁷⁰	Number of impact holdings ⁷¹
7	Affordable & Clean Energy	48%	589
11	Sustainable Cities & Communities	14%	253
1	No Poverty	12%	231
9	Industry, Innovation, & Infrastructure	9%	89
15	Life On Land	3%	34
6	Clean Water & Sanitation	3%	48
3	Good Health & Well-being	3%	34
13	Climate Action	2%	476
16	Peace, Justice, & Strong Institutions	1%	3
14	Life Below Water	1%	10
12	Responsible Consumption & Production	1%	212
10	Reduced Inequalities	1%	24
8	Decent Work & Economic Growth	1%	58
5	Gender Equality	1%	13
4	Quality Education	1%	17
2	Zero Hunger	1%	10
SDG Not Yet Assigned*		1%	10

Source: Nuveen.
As of 31 Dec 2024. Holdings are subject to change.

For more information, please visit us at nuveen.com

Endnotes

1 <https://www.un.org/en/climatechange/raising-ambition/renewable-energy#:~:text=Renewable%20energy%20is%20cheaper&text=Prices%20for%20renewable%20energy%20technologies,helping%20to%20mitigate%20climate%20change>.

2 Nuveen 2025 Global Institutional Investor Survey.

3 Nuveen Global Fixed Income Impact AUM as of 12/31/24

4 COP16 <https://www.cbd.int/conferences/cop-16>

5 <https://in-cyprus.philenews.com/insider/cyprus-housing-census-2021-urbanisation-trends-population-data/>

6 Sum of women beneficiaries explicitly indicated in impact reporting. Not all impact reporting details demographic data.

7 Belgium Population: 11.8 million. https://european-union.europa.eu/principles-countries-history/eu-countries/belgium_en

8 U.S. Populations in 2020 Census: State Populations: <https://www.census.gov/library/visualizations/interactive/2020-population-and-housing-state-data.html> City & Town Populations: <https://www.census.gov/data/tables/time-series/demo/popest/2020s-total-cities-and-towns.html>

9 CO₂ and Energy Equivalencies: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

10 NY Central Park Area: 340 hectares <https://www.britannica.com/place/Central-Park-New-York-City>

11 BREEAM certified buildings by level: 4 good, 4 very good, 10 excellent, 1 outstanding

12 LEED certified buildings by level: 69 gold, 22 platinum

13 Population of Mumbai: 22.1 million. <https://worldpopulationreview.com/cities/india/mumbai>

14 Average US households use approximately 300 gallons of water per day (109,500 gallons per year). <https://www.epa.gov/watersense/how-we-use-water>

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23 Statutory homelessness in England: financial year 2023-24. Accredited official statistics, Ministry of Housing, Communities & Local Government, 30 Oct 2024. <https://www.gov.uk/government/statistics/statutory-homelessness-in-england-financial-year-2023-24/statutory-homelessness-in-england-financial-year-2023-24>

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26 “Homelessness in Northern Ireland: do one in 33 local people not have a home of their own?,” FactCheck NI, 18 Dec 2024. <https://factcheckni.org/articles/homelessness-in-northern-ireland-do-one-in-33-local-people-not-have-a-home-of-their-own/>

27 “Places for People <https://www.placesforpeople.co.uk/about-us/who-we-are/what-we-do/>

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30 <https://www.gov.uk/government/news/planning-overhaul-to-speed-up-and-simplify-local-plans>

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68 Highlighted country information was determined by issuer reporting or country of risk information.

69 BlueMark’s Practice leaderboard was created to highlight impact investors with best-in-class impact management practices. To earn a spot on the leaderboard, verified investors must have received an Advanced score on four practice areas (Impact Objectives, Impact Due Diligence, ESG Risk Management, and Impact Monitoring) and a rating of High or Above on the remaining four (Portfolio-level Impact Management, Investor Contribution, Impact at Exit, and Impact Review). This reflects the top quartile scores in the 2024 version of the Practice Benchmark. For more information, visit: <https://bluemark.co/practice-leaderboard/>

70 Based on the market value of impact holdings by their primary SDG alignment. Each holding has one “primary” SDG.

71 Total count of SDG alignment across all impact holdings. An individual impact holding could be aligned with up to three SDGs: primary SDG, secondary SDG and tertiary SDG based on our proprietary impact framework. Therefore, the total count of SDGs is greater than the number of impact holdings.

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