

Decarbonizing Commercial Office Spaces: Creating a New Business as Usual

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ABSTRACT

The commercial real estate sector is at a pivotal moment. As more U.S. cities adopt climate action plans along with stricter, performance-based energy codes and standards, practitioners must rise to face the huge challenges of reducing building emissions amid an office landscape transformed by a global pandemic. With tenants in leased spaces typically consuming more than half of a commercial building's energy, landlords and tenants must work together to unlock substantial energy and carbon reductions in office buildings.

The *Decarbonizing Commercial Office Spaces* initiative – an ongoing effort launched in fall 2020 by the Building Energy Exchange, the Institute for Market Transformation, and the NYC Climate Action Alliance – is assessing business as usual within commercial real estate to identify opportunities for improvement and collaboration to drive sustained decarbonization and energy efficiency of leased offices. This paper will:

- identify current obstacles and knowledge gaps that prevent effective project planning and limit landlord-tenant collaboration.
- define the commercial tenant leasing process
- establish decision makers and intervention opportunities critical to reducing the energy and carbon footprint of tenant spaces.

The paper will also describe a suite of actionable, pragmatic resources tailored for key stakeholders involved in leasing and office utilization. The new tools and curriculum – such as high-performance lease language, site selection guidelines, and retrofit tear sheets – will subsequently be piloted and refined to ensure that the recommended practices gain traction within the market. The results will empower the commercial real estate industry to implement solutions that meet ESG goals, create sustainable and healthy workplaces, and embrace a carbon free future.

Introduction and Context

The building industry has seen a confluence of factors in recent years catalyzing the industry towards reducing energy consumption and carbon emissions in an effort to minimize the building industry's contributions towards climate change. Two key drivers influencing the commercial real estate sector are 1) the enactment of rigorous climate policies and 2) the impacts of the evolving global pandemic.

Climate Regulations & ESG Goals. Cities and states across the nation are more aggressively pursuing climate goals often manifesting as improved energy codes and new

climate regulations. Cities such as Las Vegas, Mesa, New York, Philadelphia, Phoenix, Reno, San Antonio, St. Louis, and Tucson have adopted stricter energy codes in the past several years. In New York City, recent climate change mitigation efforts have helped reduce greenhouse gas emissions from buildings by roughly 20% between 2005 and 2019. Even so, the building sector still contributes nearly 70% of New York City's greenhouse gas emissions. Furthermore, New York City is an example of a city leveraging climate policies above and beyond energy code. Enacted in 2019, Local Law 97 (LL97) is a historic law which requires buildings 25,000 sq. ft. or larger to meet increasingly stringent carbon emissions limits beginning in 2024. Otherwise, property owners will face hefty fines for buildings that fail to meet the mandated emissions caps.

Besides efforts from municipalities, an increasing number of companies are setting and enforcing environmental, social, and governance (ESG) standards which are influencing the decision-making process and steering organizations towards more climate- and energy-conscious practices, such as achieving net-zero emissions by a target date.

Pandemic Impacts. In addition, commercial real estate has been substantially impacted by COVID-19 with office building occupancy reaching historic lows during the height of the pandemic causing building owners and tenants to consider how their spaces need to change to meet the challenges of a work environment impacted by an ongoing pandemic.

One key result of social distancing and stay-at-home mandates is that they revealed inefficiencies in the systems and operations of office buildings and tenant spaces. Though occupancy of New York City offices decreased by 90+%, energy consumption only declined between 10-30%. This discrepancy is the result of a myriad of factors including, operating buildings at basic levels to accommodate essential workers and building systems, broad HVAC zoning, continuous plug loads to support remote working, and more.

Together, climate imperatives and the health crisis present a unique opportunity to reassess how our commercial buildings are designed and operated, and to make deep energy retrofits the new industry standard.

The Initiative

In recognition of these unprecedented circumstances, New York State Energy Research and Development Authority (NYSERDA) launched the *Decarbonizing New York City Offices* project in the fall of 2020 and assembled a project team – lead by the Building Energy Exchange, the Institute for Market Transformation, and the NYC Climate Action Alliance. The project focuses on assessing business as usual, as well as impacts from the COVID-19 pandemic on the commercial real estate industry to identify opportunities for improvement and collaboration in an effort to meet climate goals, reduce/eliminate reliance on fossil fuels, and mitigate inefficiencies.

This ambitious undertaking is organized around the following framework:

- **Industry Analysis** - to gather information and insights from the industry in order to understand knowledge gaps and barriers to implementing efficiency and decarbonization strategies within leased office spaces
- **Impact Opportunity Assessment** - to synthesize the findings in order to identify intervention opportunities for greatest impact and lasting change

- **Resource Development** - to create pragmatic, actionable resources that will drive decarbonization of commercial offices
- **Outreach & Delivery** - to introduce refined and vetted resources to industry stakeholders to ensure the new practices gain traction and momentum within the industry

Utilizing the framework above, this initiative will support commercial real estate along a trajectory towards creating more energy efficient, healthier and more productive workplaces.

Industry Analysis

The project kicked off by conducting research into the current state of the industry. Over the course of 12 months this team lead the key efforts listed below which explored stakeholders' responses to pandemic-related business interruptions, current leasing practices, knowledge gaps regarding how to comply with new regulatory mandates, and other barriers to prioritizing decarbonization practices.

Steering Committee. A crucial, early step in the project involved assembling a Steering Committee of strategic advisors from all facets of the commercial real estate sector to provide ongoing input and support to the authors over the course of the initiative. The Committee includes prominent real estate stakeholders, representing a diverse group of professionals including building owners, tenants, brokers, attorneys, designers, and others involved in all aspects of the leasing process. In addition to having a Steering Committee, the authors utilized workshops and one-on-one interviews with additional subject matter experts such as property managers, leasing attorneys and specialists, and commercial brokers. Having a robust Steering Committee is essential to the initiative's success since members will provide critical insights and challenge assumptions, enabling the authors to develop the most useful and impactful set of industry resources possible.

Industry Survey. In addition, the authors developed and disseminated an industry-wide survey to gather feedback from key commercial real estate members in the New York City area who have knowledge of or influence over the tenant leasing process, space design, and operations. The survey sought to assess:

- **COVID-19 Impacts:** Impacts to business practices and space needs as a result of pandemic related limitations.
- **Energy Efficiency Trends:** Current approaches that both enable and impact energy efficiency investments and actions.
- **Intervention Opportunities:** Challenges within business-as-usual operations that would benefit from strategic changes and resource development.

Regarding the survey's structure, the authors:

- Developed fifty-seven (57) questions with each stakeholder type answering a subset of questions.
- Administered the survey online beginning November 30, 2020 and concluding January 29, 2021.

- Collected responses from seven (7) stakeholder types: tenants, building owners, building managers, brokers, attorneys, consultants, and vendors.

Overall, 270 individuals took the survey, providing findings that are indicative of industry trends. More than half of all survey respondents were consultants, including architects, engineers, and sustainability consultants. Brokers and attorneys had just five and three respondents, respectively, highlighting the need for further strategic outreach to these groups in order to gain additional insights. Even so, the survey results shed light on new energy efficiency priorities and provided a deeper understanding of potential stakeholder knowledge gaps that need to be overcome.

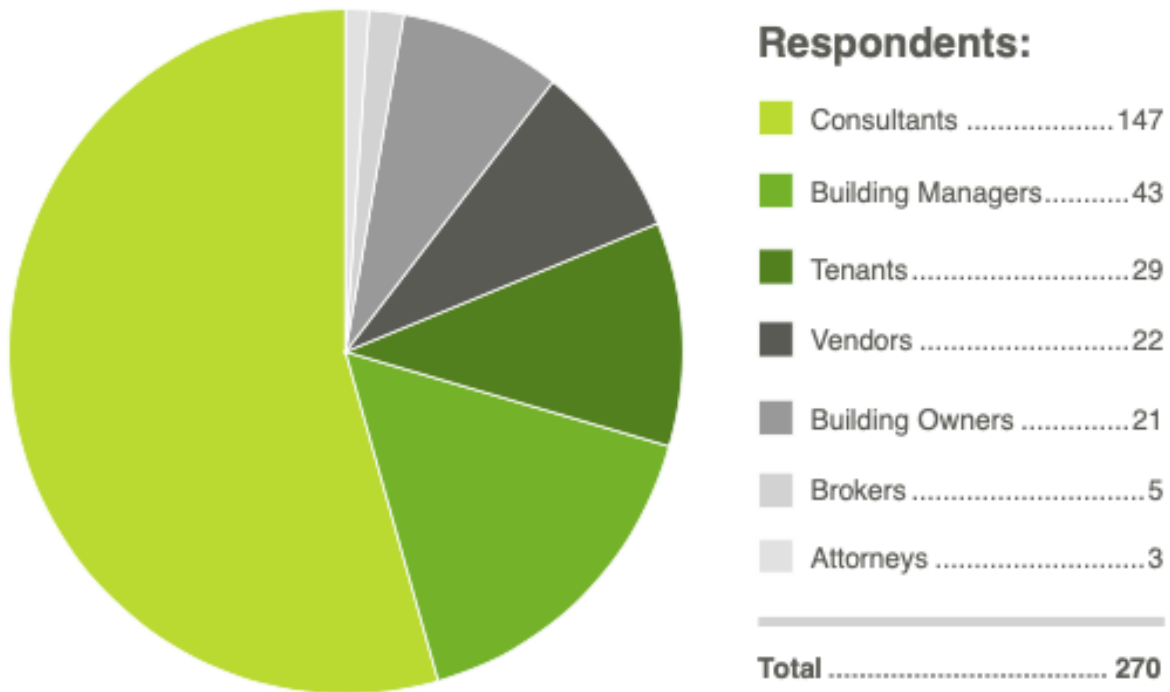


Figure 1. Survey respondents per stakeholder type

What drives *your company* to focus on energy efficiency in office buildings? Rank top three.

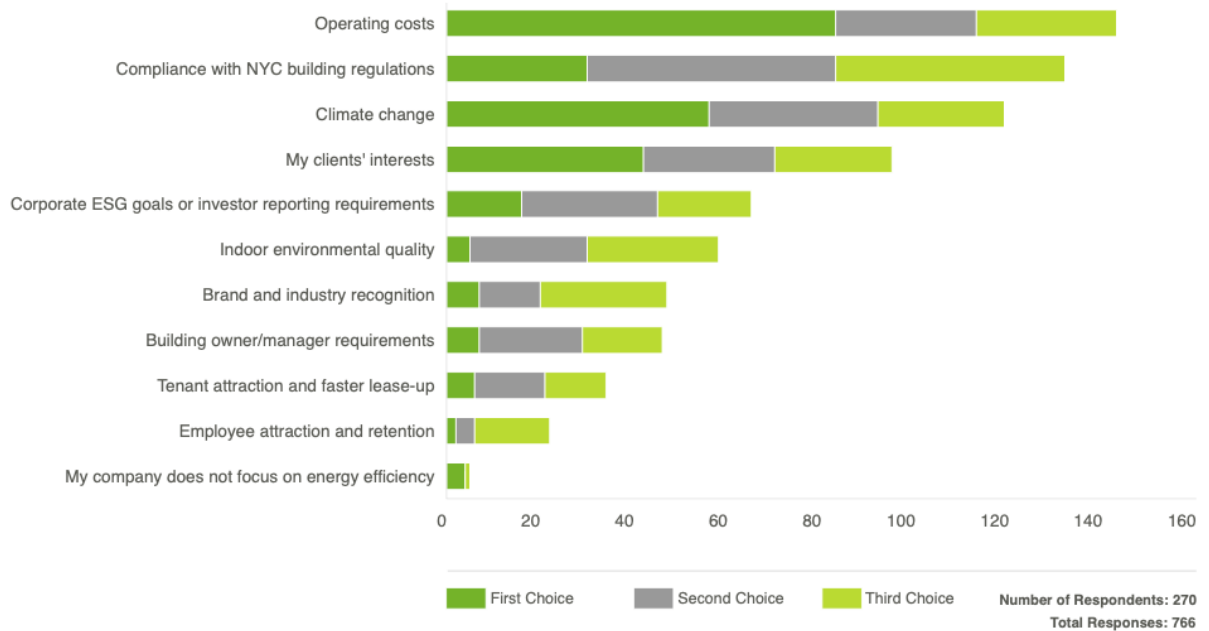


Figure 2. Sample survey question and results

Existing Resource Analysis. Furthermore, the authors conducted an audit of existing industry resources that address and advance energy efficiency in leased office spaces. Hundreds of resources have been created to guide building owners, tenants, consultants, and others on solutions to improve inefficiencies in buildings.

To hone in on the most effective resources in the New York market, the authors evaluated analyzed more than 150 existing resources to compare content and recommended actions with regards to carbon emissions reductions and energy efficiency. In addition, the authors explored how these resources were delivered, e.g. webinar, white paper, tear sheet, checklist, etc. and actionability of their content. The authors conducted the inventory to better understand potential knowledge gaps within the industry.

Industry Analysis Findings. The project authors used the information and valuable insights collected during the Industry Analysis to assess ways the industry must transition from current business as usual, in which energy efficiency and carbon emission reduction efforts are not prioritized, towards “Future Practices” that promote strategic energy efficiency investments, decarbonization strategies, and forward-thinking leasing practices. The following assessment summarizes how the commercial real estate industry at large typically operates and how the industry ought to strategically evolve.

Current Practices do not take into consideration increasingly stringent environmental and regulatory standards impacting real estate. Stakeholders often do not prioritize energy efficiency and decarbonization strategies due to:

- uncertainty in the market from the ongoing and evolving COVID pandemic
- a lack of understanding regarding corporate ESG, high performance building standards, and/or energy code requirements, as well as the potential impacts of noncompliance
- a wide range of competing priorities
- a lack of data and/or key information to guide the design and operation of efficient office spaces
- a lack of motivation and/or incentives to go above and beyond the status quo (e.g. minimum code requirements or basic client demands)

Future Practices evaluate the risks/opportunities from current and future impacts from environmental and regulatory changes. Stakeholders prioritize, pursue, implement, and monitor energy efficiency and decarbonization strategies through:

- early engagement and continued collaboration
- accessible and ongoing data sharing
- awareness regarding the benefits of and rationale for reducing the energy/carbon footprint of office spaces
- leasing terms that are mutually beneficial and distribute responsibilities and financial needs equitably

Impact Opportunity Assessment

Creating lasting change requires getting the right information into the right hands at the right time. As such, the authors were intentional about defining who in the commercial real estate industry the project resources would focus on, and at when the resources would best be leveraged.

Target Audience. To begin, the authors assessed the commercial real estate industry at large and identified key stakeholders that have knowledge of or influence over the tenant leasing process, space design, and operations. From there, the authors honed the intended audience to specific stakeholders that have the greatest opportunity to impact of leased office spaces.

Of the array of stakeholders, the authors deemed the following groups as Primary Stakeholder audience members:

- Tenants
- Building Owner/Managers
- Consultants – architects, engineers, & energy/sustainability specialists

Attorneys comprise the Secondary Stakeholder audience in terms of priority based on their specific expertise regarding the commercial leases and term negotiations. While Brokers are a critical stakeholder, the authors determined that this cohort can be difficult to engage and are often driven by client demands. As such, the authors concluded that getting Tenants and Building Owners to prioritize energy efficiency and fossil fuel use reduction is a critical initial step to gaining traction within the Broker community.



Figure 2. Commercial real estate stakeholder prioritization

Points of Intervention within the Tenant Leasing Cycle. To help identify opportune points of intervention, the authors utilized the commercial leasing cycle as a framework. First the authors identified key phases of the leasing process along with key stakeholders and actions as they relate to improving energy efficiency in tenant spaces

Within the leasing process of an office space, there are eight steps or phases during which a Building Owner and/or a Tenant evaluate changes to a leased commercial space. These steps are significant since they provide opportunities to integrate meaningful energy saving practices into the design and operations of a tenant space. With that said, the authors identified four priority steps that present the greatest opportunity for integrating energy and carbon reduction strategies into the leasing cycle. Those four steps include:

- Site Selection
- Letter of Intent
- Lease Negotiations
- Tenant Fit Out

In the Current Practice these leasing steps are generally driven by a few standard factors, such as location, amenities, business needs, and cost. In the Future Practice, these steps must ensure full execution of highly efficient practices in order to drastically drive down carbon emissions.



Figure 3. The commercial tenant leasing cycle and the four priority steps.

Resource Development

The preceding efforts provided the authors with critical information to begin to define content that would help fill knowledge gaps and overcome current barriers in the industry. Based on the findings, the authors determined that the following resources are essential tools to facilitate a comprehensive shift in industry practices towards energy efficiency and carbon emissions reductions within leased commercial spaces:

- Site Selection Guidelines
- Standardized Bldg Marketing Materials
- Letter of Intent (LOI) Guide
- Lease Negotiation Guide / Model High Performance Lease
- Tenant Fit Out Guidelines
- Retrofit Package Tear Sheets

A vital component of the transition from the Current to Future Practices is the development of pragmatic, actionable resources that will support stakeholders to prioritize and implement new strategies at specific leasing steps. The following organizes the anticipated resources based on which key step in the commercial tenant leasing cycle they would be utilized and notes which stakeholders would utilize the resource.

Table 1. Project resources per leasing step and stakeholder

Leasing Step	Resource	Stakeholders				
		Tenant	Bldg Owner/ Manager	Consultant	Attorney	Broker
Site Selection	Site Selection Guidelines	•		•		•
	Standardized Bldg Marketing Materials		•			•
Letter of Intent (LOI)	Letter of Intent (LOI) Guide	•	•			•
Lease Negotiations	Model High Performance Lease	•	•		•	
Tenant Fit-Out	Tenant Fit-Out Guidelines	•		•		
	Retrofit Package Tear Sheets	•		•		

The “Industry Resource Profile” tables below provide details regarding each resource’s format, intent, and content.

Table 2. Site Selection Guidelines

Format	Guide + Questionnaire
Intent	To help: • Tenants and their Consultants easily gather critical building information that may not be typically provided by Building Owners • Tenants and their Consultants understand the implications of specific building systems and performance • Tenants prioritize and evaluate energy efficiency when selecting a space to lease • Brokers guide their Tenant clients on the best spaces in terms of energy efficiency and performance
Content	A guide that includes: • strategic questions for Tenants to ask Building Owners/Managers about the base building systems and energy performance • guidelines to help Tenants select the optimal base building and space • a concise 1-2pg questionnaire that Tenants can share with Building Owners to complete

Table 3. Standardized Building Marketing Materials

Format	Checklist
Intent	To help: • Building Owners standardize energy performance in their marketing materials • Brokers understand the types of energy performance information to highlight
Content	A checklist that includes: • recommendations for key information Building Owners should share with Tenants regarding the base building's systems and performance • rationale for why specific pieces of information should be shared

Table 4. Letter of Intent (LOI) Guide

Format	Guide + Template Clauses
Intent	• To help Brokers integrate energy- and performance-aligned terms into the LOI • To provide Attorneys with a framework from which to develop energy- and performance-aligned lease clauses
Content	A guide that includes: • simple and succinct sample language regarding efficiency and carbon reductions that can be added to an LOI • rationale for including the energy- and performance- aligned language within the LOI

Table 5. Lease Negotiation Guide / Model High Performance Lease

Format	Guide + Template Clauses
Intent	To help: • Tenants and Building Owners prioritize new, energy- and performance-aligned clauses that will enable buildings to meet energy and carbon reduction targets • Attorneys by providing boilerplate energy- and performance-aligned clauses to help ensure efficiency terms are integrated into executed leases
Content	A guide that includes: • a list of energy- and performance-aligned clauses from both the Tenant and Building Owner perspective related to different sustainability and efficiency topics • a list of recommended engineering support services to help Building Owners and Tenants – assign a relative and equitable portion of the whole building's greenhouse gas (GHG) emissions allowance to a tenant space

	– calculate tenant energy consumption and GHG emissions – based on key factors including tenant space size, systems, and occupancy type – to determine if the tenant has exceeded their predetermined GHG emissions allowance
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Table 6. Tenant Fit-Out Guidelines

Format	Guide
Intent	To help: • Tenants prioritize energy efficiency during the design and construction of their space to ensure they comply with NYC LL97 requirements and other advanced building standards, beyond simply meeting energy code • Tenants comply with energy and performance terms outlined in the lease • Consultants design and construct energy efficient Tenant spaces to energy performance terms outlined in the lease that will support whole building NYC LL97 compliance and other advance building standards
Content	A guide that: • defines a Tenant’s obligation regarding the design and construction of their leased space

Table 7. Retrofit Package Tear Sheets

Format	Tear Sheets
Intent	To help: • Tenants facilitate the selection of optimal energy conservation measures (ECMs) based on key parameters, such as building systems and energy/carbon reduction goals • Consultants better understand optimal ECMs based on base building systems and Tenant interests / needs
Content	Tear sheets that: • provide recommendations for ECMs in Tenant spaces • organize ECMs by base building system and tenant type • highlight key metrics such as: incremental cost, operational savings, return on investment, energy savings, emissions savings, tenant disruption, etc.

Outreach & Delivery

Looking beyond resource development efforts, the authors know that lasting change requires industry buy-in and that new concepts and tools may be best received by trusted industry members. As such, the authors are developing an engagement strategy to maximize the impact that these curated resources have on the market. The engagement strategy involves:

- targeted outreach, in which resources are presented to select stakeholder and technical groups, such as the NYC Carbon Challenge Commercial Working Group and the New York State Bar
- partner dissemination, in which key industry associations, such as the Real Estate Board of New York (REBNY), endorse and distribute the project resources to their member network

The resources themselves will be packaged into process-oriented playbooks with content and resources tailored to each stakeholder group. The resources playbooks will be introduced to the market via a multi-pronged delivery plan utilizing strategies such as:

- Launch Event to spotlight the project work and the publication of the Stakeholder-specific playbooks/resources.
- Training Series involving 1-hr lunch & learns presented by a member of a Speakers' Bureau to targeted industry organizations.
- E-Learning Course(s) hosted on an on-demand learning platform and explain the project content and resources. Each course would have continuing education credit opportunities.
- An easy to navigate, visually compelling microsite containing project content, resources, and related information.
- A targeted social media campaign utilizing platforms such as LinkedIn, Twitter, Instagram, etc., that captures stakeholders' attention and drives them to the project's microsite.

Conclusion

The efforts behind the *Decarbonizing Commercial Office Spaces* initiative are ongoing. The team is currently developing and refining the suite of industry resources. As the resources are created and delivered to market, the team will assess how the new tools help decision makers prioritize energy and carbon emission reduction strategies across key phases of the commercial tenant leasing cycle.

Accelerated by the pandemic, dramatic shifts are occurring in how office tenants are designing and using their space. As such, decision-makers within the commercial real estate industry need new tools and resources to create sustainable and healthy workplaces, meet local & state environmental and public health regulations, and reduce energy use and carbon emissions. With a renewed focus on energy and emissions, the entire commercial real estate sector can help reimagine the future of office buildings and create a decarbonized built environment.

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