REAL ESTATE

Carbon Neutrality in Real Estate:

Strategies for Success

November 17, 2021

As communities across the world continue to grapple with the effects of climate change, climate action is surfacing as a priority topic of concern for the real estate industry. A growing consensus from many large and small companies is spurring an unprecedented wave of carbon neutrality pledges.

MetLife Investment Management

In our previous report, we provided an introduction to carbon neutrality, including industry terms, frameworks, and the implications for the real estate industry. We highlighted the recent uptick in carbon neutrality pledges made by companies and covered the implications of these pledges on the real estate sector. This report will expand from that premise to examine how real estate investors are working to achieve carbon neutrality through goals, pledges, and the importance of defining comprehensive scopes and timelines. After this report, the third report in the series will focus on emerging domestic and international legislation and regulations in relation to carbon neutrality. The fourth report, in early 2022, will focus on a review of, and response to, the COP 26 summit in Glasgow.

> "Unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach."
>
> —**Intergovernmental Panel on Climate Change (IPCC),** August 9, 2021[1]

Embarking on the Journey

Strategy 1: Commit to Carbon Neutrality

At its fundamental level, a commitment to carbon neutrality is a commitment toward achieving net-zero carbon dioxide emissions. The Intergovernmental Panel on Climate Change (IPCC) defines net zero CO_2 emissions as being achieved when carbon dioxide emissions due to human activity are balanced globally by carbon dioxide removals via human intervention over a specified period.[2] While they may be defined differently,[3] both net zero and carbon neutrality goals aim to eliminate and/or offset carbon emissions—whether from an activity, a building, an investment fund, a company, a city, or an entire country.

For the real estate industry, this has several implications. Pledging carbon neutrality requires leaving behind the 'business as usual' mentality and identifying tried and true as well as innovative ways to decarbonize while investing in new technologies. Given the recent focus on carbon neutrality, this type of transformation is best achieved as an iterative process; a journey rather than a one-size-fits-all solution. In general, common steps involved in a carbon neutrality commitment entail:

1. **Defining the boundaries (or scope) of the program**
2. **Measuring the emissions associated with the established scope**
3. **Setting goals to reduce emissions**
4. **Implementing programs that reduce emissions**
5. **Communicating the goals and results to relevant stakeholders**

As the journey toward carbon neutrality progresses, these steps are repeated multiple times over the years to continually monitor, assess, and adjust carbon reduction initiatives and strategies to try and maximize results.

From the investor perspective, pledging to go carbon neutral may provide landlords with a competitive advantage through sustainability leadership and alignment with carbon neutrality pledges from tenants. It can additionally save money on operational costs while helping protect from current or potential legislation pertaining to carbon—such as the Sustainable Finance Disclosure Regulation (SFDR) in Europe and municipal regulations limiting buildings' carbon emissions in a growing number of U.S. cities. Perhaps most importantly, it can help insulate assets from future devaluation while increasing the portfolio's resiliency to an uncertain future. The next paper in this series will focus more on the risks associated with the changing regulations and laws associated with an asset's carbon footprint, and how this may affect cash flows through potential fines or penalties.

Setting the Boundaries – Establishing the scope

Strategy 2: Determine Scope

The first step in embarking on a carbon neutrality journey is to identify what types of carbon emissions will be measured and included in reduction plans. For the real estate industry, carbon emissions are primarily either **operational or embodied**. Operational emissions are attributed to the sources and processes required to operate the property on a daily basis. Embodied carbon, which was discussed in the first report, consists of all the emissions associated with building construction, including those that arise from extracting, transporting, manufacturing, and installing building materials on site, as well as the end-of-life emissions associated with disposing of the materials when the building is demolished.

In addition, the Greenhouse Gas (GHG) Protocol, a widely accepted and internationally recognized emissions reporting and accounting standard, categorizes greenhouse gas emissions from any company into three groups or 'Scopes':

- **Scope 1** represents direct emissions that are emitted onsite from the landlord, such as from a natural gas furnace, etc.
- **Scope 2** covers indirect emissions from the generation of purchased electricity, steam, heating and cooling, which is generated off site, yet consumed by the reporting entity.
- **Scope 3** includes all other indirect emissions that occur in the value chain.

Figure 1 illustrates the types of scopes with examples of each and how they relate to the reporting company's business activities.

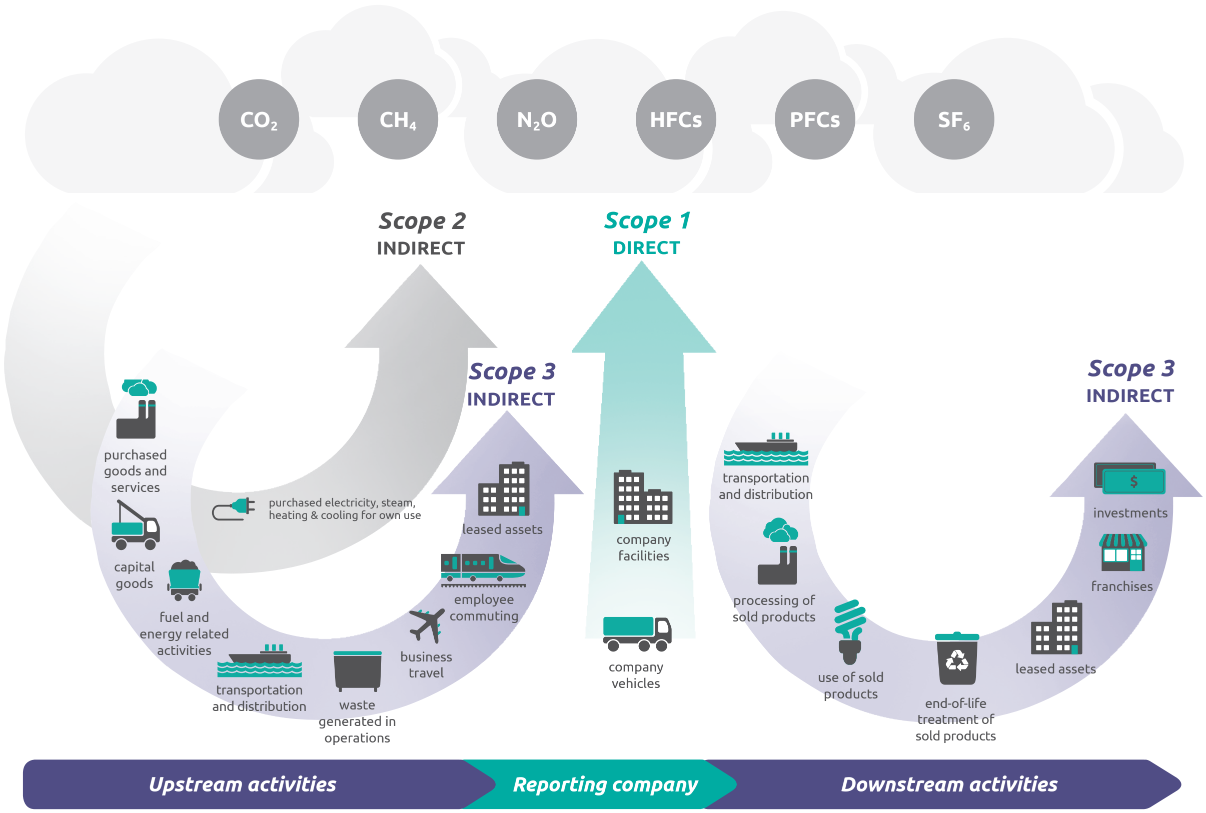


Figure 1: GHG Protocol, WRI/WBCSD Corporate Value Chain (Scope 3) Accounting and Reporting Standard

Once a reporting entity considers its carbon impacts and has a better understanding of their scopes, boundaries can be established to achieve impactful targets, such as carbon neutrality. Some real estate investors only include operational emissions in their carbon targets, which would include Scope 1 and Scope 2. A second option would also include tenant emissions (Scope 3) from tenants operating in the building. Note that both these options are representative of only operational emissions. A sophisticated and even more aggressive approach would include also accounting for embodied carbon. Embodied carbon cannot be reduced after construction, so to eliminate these emissions relies on carbon removal mechanisms, such as the purchase of carbon offsets. Real estate developers can reduce embodied carbon, but that first requires accounting for them during the planning process.

> "The construction, maintenance and ongoing energy consumption of properties make up the majority share of the real estate sector's overall carbon emissions profile. Carbon targets should now be prioritizing these emissions streams."
>
> —**GRESB (formerly the Global Real Estate Sustainability Benchmark)** Nov. 2018[4]

In commercial real estate, a primary Scope 3 source of emissions are the building's tenants, their activities, and their energy use. In the GHG Protocol, these are covered under category 13, "Downstream Leased Assets". Gathering emissions data from tenant-controlled areas is not always as easy as one might think, and it often requires green leasing clauses, cooperation from local utilities, and tailored operating agreements that can be put in place to aid in obtaining tenant data. **Figure 2** gives an example of potential established boundaries a landlord could select when formulating the carbon reduction plan.

Figure 2

Operational emissions controlled by Landlord (Scope 1 and Scope 2)	**Landlord Operational Emissions + Tenant Emissions (Scope 3)**	**Operational and Embodied Emissions (for all Scopes)**

Landlords who are committed to carbon neutrality can serve as a resource for their tenants, sharing tips and tools for carbon reduction. For example, MIM sometimes recommends its U.S. office tenants utilize ENERGY STAR® Portfolio Manager® to measure, track, and compare their own energy and water use. The ENERGY STAR Tenant Space recognition is a program provided by the U.S. Environmental Protection Agency (EPA) that can be used to demonstrate that a tenant space has met energy-efficient design criteria. It also offers free resources for office tenants, residential tenants, and others for reducing their energy and carbon emissions. Commercial tenants using ENERGY STAR Portfolio Manager are also able to easily share their energy and water data with their landlord, facilitating the emissions data collection process for the real estate investor.

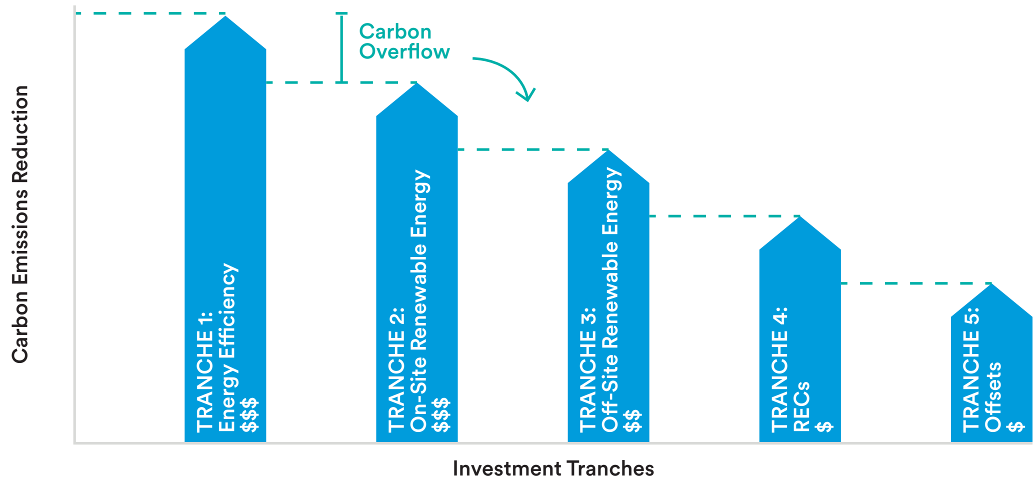
MetLife Investment Management's Journey

Strategy 3: Develop a Plan

MetLife Investment Management's (MIM) Real Estate Group's own response to the intensifying call for climate action was the implementation of the MetZero™ program, a customized approach that was developed to reduce carbon in equity real estate portfolios. As **Figure 3** illustrates, MetZero™ utilizes the "Carbon Cascade" approach of tackling operational emission reduction, first and foremost. Reducing energy use in real estate portfolios saves money and reduces operational emissions. The next tranches of renewable energy through solar panels and power purchase agreements can further reduce operational emissions and lower exposure to utility price spikes.

Figure 3

MetZero "Carbon Cascade"



Source: RE Tech Advisors

This chart is intended to help illustrate certain investment concepts/processes and is not intended to represent actual past, or expected future, performance of any security, investment product or investment strategy.

When the MetZero™ program was developed, careful consideration was paid to setting the boundaries of the carbon emission reduction program. MIM is committed to including all direct Scope 1 and Scope 2 GHG emissions associated with landlord operations of the building. In some portfolios, we also include emissions from tenant-controlled areas (Scope 3). MIM understands there are challenges associated with obtaining data from tenant-controlled areas and has developed tools to enable this process by engaging property managers and utilities, developing green-lease clauses, upgrading meters, and proactively collaborating with tenants. Looking forward, MIM is currently researching and reviewing options to effectively include embodied emissions within the parameters of the MetZero™ program.

Making it Happen – Reducing Emissions

Strategy 4: Implement a Plan

Once the parameters and the carbon neutrality plan have been established, efforts must be made to begin ameliorating or eradicating carbon emissions. For the real estate industry, MIM believes implementing energy efficiency measures, such as motion sensor lights and smart HVAC systems, is the most effective mode of reducing carbon emissions, while lowering energy costs 29% on average[5]. The next most effective measure is procuring renewable energy. Some property owners invest in rooftop solar panels to generate renewable energy on site, which can be converted to an additional source of revenue for the landlords if they sell the on-site energy to the tenants. Rooftop solar also has the benefit of generating energy during peak daytime hours, especially for office and retail installations. Other property owners purchase renewable energy from their local utility, which may use solar or wind energy installations to generate all or part of the electricity delivered to the property.

> "The cleanest, most sustainable kilowatt hour is the one not used."
>
> —**Marianne Osterkorn,** Executive Director, Renewable Energy and Energy Efficiency Partnership (REEEP)[6]

Offsetting Remaining Emissions

When all on-site modes of carbon emission reductions have been exhausted, Renewable Energy Credits (RECs) and carbon offsets are alternatives to balance unavoidable emissions.[7] Both RECs and carbon offsets help an organization reduce their carbon footprint, but they have different uses in supporting claims of carbon neutrality.

RECs seek to reduce emissions associated with purchased electricity (scope 2) by funding an existing renewable energy source and ultimately shifting more supply to renewable sources. Each REC represents the attributes of one megawatt-hour (MWh) of renewable energy and allows the purchaser to claim to use renewable energy. Some RECs are independently verified, such as those with Green-e® certification. The price of RECs tends to fluctuate cyclically each year, generally increasing during the first quarter of the year, through March—the deadline for building owners to purchase Green-e® RECs to offset their previous year's consumption. Bundled RECs can be purchased locally for the property through Power Purchase Agreements (PPAs), where available, while unbundled RECs can be purchased at a national portfolio level for all properties in the U.S. When the owner of a REC makes a claim about renewable energy based on it, that REC is "retired"—which means that building owners cannot sell the same REC to another party once they've claimed credit for it.[8] Currently, RECs have been responding to increased demand, and REC pricing has escalated higher, with 2021 being the most volatile year on record. MIM believes that REC pricing will continue to increase, due to more owners adopting carbon neutral goals.

Carbon offsets are utilized to 'balance' carbon emissions (primarily scope 1 or 3) using a specific activity that will remove, reduce, or sequester emissions in another location. An offset represents a metric ton of emissions avoided. Carbon offsets can be purchased from a voluntary market and help to finance a project such as installing a new, renewable energy power plant somewhere in the world. Other examples of carbon offsets are solar cookstoves and hot water heaters for families or municipalities. Because offsets don't reduce carbon emissions at the source, offsets have sometimes been criticized for allowing companies to continue emitting carbon (and thus in some cases polluting the air) near their facilities.

One of the primary concerns with carbon offsets involves the concept of additionality, i.e., would buying the specific offset lead to a reduction in emissions that would not have happened otherwise? It's important to question whether the purchase actually resulted in additional carbon being sequestered versus a project that was taking place and would have sequestered the same amount of emissions whether or not your offset had been purchased. An additional concern includes the permanence of offsets purchased. To achieve true carbon neutrality, the emissions must be kept out of our atmosphere permanently. For example, utilizing carbon offsets from a tree planting project that will then be cleared decades later negates some of the effectiveness of the offset. Additionally, carbon leakage is a concept that is associated with the notion that offset projects can drive others to emit in different locations. For example, a carbon offset project that preserves forest areas could drive locals in the area to simply clear forests in another location. This results in emissions 'leaking' as a result of the offset project. Other concerns with offsets include double-counting and verification methods as the offset market gains traction on a global scale. To help mitigate these concerns, it is important to work with a respected offset provider and only purchase carbon offsets that meet reputable and approved third-party standards.

RECs and Offsets can be an important strategy for reaching carbon neutrality after making on-site reductions such as deceasing energy usage, installing on-site renewables, and buying renewable energy, with the goal to reduce net emissions and need fewer RECs and offsets for the same set of properties, year over year. Some assets may be able to completely eliminate their operational emissions, such as a single-story industrial or retail building, with the installation of a large rooftop solar array; while other assets, like mid-rise multi-family communities and high-rise office buildings, may only be able to cover a small percentage of their operational emissions through on-site renewables and will depend more heavily on RECs and offsets. Portfolio owners must take these differences into account and work to reduce carbon emissions both at the asset level and across the portfolio.

MIM's MetZero™ approach, as highlighted above, purposely employs the Carbon Cascade approach that seeks to reduce energy demand as much as possible, then moves to the use of renewable energy, and finally employs the use of carbon offsets or RECs to reach carbon neutrality in select portfolios. MIM sees this approach as an effective way to take climate action and achieve attainable carbon neutrality goals, while strategically establishing resilience to the portfolio. More details on this approach can be found in this recent paper, "Investors Expect and Demand Meaningful Environmental Goals and Progress".

The Future Journey to Carbon Neutrality

MIM believes the real estate industry must transition away from, and disrupt, 'business as usual' investing. Our ecological (and economic) systems are stressed and overburdened by anthropogenic activities, and real estate has a major role to play in response. Investors committing to carbon neutrality and utilizing the strategies outlined in this paper are important first steps. While many investors are making commitments to achieve carbon neutrality by 2050, or in a similarly distant future, it is important that the industry focus on short-term progress and incremental goals.

In our next report in this series, we will delve into current and future legislation related to carbon neutrality, and how regulatory changes may affect real estate investing.

Endnotes

1 https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/
2 https://www.ipcc.ch/sr15/chapter/glossary/
3 https://ecologi.com/articles/blog/carbon-neutral-vs-net-zero-whats-the-difference
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[2] As of September 30, 2021. At estimated fair value. Represents the value of all commercial mortgage loans and real estate equity managed by MIM, presented on the basis of gross market value (inclusive of encumbering debt).

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